LIBRARY
WEATHER BUREAU
No. 21084

U. S. DEPARTMENT OF AGRICULTURE.

WEATHER BUREAU.

REPORT

OF THE

LIBRARY
MAY 8 1899
Weather Bureau

CHIEF OF THE WEATHER BUREAU.

QC
983
.U49
1896-1897
c.2

1896-97.

LIBRARY
N.O.A.A.
U S Dept of Commerce

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1897.

National Oceanic and Atmospheric Administration

Climate Database Modernization Program

ERRATA NOTICE

One or more conditions of the original document may affect the quality of the image, such as:

Discolored pages
Faded or light ink
Binding intrudes into the text

This document has been imaged through the NOAA Climate Database Modernization Program. To view the original document, please contact the NOAA Central Library in Silver Spring, MD at (301) 713-2607 x124 or www.reference@nodc.noaa.gov.

LASON
Imaging Subcontractor
12200 Kiln Court
Beltsville, MD 20704-1387
March 28, 2002

AN ACT providing for the public printing and binding and the distribution of public documents.

SEC. 73. Extra copies of documents and reports shall be printed promptly when the same shall be ready for publication, and shall be bound in paper or cloth as directed by the Joint Committee on Printing, and shall be of the number following in addition to the usual number:

* * * * * * *

Of the Annual Report of the Chief of the Weather Bureau, four thousand copies; one thousand copies for the Senate, two thousand copies for the House, and one thousand copies for the Bureau.

LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU,
Washington, D. C., September 30, 1897.

SIR: I have the honor to submit a report of the operations of the Weather Bureau during the year ended June 30, 1897.

The report naturally divides itself into three main heads. The first deals with administrative work (Part I); the second furnishes an account of the climatology of the year (Parts II, III, IV, V, and VI); and the third embraces the results of investigations upon the rainfall of the United States and the floods of the Mississippi Valley, forming Parts VII and VIII, respectively.

Very respectfully,

WILLIS L. MOORE,
Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.

21084
cop. 2

Blank page retained for pagination

ILLUSTRATIONS.

CHARTS (Part VI).

		Page.
Chart I.	Normal pressure and prevailing winds, January	277
II.	Isobars, isotherms, and prevailing winds, January, 1896	To face Chart I
III.	Normal pressure and prevailing winds for July	278
IV.	Isobars, isotherms, and prevailing winds, July, 1896	Chart IV to face Chart III
V.	Sea-level temperatures, January	279
VI.	Sea-level temperatures, February	279
VII.	Sea-level temperatures, March	
VIII.	Sea-level temperatures, April	
IX.	Sea-level temperatures, May	
X.	Sea-level temperatures, June	
XI.	Sea-level temperatures, July	
XII.	Sea-level temperatures, August	
XIII.	Sea-level temperatures, September	
XIV.	Sea-level temperatures, October	
XV.	Sea-level temperatures, November	
XVI.	Sea-level temperatures, December	
XVII.	Sea-level temperature, year	
XVIII.	Annual precipitation, 1896	285
XIX.	Average cloudiness, 1896	Charts XIX and XX to face each other
XX.	Normal annual cloudiness	286
XXI.	Normal annual relative humidity	291
XXII.	Tornadoes, 1893	308

CHARTS (Part VII).

I.	Mean annual precipitation	320
II.	Normal rainfall of the United States east of one hundred and fifth meridian, April to September, inclusive	323
III.	Least rainfall, April to September, inclusive	327
IV.	Pressure distribution and prevailing winds, December, 1889 (Pacific Coast and plateau region)	334
V.	Rainfall, December, 1889 (Pacific Coast and plateau region)	334
VI.	Pressure distribution and prevailing winds, January, 1889 (Pacific Coast and plateau region)	334
VII.	Rainfall, January, 1889 (Pacific Coast and plateau region)	334
VIII.	Pressure distribution and prevailing winds, March, 1897	334
IX.	Precipitation, March, 1897	334
X.	Pressure distribution and prevailing winds, March, 1885	334
XI.	Precipitation, March, 1885	334

PLATES.

Plate I.	Types of monthly distribution of precipitation in the United States	321
II.	Progressive averages of precipitation, 1834-1896	332
III.	Curves of probable maximum intensity of rainfall	364
IV.	Drainage basin of the Mississippi River	432
V.	Alluvial regions of the Mississippi and the overflowed area of 1897	
VI.	Normal hydrographs for the year	
VII.	Normal annual precipitation	
VIII.	Normal precipitation for January	
IX.	Normal precipitation for February	
X.	Normal precipitation for March	
XI.	Normal precipitation for April	
XII.	Normal precipitation for May	

Page

Plate XIII. Normal precipitation for June
XIV. Normal precipitation for July
XV. Normal precipitation for August
XVI. Normal precipitation for September
XVII. Normal precipitation for October
XVIII. Normal precipitation for November
XIX. Normal precipitation for December
XX. Precipitation, January, 1882
XXI. Precipitation, February, 1882
XXII. Precipitation, March, 1882
XXIII. Departure from normal precipitation, January, 1882
XXIV. Departure from normal precipitation, February, 1882
XXV. Departure from normal precipitation, January 1 to February 28, 1882
XXVI. Hydrographs for flood of 1882
XXVII. Precipitation, January, 1883
XXVIII. Precipitation, February, 1883
XXIX. Precipitation, March, 1883
XXX. Departure from normal precipitation, January, 1883
XXXI. Departure from normal precipitation, February, 1883
XXXII. Departure from normal precipitation, January 1 to February 28, 1883
XXXIII. Hydrographs for flood of 1883
XXXIV. Precipitation for January, 1884
XXXV. Precipitation for February, 1884
XXXVI. Precipitation for March, 1884
XXXVII. Departure from normal precipitation, January, 1884 432
XXXVIII. Departure from normal precipitation, February, 1884
XXXIX. Departure from normal precipitation, January 1 to February 29, 1884
XL. Hydrographs for flood of 1884
XLI. Precipitation, January, 1890
XLII. Precipitation, February, 1890
XLIII. Precipitation, March, 1890
XLIV. Departure from normal precipitation, February, 1890
XLV. Departure from normal precipitation, March, 1890
XLVI. Departure from normal precipitation, February 1 to March 31, 1890
XLVII. Hydrographs for flood of 1890
XLVIII. Precipitation, April, 1893
XLIX. Precipitation, May, 1893
L. Precipitation, June, 1893
LI. Departure from normal precipitation, April, 1893
LII. Departure from normal precipitation, May, 1893
LIII. Departure from normal precipitation, April 1 to May 31, 1893
LIV. Hydrographs for flood of 1893
LV. Precipitation, January, 1897
LVI. Precipitation, February, 1897
LVII. Precipitation, March, 1897
LVIII. Departure from normal precipitation, February, 1897
LIX. Departure from normal precipitation, March, 1897
LX. Departure from normal precipitation, February 1 to March 31, 1897
LXI. Hydrographs for flood of 1897

CONTENTS.

	Page.
PART I.—Administrative report	1
Introduction	3
Operations of the year	5
Forecasts	5
Flood warnings	6
Hydrography	7
Cold-wave and frost warnings	8
The distribution of forecasts and warnings	8
Distribution of weather statistics by maps	9
Climatic work	9
Publications	10
Monthly Weather Review	10
Original investigations and reports	11
Climatology	11
The rainfall of the United States	12
Some climatic features of the arid regions	12
Storms, storm tracks, and weather forecasting	13
Aerial work	13
Object of kite flying	14
Cloud work	15
PART II.—Climatology	17
List of observing stations	18
Table 1.—Latitude, longitude, elevation, etc., of Weather Bureau stations	18
Table 2.—Changes in Weather Bureau stations during 1896	22
Hourly averages of atmospheric pressure, temperature, and wind from records of automatic instruments at 28 stations	26
Explanation of the tables	24
Average pressure, in inches and thousandths, for each hour of seventy-fifth meridian time	26
Average temperature for each hour of seventy-fifth meridian time	42
Wind—velocity and frequency	58
Monthly mean values of pressure, temperature, and wind for the lustrum 1891–1895	73
Explanation of the tables	73
Average pressure, in inches and thousandths, for the five years 1891–1895	78
Average temperature for the five years 1891–1895	94
Average hourly velocity of the wind for the five years 1891–1895	110
PART III.—Climatology—Monthly and annual meteorological summaries for 142 Weather Bureau stations	125
Explanation of the tables	126
Annual meteorological summaries for the year ending December 31, 1896	128
PART IV.—Climatology—Monthly and annual means and extremes of temperature and dates of first and last killing frost	201
PART V.—Climatology—Monthly and annual precipitation	235
PART VI.—Climatology—Miscellaneous meteorological tables, charts, and reports	275
Climatic statistics	277
Pressure distribution and prevailing winds, January and July	277
Normal temperature	279
Sea-level temperature, charts of	282
Temperature of 1896—monthly departures, by geographic districts	282
Special features	282
Variability	283
Precipitation, 1896—monthly departures by geographic districts	285
Cloudiness	286

PART VI.—Continued. Page.
Climatic statistics—Continued.
Relative humidity 288
Sunshine 293
Snowfall 306
Local storms and tornadoes, description of 308
The West India hurricane of September 29 and 30, 1896 312
Tables of Part VI:
I.—Relative frequency of the winds at Yuma, Ariz 278
II.—Monthly and annual mean temperature 280
III.—Monthly departures of temperature by geographic districts 282
IV.—Number of days during 1896 that daily mean temperature was normal or differed therefrom by 1° to 5°, 6° to 10°, 11° to 20°, 21° and over 284
V.—Variability of temperature 284
VI.—Departure of precipitation, 1896 285
VII.—Average cloudiness 286
VIII.—Relative humidity, differences between series *a* and *b* 289
IX.—Normal relative humidity 290
PART VII.—Rainfall of the United States 315
Introduction 317
I.—Statistics used, and their accuracy 318
The exposure of the rain gauge 318
Comparison of roof and ground exposures 318
The probable error of short period rainfall registers 319
II.—Geographic distribution 320
General features of 320
Addition of five-year period, 1892–1896, effect of, on averages 320
III.—Monthly distribution by districts and types 321
Pacific 321
Sub-Pacific 321
Arizona 322
Rocky Mountain 322
Eastern foothills 322
Plains 322
Gulf 322
Southern Appalachian and Tennessee 322
South Atlantic 322
Middle Atlantic 323
New England 323
Lake region 323
Ohio Valley 323
IV.—The precipitation of the crop-growing season 323
Pacific Coast compared with the East 323
Average distribution for the crop season 327
Least rainfall during crop season 327
Ratio of the rainfall of the crop season to the total of the year 327
Periods of drought 328
Least seasonal rainfall of 1871–1896 compared with the minimum of previous years 328
V.—Secular variation 328
Averages of ten consecutive years, 1877–1886, 1887–1896, compared 329
Progressive averages of precipitation 330
The precipitation of December, 1889 333
VI.—Details of precipitation by geographic districts 335
Washington 337
Oregon 337
California 339
Idaho 341
Nevada 343
Utah 343
Arizona 345
New Mexico 345
Montana 345
Wyoming 347
Colorado 347
The Plains 349
Gulf Coast and Texas 355

PART VII.—Rainfall of the United States—Continued. Page.
Introduction—Continued.
VI.—Details of precipitation by geographic districts—Continued.
Lower Mississippi Valley 355
South Atlantic Coast and Florida 355
Southern Appalachian and Tennessee 355
Middle States 357
Ohio Valley 357
Lake region 357
New England 359
Rainy days, average number of 360
VII.—Excessive precipitation 362
PART VIII.—Floods of the Mississippi River 369
Section I.—The river and basin 371
Introduction.—Scope of the work 371
Sources of information.—Work of delta survey, river commissions, and Weather Bureau 371
The drainage basin.—Comparison of Mississippi with other river systems; extent of the basin; subdivisions of Mississippi drainage basin 372
Ohio Basin.—Character of the basin; the Ohio River; smaller divisions of the basin 373
Upper Mississippi Basin.—The Upper Mississippi River; character and extent of the basin 373
Missouri Basin.—Extent and diversified character; the Missouri River 374
Arkansas Basin.—Character of the basin; the upper Arkansas River; the lower Arkansas River 375
Red Basin.—Character of the basin; the Red River; outlet bayous of the lower Red 377
Central Valley.—Extent of the Central Valley; basins of the Kaskaskia and Meramec rivers; basin of the St. Francis River; St. Francis bottom; basins of the Obion and Hatchee rivers; basin of the Yazoo River; the Yazoo bottom; the Tensas bottom; basins of the Big Black and Homochitto rivers; extent of the delta; character of the delta; general features of the Central Valley 378
Lower Mississippi River.—The alluvial plain; character of the Lower Mississippi River; dimensions of the river; slope of the water surface; mouths of the Mississippi; Mississippi levees 381
Section II.—Normal precipitation and drainage 383
Downfall and drainage.—Their relation; method of determining downfall 383
Measurement of precipitation.—Errors in hyetal measurements; magnitude of rain-gauge errors; cause of error is the wind 383
Normal amount of precipitation.—Proper method of determining normal precipitation; the isohyetal charts; geographical distribution of precipitation; seasonal changes in distribution 384
Normal precipitation on the watersheds.—Method of its computation; average precipitation on the various watersheds 388
Normal downfall of water.—Downfall in the six chief divisions of the Mississippi Basin 389
Normal discharge of the rivers.—Determination of discharge; available data; computation of normal discharge; remarks upon the computed discharges; differences in normal drainage 390
Normal river stages.—Measurement of the stage of a river; value of river stage measurements; stations selected for study; method of computing normals; normal regimen of the rivers; mean and extreme river stages; normal monthly stages 392
Section III.—The river in flood 395
Constant liability to flood in the alluvial regions 395
Floods of this century.—Notable floods; floods since 1870; frequency and duration of floods; chief floods of the past quarter-century 395
Study of recent floods.—Six floods selected for study; precipitation in the six floods; downfall in the six floods 399
Flood of 1882.—Its two swells; the downfall which caused it; origin of the flood 401
Flood of 1883.—Its single great rise; the accompanying precipitation 402
Flood of 1884.—Its main features; distribution of rainfall 402
Flood of 1890.—The rise in three swells; origin of the flood 403
Flood of 1893.—A summer flood; the cause of it 403
Flood of 1897.—Its chief features; the rainfall and probable drainage; source of the flood 404
Comparison and cause of floods.—Relative importance of these six floods; cause of Mississippi floods 405
Section IV.—Spring flood of 1897 406
The flood of 1897.—Special reports on the flood; extent of the overflow; losses by the flood; work of the Weather Bureau 406
The Ohio River.—Sources to Wheeling, W. Va.; Wheeling to Point Pleasant, W. Va.; Point Pleasant to Lawrenceburg, Ind.; Lawrenceburg to Mount Vernon, Ind.; Mount Vernon to the mouth; Tennessee River 408
Upper Mississippi River.—Sources to Reeds Landing, Minn.; Reeds Landing to North McGregor, Iowa; North McGregor to Clinton, Iowa; Clinton to Burlington, Iowa; Burlington to Quincy, Ill.; Quincy to Louisiana, Mo.; Louisiana to the mouth of the Missouri River 413

PART VIII.—Floods of the Mississippi River—Continued. Page.

Section IV.—Spring flood of 1897—Continued.

The Missouri River.—Sources to Fort Yates, N. Dak.; Fort Yates to Chamberlain, S. Dak.; Chamberlain to Vermillion, S. Dak.; Vermillion to the Little Sioux River; Little Sioux River to Atchison, Kans.; Atchison to the mouth 417

The Arkansas River.—Sources to Dodge City, Kans.; Dodge City to the southern border of Kansas; southern border of Kansas to Dardanelle, Ark.; Dardanelle to the mouth 421

The Red River 423

Lower Mississippi River.—St. Louis, Mo., to Chester, Ill.; Chester to New Madrid, Mo.; New Madrid to Helena, Ark.; effect of the St. Francis levee; Helena to Vicksburg, Miss.; Vicksburg to the mouth 423

PART I.

ADMINISTRATIVE REPORT.

Blank page retained for pagination

REPORT OF THE CHIEF OF THE WEATHER BUREAU, 1896–97.

By way of introduction to my detailed report for the year 1896–97, I desire to submit the following comparison of the expenses and efficiency of the service during the past fiscal year as compared with those for 1883–84, when the appropriation for the weather service was the largest ever made, and to give some facts showing the necessity for a much larger appropriation in the future.

In 1883–84 the weather service cost $993,520. The extension of its scope and the increase in its usefulness since that time are matters of history. Attention is invited to a few of the important changes that have been made in recent years, particularly those showing an increase in the efficiency of the Service. The appropriation for the current year is $883,772, which is $109,748 less than in 1883, while it is safe to say that the volume of work performed and the benefits derived by the public are much greater than they were in 1883.

In 1883 weather maps were not issued, except at the Central Office in Washington, D. C. During the last fiscal year 4,315,000 maps were issued at 81 stations outside of Washington, D. C., and there has been an increase of 1,166,105 copies within the last two years, to meet the constantly increasing demands of the public.

In 1883 forecasts and warnings were sent to 8,094 places by mail, no other methods of distribution, except through the daily press and a railroad train service, being then in use. During the last fiscal year daily forecasts and warnings were sent to 51,694 places by mail, telegraph, telephone, etc., and there has been an increase in the number of places receiving forecasts in the last two years of nearly 30,000.

In 1883 no information was collected respecting the weather as influencing crops; now climate and crop conditions are reported from about 8,000 places, and the results are summarized in the Weekly Climate and Crop Bulletins which are issued at each State center and published by practically the entire press of the country, both rural and urban. In 1883 there were less than 300 voluntary observers in cooperation with the Bureau and no systematic publication of their reports was made; now there are about 3,000 voluntary observers making daily readings of standard Government thermometers and rain gauges, the daily readings being collated and neatly printed in tabular form at 42 State centers. These printed State reports are very useful in the development of the natural resources of the country. It is now possible for agriculturists, merchants, manufacturers, civil engineers, and health seekers to compare the salient climatic features of almost any county in one State with the conditions that may exist in another State.

In 1883 there were 41 stations on our seacoasts and the Great Lakes where storm signals were displayed for the benefit of mariners; now there are 253 stations where these signals are displayed, at each of which, in addition to displaying the signals, telegraphic bulletins, giving the location, intensity, and the probable movement of the storm, are distributed to vessel masters within one hour after the information is dictated by the forecast official at headquarters.

The appropriation for the current fiscal year is $883,772; it is inadequate to meet the demands made by the people, either directly to this Bureau or through their Representatives in Congress, for a material extension of the benefits of the weather service. A conservative estimate of the money needed to meet the legitimate requests of the agricultural, marine, commercial, and manufacturing interests of the country is $1,044,050, being an increase of $160,348. This sum provides for the establishment and equipment of new stations at important centers of population, $75,000

being estimated for that specific purpose. The amount now appropriated is barely sufficient for the requirements of the actual working force at the meteorological stations, leaving no opportunity for the extension of the present system or the establishment of new stations; in fact, it is only with the utmost care and by requiring from nine to twelve hours' work every day in the year, including Sundays and holidays, of the majority of station employees that the important duties of the Service can be performed. Every mail brings urgent requests from Representatives in Congress, farmers, mariners, merchants, and professional people for extensions which it is impossible to grant. In the efforts to meet this public demand all workers have been taxed to the limit of physical and mental endurance.

The increase asked for also contemplates the establishing of several stations in the southwestern part of the country, where an extensive area is not now included in the domain covered by meteorological observations. This unprotected region includes large portions of Nevada, Utah, Arizona, New Mexico, and southeastern California. This region should have four or five additional stations employing one observer each. The weather conditions which cause frost in the orange and raisin sections of California drift in a southerly direction from the north and northeast. The making of the most accurate frost warnings for the extensive fruit interests of southern California requires the additional stations above referred to. Additional evidence that these stations are essential to a better service may be had in the fact that many storms which cause rain in New Mexico, Colorado, Texas, Kansas, Nebraska, and farther east, have their origin in the open and unprotected territory which it is now proposed to cover by observation stations.

Additional stations are also needed to meet the demands of many cities which, although not being so geographically situated as to furnish the Bureau useful observations for its storm-warnings service, are still so important in their manufacturing, marine, and other industries as to render it advisable to establish complete meteorological stations in their midst for the purpose of preserving a record of the prevailing atmospheric conditions. Such a record will be exceedingly useful in the development of their industries, and it will also be possible to effect a more prompt and systematic distribution of storm warnings and forecasts than obtains at present. There are to-day over 50 cities of more than 50,000 population having no Weather Bureau station. To be sure, some of these are contiguous to cities having Weather Bureau observatories, and do not, therefore, require a completely equipped station.

The new estimates include an item of $20,000 for the purpose of purchasing standard signal lamps for all stations displaying storm signals. A few of these lamps are now in operation at several of the more important stations. Signals at these stations may be seen at a greater distance than heretofore, thus giving a greatly improved service to shipping. Conservative estimates made by those interested in shipping indicate that one hurricane sweeping the Atlantic seaboard might cause damage to floating craft of over three millions of dollars. During the past three years, ten or more of these destructive storms have visited our coast line. In every case the danger warnings have been displayed long in advance of the storm, and there have been no marine disasters of importance. There are 253 ports displaying danger signals. A recent inspection of the stations discloses the fact that the present equipment is composed of a heterogeneous assortment of lights and lanterns. The importance of a proper equipment is so great that it would be wise economy to provide each station with such a light as was, after many experiments, recently adopted as a standard by the Weather Bureau. The storm-warnings service long ago outgrew the experimental stage. It has demonstrated its usefulness to such an extent that only the most efficient and permanent appliances should be used for conveying its valuable warnings to mariners.

The estimates include an item of $10,000 over and above the amount allotted for the present fiscal year, for the purpose of purchasing instrument shelters for issue to voluntary observers of the Weather Bureau, who number about 3,000 at the present time. These shelters will enable the Bureau to obtain more accurate climatic observations, since the thermometers will be so exposed as to have free circulation of air, and yet will be protected from sunlight, rainfall, and radiation from surrounding structures. Many employees are now engaged in collating and publishing these reports, for the purpose of establishing the climatic features of every portion of each State in the Union. It is an unwise economy that does not provide for the taking of accurate observations upon which so much subsequent time and labor are expended.

An item is included of $5,000 for the purpose of erecting a small brick and stone building on the Government reservation between the two canals at Sault Ste. Marie, Mich. The average number of vessels passing through these canals in the season of navigation is 80 per day. The Weather Bureau office at that point is maintained chiefly in the interests of shipping, and its location should be on this Government reservation, where it can be of the greatest service to vessel masters.

It is of great importance that offices be located with a view of securing several advantageous conditions. Nearness to the press, the telegraph office, and, if at a lake port, proximity to the harbor, are important conditions in securing prompt and effective distribution of storm warnings and weather information. Beside providing for these, the proper exposure of meteorological instruments must not be overlooked. A flat roof, with no buildings of greater elevation in close proximity, is the best practicable city exposure. At marine ports a prominent tower visible from all parts of the harbor is necessary for the display of danger signals. Wind velocity increases and temperature decreases very rapidly with the first thousand feet of ascent from the surface of the earth; hence in securing an exposure above surrounding structures great care should be exercised not to locate meteorological instruments so high that their readings are not comparable with the results obtained from the stations of other cities; or so high as to show too wide a departure from readings taken within a few feet of the earth.

It is apparent that economy in expenditure should not induce the Government to locate its meteorological observatories in other than the most advantageous surroundings. Under no circumstances should the accuracy of the meteorological readings be subordinated to the desire to secure quarters rent free.

OPERATIONS OF THE YEAR ENDED JUNE 30, 1897.

The work of the Bureau during the last fiscal year was conducted on lines tested and approved by the experience of former years. There was no relaxation in the efforts to improve the methods of administration, and to make the Service of the greatest good to the largest number of people.

FORECASTS.

The usual forecasts of temperature, wind, and weather were issued twice daily, as were also special warnings of cold waves, frosts, severe storms, and hurricanes, as occasion demanded.

One storm, of a very destructive nature, passed across the eastern border of the United States since the date of last report. This storm, the coming of which was foretold on the evening of September 27, 1896, struck the coast of Florida in the vicinity of Cedar Keys on the morning of September 29, and passed rapidly northward to the region of the lower Lakes by the morning of the 30th.

The force of the wind was so great in many localities that human foresight could not avail in preventing the loss of life and property. The remarkable feature of the storm was the violence manifested throughout the Middle Atlantic States. Sixteen lives were lost in Virginia, District of Columbia, Maryland, and Pennsylvania; 98 in Florida, Georgia, and South Carolina. The loss of property was estimated at $7,000,000.

The passage of a West India hurricane through the center of the populous districts of the Middle States is not wholly new in the annals of meteorology, yet it is seldom that one of such violence takes a course so far inland. The lesson of it all, especially for architects and structural engineers, is that violent winds during the hurricane season must be included within the category of weather probabilities as far inland as the eighty-fifth meridian.

The hurricane signal was hoisted on six other occasions during the year for storms of less violence. There were no violent storms of which timely notice was not given.

The greatest field of usefulness of the Service lies, as has been observed in previous reports, in forecasting the severe storms that at times visit our shores and the marked cold waves that occasionally sweep from the Rocky Mountains eastward, rather than the ordinary changes in temperature, wind, and weather.

The official in charge of the New York office, in reporting upon the severe storm of December 15–16, 1896, says:

After the issue of the hurricane warning not a vessel was reported to have left port, except the steamship *St. Louis*, of the American Line, and it is believed she came to anchor off Sandy Hook bar. The storm was very severe in this section and was attended by all the most dangerous features of such storms; the wind blew a gale (54 miles per hour) on shore from the northeast, with fine sleet, heavy driving snow, and temperature below freezing; it is seldom that the mariner encounters such a combination of dangers. All vessels prepared for the storm and, in view of the timely warning, there was a chance for all to seek a harbor of safety. It is marvelous that not a vessel of any class was lost or even disabled in this section.

The official in charge at Boston reports concerning the hurricane warning of October 10, 1896:

This was the most marked success of the year. The information of the approach of one of the most destructive and protracted storms of recent years was very timely. Vessels of all classes were tied up, and shipping was practically suspended from October 10 to 16, inclusive. The saving of property in this instance was enormous, exceeding many times the cost of the maintenance of the entire Weather Bureau for years. The press of this city commended the Bureau in the highest terms for its good work and placed the value of shipping saved by the warning at millions of dollars, which was of little importance compared with the saving of human life.

The above comments, it may be urged, necessarily partake more or less of the nature of ex parte testimony; granting this, there is still an abundance of testimony from the standpoint of the people in general, as witness the following from the editorial columns of the Jacksonville (Fla.) Daily Times-Union of September 6, 1897:

THE SEASON OF HURRICANES.

Shipmasters at this, the season of West Indian hurricanes, should watch with more than usual care the forecasts of the Weather Bureau, and should take no chances when low or cyclonic areas are reported on the Gulf. For five successive years Florida has not escaped from having one or two hurricanes, with a wind velocity of from 45 to 80 miles an hour. In preceding years they pursued a course either to the eastward or the westward of the State, but in all instances doing great damage to shipping. In fact the men who go down to the sea in ships have found the latter part of August, the whole of September, and the first part of October to be the most perilous period of the year, but the increased efficiency of the Weather Bureau, due to more numerous stations, better appliances for observation, quick means of communication, and particularly careful study of this enemy of shipping, has lessened these perils in a great degree, so that a shipmaster of intelligence and caution should now, in coastwise voyages, know in a general way just about the weather he will encounter from port to port.

FLOOD WARNINGS.

The warnings issued by the Bureau, in connection with the disastrous floods that occurred in the Lower Mississippi Valley in the spring of 1897, were most timely and effective. The daily forecasts issued by the officials in charge of the river centers gave timely notice of the gradual rise of rivers to the danger line, and as soon as it was seen that floods were imminent, warnings to that effect were sent from the Central Office in Washington, D. C. Thus, on March 15, two weeks before the first serious break in the levees, it was announced in a special bulletin that—

The reports indicate a continued rise in the Lower Mississippi River during the next ten days or two weeks, and from the water now in sight, and rainfall likely to occur within the next few days, it is probable that the impending flood will prove very destructive in Arkansas and northern Louisiana. The most destructive overflow is likely to occur between the mouth of the Arkansas and the mouth of the Red River, and the observers of the Weather Bureau in that region have been directed to warn the public generally of approaching danger.

Again, on March 19, it was announced that—

The floods in the Lower Mississippi during the next ten days or two weeks will, in many places, equal or exceed in magnitude and destructiveness those of any previous years, and additional warning is given to residents of the threatened districts in Arkansas, Louisiana, and western Mississippi to remove from the region of danger.

As the flood approached its height these warnings were repeated and emphasized, notably so on March 28, April 3, 15, and 17. The local officials, under instructions from the Central Office, gave the widest possible distribution to these warnings, by mail and telegraph, throughout the threatened regions; a daily bulletin was also given to the press, thus keeping the public thoroughly informed of the present and prospective extent of the flood. Through the courtesy of Mr. John Hyde, statistician of the Department of Agriculture, I am able to submit rough

estimates of the values of live stock and farm products on hand in the flooded districts of the Mississippi River immediately preceding the flood, which are as follows:

January 1, 1897, horses, cattle, sheep, and other live stock	$10,037,540
March 1, 1897, corn, oats, cotton, and other movable farm products of last year's crop	4,664,900
Total	14,702,440

It would be impossible to estimate the value of live stock and movable property saved by these warnings, but certainly the saving amounted to many millions.

At a time when the Mississippi River at New Orleans was at the highest stage ever known, warnings were sent to that city that within five days the gauge reading would show a further increase in the height of the water of over 1 foot; that it was imperative that the height of the levees be still further increased.

The water reached the height predicted exactly on the date specified in the warnings, but the levees had been strengthened and raised to meet the impending danger.

At Cairo the river rose to danger line on February 26, and remained above it for fifty-nine days. Danger line was reached at Memphis on March 10; at Vicksburg on March 16; at New Orleans on March 18. The duration of the flood at these points was as follows: At Memphis, fifty-three days; at Vicksburg, eighty days; at New Orleans, eighty-eight days. The highest water ever known was experienced at Memphis and points below.

On April 5 the Secretary of Agriculture directed the Bureau to prepare a map, showing the area then under water, at the earliest possible moment. By a free use of the telegraph such a map was completed at 3.30 p. m. of the following day, and was of fair accuracy, as shown by subsequent detailed reports. A full report of this flood, together with a review of previous floods and a discussion of normal rainfall and drainage in the Mississippi Basin, is in preparation for early issue.

HYDROGRAPHY.

There have been maintained during the year 113 river and 42 rainfall stations, making daily observations and full monthly reports, together with such telegraphic reports as have seemed advisable for the purpose of river forecasting. In addition special reports are received at times of heavy rainfall and high water from 33 other stations. Voluntary river observations are also made by and reports received from a considerable number of unpaid observers.

The system of river and rainfall stations was revised at the end of the past year, such changes as were made going into effect on July 1, 1897. It was sought in this revision to secure a greater number of continuous records throughout the year. Such a course was necessary, as without continuous records the regimen of the streams could not be correctly determined. To do this without much increase of expense, some of the less important stations were closed.

Beginning with the issue of the Monthly Weather Review for November, 1896, there has been included in that publication a monthly report on the condition of the rivers of the United States, accompanied by a table of average and extreme gauge readings and range in the river stages at the various river stations. Since April 1, 1897, this has been supplemented by a hydrographic chart for selected stations on seven more important rivers. This feature of the Weather Review furnishes the only means in the country of obtaining current river data from all sections.

Part V of the series of the Daily River Stages, published by the Weather Bureau, was issued near the end of the year. This volume embraces daily stages at all stations for the years 1893, 1894, and 1895. A companion volume of daily rainfalls for the same years is in press.

The river service is composed of twenty-two sections, each with a central office receiving reports from a definite area and each making local forecasts for the river district under its supervision. In the case of impending great disaster, the Central Office at Washington dictates the important warnings for distribution by the section centers.

As yet the rules of flood forecasting are largely empirical. The official in charge of a river center is familiar with the main river and its tributaries; the area and topography of the catchment basin; the frequency and intensity of the rainfall, especially the intensity; the average time of passage of flood crest between one station and another, and the history of past floods.

The knowledge of low-water conditions, especially where bars and shoals exist, is perhaps of equally great importance as the knowledge of high water. The people living in regions contiguous to navigable streams are materially affected in their industries by the conditions of navigation, and the Weather Bureau in giving fairly accurate predictions of variations in low-water stages, as well as in giving warning of destructive floods, renders a signal benefit to river shipping. The official in charge of a river center makes timely dissemination of warnings when floods threaten.

During recent years a very thorough reorganization and systematization of the river and flood service has been effected. From the local observers who measure the rainfall or gauge the river heights to the trained meteorologists who are in charge of the river centers, from the latter officials to the forecast officers at the Central Office, and from these to the Chief of Bureau, the organization has been slowly strengthened, until it is believed the Bureau is able to efficiently serve the public during an emergency.

COLD-WAVE AND FROST WARNINGS.

The year was somewhat remarkable for the absence of severe cold waves and destructive frosts, but such as occurred were, as a rule, accurately forecast in good season. A system of reporting the advance of cold waves from station to station (reports being sent by the stations affected to those nearest and in the probable path of the cold wave) was put in operation during the year over the eastern Rocky Mountain slope from Nebraska to Texas, on the recommendation of Lieut. Col. H. H. C. Dunwoody, U. S. A., who is assigned to duty with the Weather Bureau as Supervising Forecast Official. In this, as in many other instances, Colonel Dunwoody has shown his fitness as an able assistant to the Chief of Bureau.

Gratifying success attended the warnings issued for the benefit of the fruit industry of Florida, the sugar interests of Louisiana and Texas, and the truck-growing districts of the eastern seaboard.

The rain warnings issued from the San Francisco office for the benefit of the raisin industry during the drying season, and on the accuracy of which that industry is greatly dependent for success, were, in every instance, justified. The official in charge of the San Francisco office states, in reference to the work of the Bureau in this particular, that during the last three years not a single rain occurred in the raisin-drying region without warning, and in only one instance was an unnecessary warning issued.

DISTRIBUTION OF FORECASTS AND WARNINGS.

The distribution of forecasts and warnings has been continued on practically the same lines as in former years, particular attention having been given to the development of the system of mail distribution by logotype cards in the large cities.

The number of forecasts and special warnings distributed in each State and Territory, not including those contained in the daily press reports and weather maps, is shown in the table below:

States and Territories.	By telegraph or telephone at Government expense.			Without expense to the United States, by—				Totals.
	Daily forecasts.	Cold wave and frost.	Emergency.	Mail.	Telegraph or telephone.	Railroad telegraph.	Railroad train service.	
Alabama	22		63	569	6	26	12	698
Arizona	3				8			11
Arkansas	40	4	58	289	26	7		424
California	108	7	3	1,219	93	349		1,779
Colorado	11	10	47	396		6	7	477
Connecticut	13	6	32	525	49	16	151	792
Delaware	5		6	33		21		65
District of Columbia				830	13			843
Florida	44	42	32	377	2	68		585
Georgia	51	40	82	571	2	99	41	886
Idaho	9			174	1			184
Illinois	67	25	383	2,108	5	308	459	3,355
Indiana	91	2	98	1,134	1	194	287	1,807
Indian Territory	7	1		103	1			112
Iowa	107	5	183	1,089	38	11		1,433
Kansas	40	3	142	434	20	37	8	684

States and Territories.	By telegraph or telephone at Government expense.			Without expense to the United States, by—				Totals.
	Daily forecasts.	Cold wave and frost.	Emergency.	Mail.	Telegraph or telephone.	Railroad telegraph.	Railroad train service.	
Kentucky	44	66	76	564	116	25	.....	891
Louisiana	25	22	6	412	19	1	.....	485
Maine	25	1	13	861	8	17	17	942
Maryland	24	2	17	321	33	100	.....	497
Massachusetts	22	16	32	1,818	22	.....	331	2,241
Michigan	81	19	167	2,648	25	309	457	3,706
Minnesota	48	11	87	1,063	54	7	.....	1,270
Mississippi	44	14	62	200	55	9	.....	384
Missouri	87	6	191	3,150	90	107	60	3,691
Montana	15	.....	16	22	4	.....	.....	57
Nebraska	65	4	147	775	2	11	.....	1,004
Nevada	3	.....	.....	49	3	.....	.....	55
New Hampshire	11	1	13	275	.....	9	31	340
New Jersey	31	24	70	785	17	160	.....	1,087
New Mexico	6	.....	.....	23	3	4	.....	36
New York	112	22	201	3,606	282	256	61	4,540
North Carolina	58	15	114	587	17	1	16	808
North Dakota	19	9	96	.....	45	.....	.....	169
Ohio	113	111	197	3,393	88	78	17	3,997
Oklahoma	4	1	8	45	10	.....	.....	68
Oregon	22	.....	.....	610	9	.....	104	745
Pennsylvania	64	13	105	1,557	712	705	7	3,163
Rhode Island	2	.....	5	21	.....	.....	27	55
South Carolina	53	4	65	497	62	42	10	733
South Dakota	42	31	76	355	12	.....	.....	516
Tennessee	34	4	93	833	64	31	2	1,061
Texas	51	31	184	499	140	64	.....	969
Utah	13	.....	.....	134	.....	.....	.....	147
Vermont	11	1	16	464	13	11	13	529
Virginia	39	11	91	750	105	75	95	1,166
Washington	25	2	.....	359	24	.....	29	439
West Virginia	17	9	44	249	8	32	.....	359
Wisconsin	55	13	134	1,132	37	.....	16	1,387
Wyoming	3	5	6	5	3	.....	.....	22
Total June 30, 1897	1,886	613	3,481	37,913	2,347	3,196	2,258	51,694
June 30, 1896	1,581	598	3,481	22,642	1,712	3,550	1,939	35,501
Increase	305	15	00	15,271	635	.....	319	16,193
Decrease	.....	.....	.....	.....	.....	354	.....	.....

DISTRIBUTION OF WEATHER STATISTICS BY MAPS.

Detailed information of the actual weather conditions existing over considerable areas is graphically shown by the daily weather maps, the circulation of which increased more than three-fourths of a million copies during the year, the total issue being 4,625,250 copies. Business houses, public offices, and schools are the principal recipients of the maps. The extension of the improved system of printing adopted last year has made this large increase possible. There are at present 81 map-printing stations, at 27 of which an improved printing process is in use. In addition to these, there are 21 stations where meteorological bulletins, containing weather data in a tabular form, are issued.

CLIMATIC WORK.

Aside from the issuance of daily forecasts and special warnings, the Weather Bureau is charged by law with the reporting of temperature and rainfall conditions in the cotton, corn, and wheat regions, the gauging and reporting of rivers, and other matters.

The cotton-region service covers the Southern States from the Carolinas, Georgia, and Florida westward to Texas. Observations of the temperature and rainfall are made at 129 stations throughout this region.

The corn and wheat region service extends from Michigan, Ohio, and Kentucky westward to and including the Dakotas, Nebraska, and Kansas, in which territory 132 daily reports are made at as many stations.

The climatic statistics collected from cotton, corn, and wheat region stations are conveyed to the general public, for whose information they are obtained, chiefly through the medium of the daily press and by telegraphic reports that are bulletined in the principal grain and produce exchanges of the country.

PUBLICATIONS.

The text, charts, and statistical matter required in the presentment of the various phases of climate and weather are prepared and printed at the Central Office. The work involved in this connection is varied, and, in some cases, of exceptional character. No material change has been made in the organization of the various divisions having charge of the collection and discussion of climatological data, or in the character of the publications issued, a list of which appears below:

Title.	When issued.	Edition.
1. Daily Weather Map	Daily	850
2. Weekly Climate and Crop Bulletin	Tuesdays, April to October	5,000
3. Weekly Snow and Ice Chart	Mondays, during cold season	800
4. Monthly Climate and Crop Bulletin	October to March	5,000
5. Monthly Weather Review	15th of each month	3,800

MONTHLY WEATHER REVIEW.

The scope of the Monthly Weather Review has been enlarged and its usefulness increased through the untiring efforts of its editor, Prof. Cleveland Abbe. It should be noted that Professor Abbe was one of the most active of those who, thirty years ago, advocated a Government weather service. In 1869, with the aid of the Cincinnati Chamber of Commerce and the Western Union Telegraph Company, he collected observations by telegraph and issued daily forecasts. In 1870, when Congress authorized the War Department to establish a tentative weather service, he was engaged to assist Gen. A. J. Myer in laying the foundation of that which has grown to be the present extensive weather service of the Agricultural Department. Possessing a profound knowledge of the mathematics, the physics, and the literature of meteorology, he has been a modest, loyal, and valuable assistant to the several executive heads of the service. He was the first and is still the senior professor of meteorology. I regret to report that to-day the Government, in whose service he has spent twenty-seven years of his earnest life, now pays him but two-thirds of the salary he received on entering its service. At an early day I hope to see his salary restored to, say, $4,000 per annum. He has edited the Monthly Weather Review in such manner as to command the admiration of both American and European scientists. Quotations from it are to be found daily in the popular scientific journals of this country and of the world.

Although the majority of the articles in the Review are of an elementary and popular character, such as are suited to the needs of teachers and students of all grades except in the higher colleges, yet a large number of its readers, on the other hand, would appreciate strictly technical articles, and it is proposed to hereafter consider the needs of these readers.

It is now some years since charts of normal pressure at sea level and normal surface isotherms were published in the Review. The subsequent accumulation of data has been reduced in the Records Division and it is proposed to publish greatly improved charts of normals and extremes in the Review during the coming year.

The prediction of the weather is, to a considerable extent, conditioned upon the extent of the area from which telegraphic reports are received. This may also be found to be true when we consider the possibility of making long-range, seasonal predictions. A forecast of the general character of the weather for the whole of any month must take into consideration the meteorological conditions over a very large part of the globe. The atmosphere must be studied as a unit, and to this effect, on the one hand, the principles of mechanics that apply to it must be set forth in terse formulæ, while, on the other hand, the meteorological statistics must be presented for the whole globe in a similar manner, such that the complex mechanical interactions may, as far as possible, be worked out graphically. It is proposed to publish in the Monthly Weather Review, during the

next two years, a number of contributions to this general study of the whole atmosphere. Several purely mathematical papers are available, beginning with one by Mr. Joseph Cottier. This will be followed in due season by charts of the sea-level and upper-level isobars, isotherms, and winds, and by the results of the study of cloud heights and motions, upon which latter work Prof. F. H. Bigelow is now engaged.

The prompt publication of these results will greatly stimulate progress in knowledge.

The new work in contemplation will, probably, add four charts on the average to each Monthly Weather Review and will increase the letter press by two pages of text and two of tabular matter.

ORIGINAL INVESTIGATIONS AND REPORTS.

CLIMATOLOGY.

The general character of the investigations conducted during the fiscal year under the subhead climatology embodied researches along the following lines:

(1) The study of such statistics as were accessible and available in connection with the climatic and seasonal distribution of the meteorological conditions prevalent at the inception, increase, and abatement of sickness and mortality, the purpose of such study being to determine whether there is such a persistent association of certain climatic or meteorological conditions with any of the phases of sickness and mortality, as to afford reasonable ground for the belief that the relation is in any manner one of cause and effect.

(2) Such investigation as it might appear practicable to make relative to the demands made by meteorological conditions upon the heat-producing powers of the animal body.

(3) Such investigations as it might appear practicable to make relative to the influence of meteorological conditions upon the vital activity of pathogenic bacteria.

Some progress has been made along all three of the above indicated lines of research.

Along the first line, statistical studies have been conducted with reference to the influence of climate, season, and weather upon sunstroke and pneumonia. Along the second line, considerable attention has been given to devising some special apparatus which should approximate, as nearly as practicable, the thermic conditions of the human body, and with which it might be feasible to obtain an instrumental approximation of the demands made by the general weather conditions upon the heat-producing powers of the human body; also, some experiments have been made to obtain a more or less concrete idea of the relation of the general meteorological conditions to the protective efficiency of clothing, as judged by the temperature between the different layers of clothing. While along the third line of study much thought has been given to planning some feasible methods of experimentation. Considerable more time will be required before it will be possible to give more definite details regarding the greater part of the matters that have so far been investigated.

The subjects of sunstroke and the influence of the general weather conditions upon the efficiency of clothing have formed topics of preliminary papers contributed to the Monthly Weather Review (November and December, 1896, and May, 1897) by Dr. W. F. R. Phillips, in charge of the section on climatology. It is hoped that more complete reports can be made upon these two subjects.

The study made by Dr. Phillips of the meteorological conditions associated with the occurrence of sunstroke, particularly those which obtained during August, 1896, has apparently given some information that may be of importance concerning this class of morbid phenomena.

From trustworthy information received in response to a circular sent out August 20, 1896, it appeared that 2,038 deaths occurred during that month which were directly attributed to sunstroke, as the term is ordinarily used and accepted. Although this number of deaths was unusually large, there was reason to suppose that the actual number of fatalities from the intense heat was much larger; and accepting the usually stated ratio of cases and deaths, the number of persons that must have suffered in greater or less degree was something enormous. In 841 cases of sunstroke, the clinical histories of which were obtained with more or less exactness, the fatality was 16.6 per cent, and were this rate assumed as the index of fatality that obtained in

general during August, 1896, the 2,038 deaths would have represented the occurrence of 12,277 cases of sunstroke of varying severity.

From a comparative study of the sunstrokes and the weather prevalent during their occurrence, the following conclusions regarding the relation and influence of the meteorological conditions were reached:

(*a*) That the number of sunstrokes followed more closely the excess of the temperature above the normal than it did that of any other meteorological condition.

(*b*) That the number of sunstrokes did not appear to sustain any specific relation to the relative humidity.

(*c*) That although the absolute humidity was greatest during the maximum of sunstrokes, yet it did not appear that its variation influenced the number of cases.

(*d*) That the other recorded meteorological conditions, i. e., the atmospheric pressure, wind, rain, and state of weather, did not show any features that could be regarded as of etiological significance.

Inasmuch as there appeared to be a closer association between the course of the sunstroke and the course of the atmospheric temperature than between any other meteorological element or condition, an attempt was made to ascertain, if possible, what degree of temperature was necessary or most likely to excite sunstroke. An examination of the different statistics appeared to show that there was empirical evidence for assuming that each locality had for its acclimated inhabitants a particular sunstroke temperature or range of temperature, and for adopting as a provisional index of the sunstroke temperature the normal daily maximum temperature of each climate. This provisional standard applied to the cases of sunstroke as reported in the cities of New York, Boston, Philadelphia, and Washington, from which places the statistics were most numerous, gave the following results:

In New York City 96 per cent of the cases occurred with daily mean atmospheric temperatures equal to or slightly above the normal maximum temperature for August (the period in question). In Boston and Philadelphia 91 per cent, and in Washington 77 per cent, of the cases occurred under like conditions of temperature.

In the light of these results the following working hypothesis was proposed: Sunstroke becomes imminent during the summer months when the mean temperature of any one day or of several successive days becomes equal or nearly equal to the normal maximum temperature for the period.

Also, an attempt was made to determine, by using such statistics as were accessible for other years, how far the hypothesis above stated could be depended upon as a criterion of impending danger from sunstroke, with the result that it appeared to be a fairly good index for the eastern and central portions of the United States. No statistics were accessible for the States of the Western plateaus. But, with respect to the above hypothesis, this caution is to be kept in mind: That although the hypothesis embodies certain plausible climatological conditions, it was evolved simply as an empiricism based upon quite a large number of facts, and that it does not rest upon a satisfactory knowledge of all the factors involved, and that even before it can be said to represent accurately an empirical relation it must be corroborated by a larger mass of statistics than are at present accessible.

THE RAINFALL OF THE UNITED STATES.

The results of a study of the rainfall registers of the United States by Mr. Alfred J. Henry, with especial reference to the period 1871–1896, appear as Part VII of this report.

SOME CLIMATIC FEATURES OF THE ARID REGIONS.

At the request of the secretary of the National Irrigation Congress, the fifth annual session of which was held at Phœnix, Ariz., December 15–17, 1896, a report was prepared upon some of the climatic features of the arid and subarid regions of the great Southwest.

Opportunity was taken to present the salient features of the temperature of evaporation, popularly known as the sensible temperature, of this vast region. As has been elsewhere stated, the sensation of heat, which is usually referred to atmospheric conditions, depends not only on

the temperature of the air, but also upon its dryness, the velocity of the wind, and other circumstances. It was shown in the report that the high temperatures of the Southwest were mitigated in no small degree by the prevailing dryness of the atmosphere and the clearness of the sky, the latter tending to promote terrestrial radiation—an effective means of lowering the temperature of the nighttime.

The southwestern part of the United States possesses a climate intermediate between that of the tropics and the temperate zones. The sequence of weather is more uniform than in higher latitudes; the changes in temperature from day to day are less; rainfall is deficient; the sky is generally clear; insolation and radiation are both strong; the range of temperature from day to night is large, from 25° to 35°; the winds are generally light and evaporation is high.

The concluding part of the report deals with the strength of the surface winds over the arid region and the time such winds are available for driving windmills. It is shown that on the plains east of the Rocky Mountains effective winds (6 to 20 miles per hour) prevail about 50 per cent of the time; that on the eastern foothills of the Rocky Mountains and in sheltered valleys effective winds could not be depended upon more than 30 per cent of the time when irrigation is most needed.

In the Great Basin, Arizona, and New Mexico, effective winds prevail from 30 to 50 per cent of the time, depending somewhat upon the nature of the land surface and the immediate environment of the wind motor.

STORMS, STORM TRACKS, AND WEATHER FORECASTING.

There was prepared and issued during the year, Bulletin No. 20, Storms, Storm Tracks, and Weather Forecasting, by Prof. Frank H. Bigelow. The purpose of the bulletin was to create a more intelligent interest in the daily weather map, and to spread among the people at large some of the guiding principles of weather forecasting. It is very generally admitted that the forecasts and warnings of the Bureau find their fullest application to the varied interests of agriculture, commerce, and navigation among persons who have given the matter some study and who possess a rudimentary idea, at least, of the general principles of forecasting. The bulletin contains results that have been acquired by years of practical experience. Professor Bigelow treats the subject by months, beginning with August, when the atmospheric circulation is rather feeble and the eastward drift slow, passing gradually through the months of transition from hot to cold, finally reaching the winter months, whose characteristics are a boisterous circulation of the atmosphere, rapid eastward movement, and great alternations of temperature, pressure, etc.

The origin of storms in latitude and longitude, their progressive motion and general characteristics are tersely set forth in this work.

AERIAL WORK.

The results obtained with kites have been discussed in detail in a series of articles published in the Monthly Weather Review, Vol. XXIV.

In the work of the preceding year special attention was given to producing a kite that would fly at the highest possible angle of elevation consistent with a large angle of incidence—that is to say, if the bridle of any kite is so set that its angle of incidence is, say, 20°, then, if the action of this kite were absolutely perfect, upon a short string, it should fly at an angular elevation of 70°. Owing to the weight of the kite, the pressure of the wind upon the framework, and other causes, no actual kite could fly at so great an angle under such circumstances, but it was found possible, by means of certain improvements, to secure an approximation to the perfect kite in this respect, represented by a numerical efficiency of from 90 to 95 per cent. This efficiency has been calculated upon a mechanical basis similar to that employed in other branches of applied mechanics.

In the work of the current year, while still retaining the improvements brought out in the preceding year, attention was directed to securing an increased pulling power for a given kite, other things remaining the same. What may be regarded as a final solution of this element of the problem has not, as yet, been reached, but important improvements and discoveries have been made. Full details of these will be reserved for more extended presentation in a subsequent

report. It will suffice for the present to say that an elevation of 7,500 feet has been reached by a single kite carrying over 2 pounds in instruments, and the entire supporting action was secured from 41 square feet of sustaining surface, yielding from 50 to 80 pounds pull on the line.

Complete safety and immunity from breaking the main line is one of the most important factors in kiteflying. This is the more difficult to secure in proportion as the elevations aimed at are greater, for the reason that in such cases the strain upon the line must be increased until the margin of safety is comparatively small.

Two important improvements have been effected, both contributing to increase the safety of the operation of flying a kite.

The first of these consists of an improved method of bridling a kite, so that by securing a peculiar relation of the forces in action the pull upon the line tends to remain more nearly constant when great variations take place in the force of the wind. Only recently has it been possible to fully develop the mechanics of the action of the forces in this particular case, and it is now believed that by the aid of this knowledge we shall in the near future be able to secure a still more perfect automatic regulation of the pull than has thus far been realized in the kites now in use.

The second improvement, tending to increase the safety in kiteflying, consists in what has been called the "safety line." This is a small piece of steel wire of the finest possible quality, inserted immediately between the end of the main line and the kite. If, for example, it is desired to protect the main line so that it shall not be strained to more than 90 pounds by the kite, then a "safety line" of such a size that it will be broken by a strain of 90 pounds is selected. This line is inserted in such a way that it carries all the pull of the kite, and if, by any circumstances, the strain exceeds 90 pounds the "safety line" will break. The kite, however, does not escape, but is immediately held in restraint by means of a supplementary bridle that was previously a little slack, and which is fixed to the kite at such a point that when the kite is flying from the supplementary bridle the pull, other things being the same, will be much smaller than obtains with the normal bridle. In actual work it has been found that the pull falls from about 90 pounds to about 50 pounds when the safety line breaks. The kite, therefore, continues to fly in a very satisfactory manner, and it is sometimes difficult to say certainly whether or not a safety line has broken until the kite is landed.

The general success attained in the experiments made prior to July 1, 1897, has justified a considerable extension of the work during the ensuing year, the preparations for which are now well under way.

OBJECT OF KITEFLYING.

The object of perfecting an apparatus for more successfully flying kites is to secure meteorological observations at great altitudes above the surface of the earth. From a knowledge personally gained by many years' service as an official forecaster, I do not hesitate to express the opinion that we have reached the highest degree of accuracy in the making of forecasts and storm warnings possible to be obtained with surface readings only. It is patent that we are extremely ignorant of the mechanics of storms; of the operations of those vast yet subtle forces in free air which give inception to atmospheric disturbances, and which supply the energies necessary to continue the same. It has, therefore, been the policy of the Bureau, during the past two years, to systematically attack the problem of upper-air exploration, with the hope of ultimately being able to construct a daily synoptic weather chart from simultaneous readings taken in free air at an altitude of not less than one mile above the earth.

It is believed that the method adopted by European investigators of sending up observers in balloons, or of liberating free balloons with automatic instruments attached, will be of very limited use in acquiring a more perfect knowledge of the forces that work about a storm center. The plan previously proposed by the Bureau of making daily balloon ascensions from a given station would give results of slight benefit to the weather forecaster. The plan on which I have been working the past two years is to secure a simultaneous view, by means of automatic instruments displayed at the same moment of time from many stations and elevated to a height of at least one mile. It is believed that simultaneous observations at a high level, from many given stations (if

the kites can be perfected to such a degree as to render it possible to secure daily observations), will ultimately result in a better understanding of the mechanics of storms.

If the kite stations can be established and successfully operated day by day, we shall then construct a chart from the high-level readings obtained at many stations, and study the same in connection with the surface chart made at the same moment. Being thus able to map out the vertical gradients of temperature and pressure, as well as the horizontal distribution of these forces, on two levels, it is hoped to better understand the development of storms and cold waves, and eventually to improve the forecast of their coming, extent, and rate of movement. To be sure, the success of this investigation depends on perfecting the appliances for carrying the instruments to great elevations. Effort will be made to successfully establish about twenty kite stations during the present fiscal year. If these can be successfully operated, and if results are obtained which are useful to the forecaster, it is desired to continue them as a part of the Weather Bureau system; otherwise, they can be discontinued as soon as negative results are shown.

CLOUD WORK.

The international simultaneous cloud observations referred to in my last report were concluded on June 30, 1897. About 7,000 observations for cloud heights, and probably 2,000 pairs of observations for direction and velocity, were obtained at the primary station in this city.

The plan for a system of simultaneous observations over the whole world on the height, direction of motion, and velocity of movement of clouds was set in operation May 1, 1896, in accordance with the suggestions of the International Committee having charge of this work. The United States Weather Bureau has undertaken to contribute its share to this study of the circulation of the upper strata of the atmosphere over the Northern Hemisphere, and accordingly established a primary station at Washington, D. C., and fourteen secondary stations in various parts of the United States, to carry out these observations. The cooperation of the authorities of the War Department in maintaining a base-line station on the War, State, and Navy Building, for the theodolite work required in these operations, has been of invaluable assistance, because that site was the most favorable for the observations in connection with the telephone service.

At the nephoscope stations a very large number of readings for the relative motion of clouds have been made. Much of this latter work was done by volunteers, in the interests of this investigation, who realized the necessity of exploring our storm phenomena more thoroughly than heretofore. The Bureau has also collected on its charts, during the past twenty-five years, a series of cloud observations which are now to be drawn upon to provide fundamental data for this discussion. The "cloud year" ended for us on June 30, 1897, but some of the European observations will be continued longer, as there was delay in beginning the work at the time originally fixed.

The three classes of data mentioned, from the theodolites, the nephoscopes, and the Weather Bureau charts, now afford an opportunity, for the first time, to study our North American circulation carefully. The observations are being reduced as rapidly as possible, and the necessary theoretical studies are intrusted to Prof. Frank H. Bigelow, who is endeavoring to reach definite conclusions, based upon sound data, as to the true theory of hemispherical circulation and other matters related to the origin and propagation of our storms. Much labor is required to handle the material, but it is expected to have the report ready during the year 1898.

Blank page retained for pagination

PART II.

LIST OF OBSERVING STATIONS AND CHANGES THEREIN DURING 1896.

HOURLY AVERAGES OF ATMOSPHERIC PRESSURE, TEMPERATURE, AND WIND, FROM THE RECORDS OF AUTOMATIC INSTRUMENTS AT TWENTY-EIGHT STATIONS.

Blank page retained for pagination

LIST OF OBSERVING STATIONS.

The following table contains the geographic coordinates of the several stations whose summaries are published in Part III, the height of the barometer cistern above mean sea level, and of other instruments above ground, the difference between local and standard time, and the date on which observations began. The standard time used by the Weather Bureau in all of its synchronous work is that of the seventy-fifth meridian (Eastern time), which standard is always understood unless otherwise expressed.

The elevations given are for January 1, 1896, except at stations established subsequent to that date. (See Table II.) Elevations preceded by the letter "B" have been determined by the barometer; all others are the results of precise levels. Changes made during 1896 are given in the second or third set of figures, as the case may be.

The significance of the bold-face letter or letters following the name of station is as follows:

P=continuous records of pressure (on December 31, 1896);

T=continuous records of temperature (on December 31, 1896);

W=continuous records of wind (direction and velocity) (on December 31, 1896);

V=continuous records of wind (velocity only) (on December 31, 1896);

R=continuous records of rainfall (on December 31, 1896);

S=continuous records of sunshine (on December 31, 1896).

Stations having no letter make an observation of temperature, precipitation, direction of the wind, and the state of the weather daily at 8 p. m.

Summary of stations in operation during the year.

Taking two observations daily (all elements)	126
Taking one observation daily (all elements)	5
Taking one observation daily (temperature and rainfall only)	16
Taking one observation daily (temperature and rainfall only, *cotton region*)	129
Taking one observation daily (temperature and rainfall only, *corn and wheat region*)	131
Taking one observation daily (river and rainfall only)	142
Taking one observation daily (rainfall only)	51
Total	600

TABLE I.—LATITUDE, LONGITUDE, ELEVATION, ETC., OF WEATHER BUREAU STATIONS.

Stations.	Latitude.	Longitude.	Local meridian time faster or slower than 75th meridian.	Elevation December 31, 1896.				Observations began.	Date of changes in elevation.
				Barometer above sea.	Thermometer above ground.	Rain gauge above ground.	Anemometer above ground.		
	° ′	° ′	h. m.	Feet.	Feet.	Feet.	Feet.		
Abilene, **P T W**	32 23	99 40	1 39 S.	1,749	47	36	54	Sept. 14, 1885	
Albany, **P T W S**	42 39	73 45	05 F.	85 97	84	99	113	Dec. 22, 1873	Dec. 12, 1896.
Alpena, **P T W**	45 05	83 30	34 S.	609	61	54	65	Sept. 10, 1872	
Amarillo, **T V**	35 13	101 50	1 47 S.	3,691	53	46	61	Jan. 1, 1892	
Astoria	46 57	124 00	3 15 S.	41	39	56	60	Nov. 1, 1883	
Atlanta, **P T W R S**	33 45	84 23	37 S.	1,131	92	85	126	Sept. 25, 1878	
Atlantic City, **P T V S**	39 22	74 25	03 F.	52	68	57	76	Reopened Nov. 1, 1896	
Augusta, **P T W**	33 28	81 54	27 S.	180	89	54	103	Nov. 2, 1870	

TABLE I.—LATITUDE, LONGITUDE, ELEVATION, ETC., OF WEATHER BUREAU STATIONS—Continued.

Stations.	Latitude.	Longitude.	Local meridian time faster or slower than 75th meridian.	Elevation December 31, 1896. Barometer above sea.	Thermometer above ground.	Rain gauge above ground.	Anemometer above ground.	Observations began.	Date of changes in elevation.
	° ′	° ′	h. m.	Feet.	Feet.	Feet.	Feet.		
Baker City, T V	44 50	117 50	2 51 S.	3,430	49	38	53	July 9, 1889	
				3,470	.....	.....	.....	.....	Redetermined July 18, 1896.
Baltimore, P T W R S	39 18	76 37	06 S.	142	120	116	136	Jan. 1, 1871	
				123	68	73	82	.....	Aug. 1, 1896.
Bismarck, P T W R S	46 47	100 38	1 42 S.	1,681	16	3	29	Sept. 15, 1874	
				1,674	.....	2	.....	.....	Redetermined Sept. 15, 1896.
Block Island, V	41 10	71 36	14 F.	27	39	3	48	Sept. 1, 1880	
Boston, P T W R S	42 21	71 04	16 F.	125	115	154	181	Nov. 1, 1870	
Buffalo, P T W R S	42 53	78 53	15 S.	690	103	93	123	.....do	
				768	178	168	206	.....	Mar. 1, 1896.
Binghamton, P T W S	42 08	75 55	04 S.	875	79	71	90	Oct. 1, 1896	
Cairo, P T V	37 00	89 10	56 S.	359	87	78	93	June 1, 1871	
Canby, Fort, P V	46 16	124 04	3 16 S.	179	10	2	34	Sept. 1, 1883	
Cape Henry, V	36 56	76 00	01 S.	20	5	6	34	Dec. 15, 1873	
Carson City	39 10	119 46	2 59 S.	4,720	47	42	.....	Dec. 1, 1887	
					18	.....	.....	.....	June 15, 1896.
Charleston, P T V	32 47	79 56	20 S.	52	60	55	72	Jan. 5, 1871	
Charlotte, T V	35 13	80 51	23 S.	773	68	60	76	Oct. 6, 1878	
Chattanooga, P T W S	35 04	85 15	41 S.	762	106	97	112	Sept. 12, 1875	
Cheyenne, T W S	41 08	104 48	1 59 S.	6,105	58	50	60	Nov. 1, 1870	
Chicago, P T W R S	41 53	87 37	50 S.	824	241	238	274	.....do	
Cincinnati, P T W R S	39 06	84 30	38 S.	628	153	145	157	.....do	
Cleveland, P T W R S	41 30	81 42	27 S.	740	122	109	130	.....do	
				762	190	161	201	.....	Oct. 1, 1896.
Columbia, Mo., V	38 58	92 14	1 09 S.	783	4	2	84	Aug. 21, 1889	
Columbia, S. C	34 00	81 03	24 S.	.....	5	3	.....	June 5, 1887	
Columbus, P T W S	39 58	83 00	32 S.	824	87	81	93	July 1, 1878	
							100	.....	Oct. 7, 1896.
Concordia, V	39 35	97 41	1 31 S.	1,410	42	34	47	May 1, 1885	
				a 1,398	.....	.....	.....	.....	Sept. 15, 1896.
Corpus Christi, V	27 49	97 25	1 30 S.	20	42	34	50	Feb. 1, 1887	
Davenport, P T W	41 30	90 38	1 02 S.	613	100	93	108	May 24, 1871	
				599	71	64	79	.....	Nov. 3, 1896.
Denver, P T W R S	39 45	105 00	2 00 S.	5,309	83	74	151	Nov. 19, 1871	
				b 5,290	79	.....	.....	.....	June 13, 1896.
Des Moines, P T W R S	41 35	93 37	114 S.	869	84	75	88	July 29, 1877	
Detroit, P T W R S	42 20	83 03	32 S.	724	158	144	161	Nov. 1, 1870	
				730	160	147	166	.....	June 3, 1896.
Dodge City, P T W R S	37 45	100 00	1 40 S.	2,504	44	37	52	Sept. 15, 1874	
Dubuque, P T W S	42 30	90 44	1 03 S.	698	49	40	56	July 2, 1873	
Duluth, P T W R	46 47	92 06	1 08 S.	702	95	90	106	Nov. 1, 1870	
Eastport, P T W R S	44 54	66 59	32 F.	76	69	63	74	Apr. 1, 1873	
El Paso, P T W	31 47	106 30	2 06 S.	3,767	10	2	110	Apr. 1, 1878	
Erie, T V	42 07	80 05	20 S.	714	92	82	102	May 25, 1873	
Eureka, P T V S	40 48	124 11	3 17 S.	64	60	52	69	Jan. 1, 1887	
Fort Smith, P T V	35 22	94 24	1 17 S.	481	63	56	72	Apr. 13, 1879	
Fresno, P T W S	36 43	119 49	2 59 S.	332	67	54	70	Aug. 18, 1887	
Galveston, P T W R S	29 18	94 50	1 19 S.	42	85	80	96	Apr. 19, 1871	
Grand Haven, P T W	43 05	86 13	45 S.	628	55	48	64	May 24, 1871	
Green Bay, V	44 31	88 00	52 S.	617	49	41	57	Sept. 1, 1886	
Hannibal, P T V	39 41	91 20	1 05 S.	534	75	68	107	Apr. 16, 1892	
Harrisburg, P T V	40 16	76 52	07 S.	377	94	87	102	July 1, 1888	
Hatteras, V R	35 15	75 40	02 S.	11	17	2	36	Dec. 1, 1880	
Havre, P T W	48 34	109 40	2 19 S.	2,477	15	2	33	May 16, 1892	
Helena, P T W S	46 34	112 04	2 28 S.	4,108	88	80	93	Apr. 1, 1880	
Huron, P T W	44 21	98 14	1 32 S.	1,310	63	56	72	July 1, 1881	
Idaho Falls, P T V	43 29	112 04	2 28 S.	4,742	10	1	45	June 1, 1892	
							56	.....	Dec. 23, 1896.
Independence, P T W	36 48	118 12	2 53 S.	3,884	10	4	58	Dec. 1, 1894	
Indianapolis, P T W R S	39 46	86 10	44 S.	766	75	72	87	Feb. 10, 1871	
				823	154	146	164	.....	Sept. 1, 1896.
Jacksonville, P T W R	30 20	81 39	26 S.	43	69	59	84	Sept. 11, 1871	
Jupiter, V R	26 57	80 07	20 S.	28	13	1	30	Jan. 1, 1888	
Kansas City, P T W R S	39 05	94 37	1 18 S.	963	78	81	95	Apr. 21, 1873	
Keokuk, V	40 22	91 26	1 06 S.	613	64	56	78	July 16, 1871	
Key West, P T W R	24 34	81 49	27 S.	22	42	44	50	Nov. 1, 1870	

a Redetermined.

b Redetermined April 4, 1896.

TABLE I.—LATITUDE, LONGITUDE, ELEVATION, ETC., OF WEATHER BUREAU STATIONS—Continued.

Stations.	Latitude.		Longitude.		Local meridian time faster or slower than 75th meridian.		Elevation December 31, 1896. Barometer above sea.	Thermometer above ground.	Rain gauge above ground.	Anemometer above ground.	Observations began.	Date of changes in elevation.
	°	′	°	′	h.	m.	Feet.	Feet.	Feet.	Feet.		
Kittyhawk, V	36	00	75	42		03 S.	9	12	2	30	Jan. 15, 1875	
Knoxville, P T W	35	56	83	58		36 S.	980	80	71	88	Jan. 20, 1871	
Lacrosse, V	43	49	91	15	1	05 S.	720	70	61	78	Oct. 15, 1872	
Lander, T V	42	50	108	45	2	15 S.	5,377 5,372	12 28	16 17	34 36	Aug. 1, 1891	Jan. 1, 1896.
Lansing	42	44	84	32		38 S	881	72	67	79	Feb. 1, 1895	
Lincoln, P T S	40	48	96	40		33 S.	1,199	74	4	84	Aug. 8, 1894	
Little Rock, P T W R S	34	45	92	06	1	08 S.	302	71	62	79	Apr. 21, 1873	
Los Angeles, P T V S	34	03	118	15	2	53 S.	330	74	66	76 82	July 1, 1877	Sept. 5, 1896.
Louisville, P T W R S	38	15	85	45		43 S.	525	114	106	136	Sept. 11, 1871	
Lynchburg, P T W	37	25	79	09		16 S.	685	83	76	88	May 24, 1871	
Marquette, P T W R	46	34	87	24		49 S.	734	67	58	95	May 11, 1871	
Memphis, P T W R	35	09	90	03	1	00 S.	399	40	134	154	Feb. 28, 1871	
Meridian, V	32	21	88	40		55 S.	358	168	58	72	Sept. 1, 1889	Changed to "cotton region" Sept. 1, 1896.
Miles City, V	46	25	105	49	2	03 S.	2,372	41	34	49	Oct. 1, 1891	
Milwaukee, P T W R	43	02	87	54		51 S.	673	106	100	149	Nov. 1, 1870	
Minneapolis, P T W S	44	59	93	18	1	13 S.	.....	99	95	192 208	Nov. 6, 1890	Apr., 1896.
Mobile, T V	30	41	88	02		52 S.	57	88	78	96	Nov. 7, 1870	
Montgomery, P T V	32	23	86	18		45 S.	221	100	70	107	Nov. 9, 1870	
Moorhead, P T W	46	52	96	44	1	27 S.	935	54	44	60	Jan. 31, 1881	
Nantucket, P T W R	41	17	70	06		20 F.	14	43	38	54	Oct. 18, 1886	
Narragansett Pier	41	19	71	17		15 F.	22	10	1	38	Apr. 1, 1882	
Nashville, P T W R S	36	10	86	47		47 S.	545	128	116	134	Nov. 1, 1870	
Neah Bay *	48	23	124	36	3	18 S.	.....	8	0	.....	Dec. 1, 1883	
New Haven, T W	41	18	72	56		08 F.	107	118	110	140	Dec. 10, 1872	
New Orleans, P T W R S	29	58	90	04	1	00 S.	54	112	111	120	Nov. 1, 1870	
New York, P T W R S	40	43	74	00		04 F.	314	298	247 258	326	.....do	Nov. 24, 1896.
Norfolk, P T W R	36	51	76	17		05 S.	57	88	80	93	Jan. 1, 1871	
Northfield, P T W S	44	10	72	41		09 F.	872	15	2	59	Mar. 1, 1887	
North Platte, T V	41	08	100	45	1	43 S.	2,826	43	35	52	Sept. 18, 1874	
Oklahoma City, T V	35	26	97	33	1	30 S.	1,239 1,218	54	45	53	Nov. 1, 1890	Redetermined Dec. 1, 1896.
Omaha, P T W R S	41	16	95	56	1	24 S.	1,123 1,103	92	86	97	Nov. 1, 1870	Redetermined Oct. 1, 1896.
Oswego, P T V	43	29	76	35		06 S.	335	76	68	87	Nov. 1, 1870	
Palestine, V	31	45	95	40	1	22 S.	510	54	54	61	Dec. 3, 1881	
Parkersburg, P T V	39	16	81	36		26 S.	638	77	69	84	July 1, 1888	
Pensacola, T V	30	25	87	13		49 S.	56	78	79	90	Oct. 27, 1879	
Philadelphia, P T W R S	39	57	75	09	0		117	168	166	184	Jan. 1, 1871	
Phœnix, T V S	33	28	112	00	2	28 S.	1,106 1,076	47	39	57	Aug. 6, 1895	Redetermined Oct. 1, 1896.
Pierre, V	44	24	100	17	1	41 S.	1,470 1,460	50	47	61	July 1, 1891	Redetermined Nov. 1, 1896.
Pittsburg, P T W R S	40	32	80	02		20 S.	842	116	101	123	Nov. 1, 1870	
Point Reyes Light, V	38	11	122	51	3	11 S.	.....	12	1	16	Mar. 1, 1889	
Port Angeles, V	48	07	123	06	3	14 S.	29	47	35	62	Nov. 1, 1883	
Port Huron, V	43	00	82	26		30 S.	639	70	63	108	July 25, 1874	
Portland, Me., P T W R S	43	39	70	15		19 F.	103	81	75	89	Jan. 15, 1871	
Portland, Oreg., P T W R S	45	32	122	43	3	11 S.	157 a 153	203	196 147	213	Nov. 1, 1870	Feb. 1, 1896.
Pueblo, V	38	18	104	36	1	58 S.	4,734 4,713	74	65	81	July 1, 1888	Redetermined July 1, 1896.
Pysht	48	12	124	04	.....		.....	5	4	.....	Dec. 1, 1883	
Raleigh, P T W S	35	45	78	37		14 S.	388 375	70 93	2 85	80 101	Apr. 1, 1884	Oct. 1, 1896.
Rapid City, T V	44	04	103	12	1	53 S.	3,260	53	46	61	Jan. 24, 1881	

* Meteorological work discontinued August 26, 1895.

a Redetermined September 19, 1896.

TABLE I.—LATITUDE, LONGITUDE, ELEVATION, ETC., OF WEATHER BUREAU STATIONS—Continued.

Stations.	Latitude.	Longitude.	Local meridian time faster or slower than 75th meridian.	Elevation December 31, 1896. Barometer above sea	Thermometer above ground.	Rain gauge above ground.	Anemometer above ground.	Observations began.	Date of changes in elevation.
	° ′	° ′	h. m.	Feet.	Feet.	Feet.	Feet.		
Redbluff, T V	40 10	122 15	3 09 S.	334	54	44	58	July 1, 1877	
Rochester, P T W R S	43 08	77 42	11 S.	523	81	78	90	Nov. 1, 1870	
Roseburg, P T W	43 13	123 20	3 13 S.	523	56	48	67	July 15, 1877	
Sacramento, V	38 35	121 30	3 06 S.	71	106	100	117	July 1, 1877	
St. Louis, P T W R S	38 38	90 12	1 01 S.	571 567	110	100	210	Nov. 1, 1870	Redetermined Sept. 15, 1896.
St. Paul, P T W R S	44 58	93 03	1 12 S.	850 837	114	93	124	Nov. 1, 1870	Redetermined Oct. 1, 1896.
Salt Lake City, P T W R S	40 46	111 54	2 27 S.	4,345	83	75	90	Mar. 19, 1874	
San Antonio, V	29 27	98 28	1 34 S.	704	95	83	104	Jan. 2, 1876	
San Diego, P T W R S	32 43	117 10	2 49 S.	69	59	52	70	Nov. 1, 1871	
Sandusky, V	41 25	82 40	30 S.	629	62	55	74	Aug. 2, 1877	
San Francisco, P T W R S	37 48	122 26	3 10 S.	153	161	154	167	Feb. 2, 1871	
San Luis Obispo, P V	35 18	120 39	3 03 S.	201	10	3	46	June 1, 1885	
Santa Fe, P T W S	35 41	105 57	2 04 S.	6,998	47	39	50	Nov. 20, 1871	
Sault Ste. Marie, P T W	46 28	84 22	37 S.	642 624	56 58	48 47	65	Aug. 5, 1877	May 1, 1896.
Savannah, P T W R S	32 05	81 05	24 S.	98	63	55	86	Jan. 1, 1871	
Seattle, P T W R S	47 38	122 20	3 09 S.	119	100	94	108	May 1, 1893	
Shreveport, T V	32 30	93 40	1 14 S.	249	77	76	84	Sept. 3, 1871	
Sioux City, V	42 29	96 24	1 26 S.	1,165	96	92	109	Dec. 1, 1887	
Spokane, P T W	47 40	117 25	2 49 S.	1,930 1,943	99	90	107	Feb. 1, 1881	Redetermined Dec. 1, 1896.
Springfield, Ill., V	39 48	89 39	58 S.	644	82	60	92	July 1, 1879	
Springfield, Mo., V	37 12	93 18	1 13 S.	1,324	100	3	103	June 3, 1882	
Tampa, P T W R S	27 57	82 27	30 S.	36	60	52	68	Mar. 13, 1890	
Tatoosh Island, P V	48 23	124 44	3 19 S.	86	12 7	1	21	Oct. 1, 1883	Aug. 1, 1896.
Toledo, P T W	41 40	83 34	34 S.	674	122	113	127	Nov. 1, 1870	
Topeka	39 03	95 41	1 23 S.	998	81	73	89	June 1, 1887	
Valentine, V	42 50	100 32	1 42 S.	2,593	37	26	38	Sept. 1, 1885	
Vicksburg, P T W R S	32 22	90 53	1 03 S.	254	65	58	73	Sept. 10, 1871	
Vineyard Haven, V	41 26	70 43	17 F.	.....	20	3	55	Nov. 6, 1886	
Walla Walla, V	46 02	118 20	2 53 S.	1,018	65	56	73	Dec. 1, 1885	
Washington City, P T W R S.	38 54	77 03	08 S.	112	59	42	76	Nov. 1, 1870	
Wichita, V	37 41	97 20	1 29 S.	1,351	78	71	85	July. 1, 1888	
Williston, T V	48 09	103 35	1 54 S.	1,875	15	22	31	Nov. 24, 1893	
Wilmington, P T W R S.	34 14	77 57	12 S.	78	82	76	88 90	Jan. 1, 1871	Nov. 1896.
Winnemucca, T V	40 58	117 43	2 51 S.	4,340	59	52	70	July 1, 1877	
Woods Hole, V	41 33	70 40	17 F.	22	51	39	57	Jan. 1, 1873	
Yankton, V	42 54	97 28	1 30 S.	1,232	51	43	57	Apr. 1, 1873	
Yuma, P T W	32 45	114 36	2 38 S.	141	16	2	50	Oct. 4, 1875	

TABLE II.—CHANGES IN WEATHER BUREAU STATIONS DURING 1896.

ESTABLISHED.

Stations.	Latitude.	Longitude.	Date of establishment.	Stations.	Latitude.	Longitude.	Date of establishment.
	° ′	° ′		CORN AND WHEAT.	° ′	° ′	
Binghamton, N. Y. *a*	42 08	75 55	Oct. 1, 1896	Aberdeen, S. Dak	45 27	98 26	July 1, 1896
Wash Woods, N. C. *b*	36 38	75 53	Aug. 8, 1896	Alexandria, Minn	45 53	95 26	Do.
SPECIAL RIVER.				Ann Arbor, Mich	42 17	83 44	Do.
Melville, La	30 32	90 27	Aug. 10, 1896	Ashland, Nebr	41 02	96 20	Do.
COTTON REGION.				Auburn, Ind	41 19	85 05	Do.
				Badaxe, Mich	43 48	82 57	Do.
Mansfield, La	32 01	93 36	May 14, 1896	Baker, Kans	39 46	97 20	Do.
Robeline, La	31 46	93 02	May 13, 1896	Bardstown, Ky	37 48	85 30	Do.
Temple, Tex	31 05	97 15	Apr. 16, 1896	Battlecreek, Mich	42 19	85 11	Do.

a One observation daily.

b Repair station, taking one observation daily.

TABLE II.—CHANGES IN WEATHER BUREAU STATIONS DURING 1896—Continued.

ESTABLISHED—Continued.

Stations.	Latitude.	Longitude.	Date of establishment.	Stations.	Latitude.	Longitude.	Date of establishment.
	° ′	° ′			° ′	° ′	
Bellefontaine, Ohio	40 23	83 45	July 1, 1896	Lexington, Mo	39 10	93 53	July 1, 1896
Bloomington, Ind	39 11	86 33	Do.	Lisbon, N. Dak	46 26	97 44	Do.
Bowling Green, Ky	36 58	86 25	Do.	Logansport, Ind	40 45	86 21	Do.
Brunswick, Mo	39 24	93 05	Do.	McLeansboro, Ill	38 07	88 35	Do.
Bucyrus, Ohio	40 48	82 59	Do.	McPherson, Kans	38 22	97 40	Do.
Cambridge City, Ind	39 53	85 14	Do.	Macksville, Kans	37 58	98 58	Do.
Campbell, Minn	46 04	96 33	Do.	Madison, Wis	43 05	89 24	Do.
Canal Dover, Ohio	40 32	81 31	Do.	Manhattan, Kans	39 12	96 37	Do.
Canton, Ohio	40 48	81 25	Do.	Maquoketa, Iowa	43 15	91 20	Do.
Carroll, Iowa	42 05	94 55	Do.	Marion, Ind	40 34	85 41	Do.
Cedar Rapids, Iowa	41 58	91 40	Do.	Marshalltown, Iowa	42 00	93 10	Do.
Centerville, Iowa	40 45	92 55	Do.	Martinton, Ill	40 55	87 42	Do.
Charles City, Iowa	43 05	92 43	Do.	Maryville, Mo	40 20	94 54	Do.
Chemung, Ill	42 26	88 39	Do.	Maysville, Ky	38 41	83 44	Do.
Chillicothe, Ohio	39 19	82 57	Do.	Mexico, Mo	39 10	91 52	Do.
Circleville, Ohio	39 37	82 57	Do.	Millbank, S. Dak	45 15	96 37	Do.
Clarinda, Iowa	40 43	95 00	Do.	Mitchell, S. Dak	43 42	98 00	Do.
Clinton, Iowa	41 50	90 10	Do.	Mount Sterling, Ky	38 06	83 56	Do.
Columbus, Ind	39 13	85 56	Do.	Mount Vernon, Ill	38 20	88 57	Do.
Columbus, Nebr	41 24	97 20	Do.	Neche, N. Dak	48 58	97 34	Do.
Crookston, Minn	47 55	96 30	Do.	New Burnside, Ill	37 37	88 45	Do.
Dayton, Ohio	39 46	84 10	Do.	New Ulm, Minn	44 19	94 30	Do.
Decatur, Ill	39 50	88 58	Do.	Norwalk, Ohio	41 15	82 38	Do.
Defiance, Ohio	41 17	84 24	Do.	Oakdale, Nebr	42 04	97 57	Do.
Delphi, Ind	40 35	86 41	Do.	Ogden, Iowa	42 03	94 01	Do.
Detroit City, Minn	46 49	95 55	Do.	O'Neill, Nebr	42 27	98 33	Do.
Devils Lake, N. Dak	48 08	98 51	Do.	Osage City, Kans	38 36	95 50	Do.
Dixon, Ill	41 52	89 26	Do.	Osceola, Iowa	41 03	93 45	Do.
Eubanks, Ky	37 18	84 39	Do.	Ovid, Mich	43 10	84 20	Do.
Fairbury, Nebr	40 08	97 08	Do.	Owensboro, Ky	37 46	87 05	Do.
Fairfield, Iowa	41 01	91 57	Do.	Paducah, Ky	37 04	88 38	Do.
Fairmont, Nebr	40 38	97 34	Do.	Paris, Ill	39 38	87 42	Do.
Farmland, Ind	40 11	85 10	Do.	Park Rapids, Minn	46 57	95 10	Do.
Faulkton, S. Dak	45 01	99 06	Do.	Peoria, Ill	40 42	89 36	Do.
Findlay, Ohio	41 04	83 36	Do.	Pleasure Ridge Park,			
Flint, Mich	43 00	83 40	Do.	Ky	38 15	85 45	Do.
Forest City, Iowa	43 14	93 38	Do.	Pomeroy, Ohio	39 08	81 50	Do.
Fort Scott, Kans	37 52	94 43	Do.	Prairie du Chien, Wis	43 02	91 08	Do.
Galva, Ill	41 14	90 02	Do.	Rantoul, Ill	40 18	88 10	Do.
Grand Meadow, Minn	43 42	92 37	Do.	Richmond, Ky	37 44	87 18	Do.
Granite Falls, Minn	44 48	95 37	Do.	Rockford, Ill	42 14	89 05	Do.
Granville, Ohio	40 06	82 31	Do.	St. Johns, Ky	37 41	85 58	Do.
Greensburg, Ky	37 16	85 33	Do.	Sedan, Kans	37 10	96 10	Do.
Greenville, Ohio	40 07	84 50	Do.	Shelbyville, Ky	38 15	85 13	Do.
Hampton, Iowa	42 30	93 20	Do.	Sibley, Iowa	43 24	95 43	Do.
Harrisonville, Mo	38 38	94 25	Do.	South Bend, Ind	41 36	86 16	Do.
Hartington, Nebr	42 38	97 10	Do.	Streator, Ill	41 10	88 50	Do.
Hays, Kans	38 50	99 21	Do.	Sycamore, Ill	42 00	88 42	Do.
Henderson, Ky	37 51	87 38	Do.	Tecumseh, Nebr	40 22	96 10	Do.
Hillsboro, Ill	39 10	89 31	Do.	Tekamah, Nebr	41 46	96 11	Do.
Hopkinsville, Ky	36 51	87 27	Do.	Toronto, Kans	37 53	95 43	Do.
Iowa City, Iowa	41 40	91 30	Do.	Tuscola, Ill	39 49	88 19	Do.
Ironton, Mo	37 38	90 37	Do.	Unionville, Mo	40 28	93 01	Do.
Jefferson City, Mo	38 34	92 10	Do.	Vincennes, Ind	38 43	87 31	Do.
Kankakee, Ill	41 07	87 05	Do.	Warrenton, Mo	38 50	91 15	Do.
Kidder, Mo	39 47	94 07	Do.	Washington, Ind	38 40	87 11	Do.
Lafayette, Ind	40 28	86 54	Do.	Waterloo, Iowa	42 31	92 24	Do.
Lamar, Mo	37 32	94 15	Do.	Watertown, Wis	43 11	88 48	Do.
Langdon, N. Dak	48 46	98 24	Do.	Williamsburg, Ky	36 46	84 10	Do.
Larimore, N. Dak	47 53	97 36	Do.	Winnebago City, Minn	43 46	94 14	Do.
Lexington, Ky	38 02	84 33	Do.	Worthington, Minn	43 36	95 37	Do.

DISCONTINUED.

Stations.	Latitude.	Longitude.	Date of discontinuance.	Stations.	Latitude.	Longitude.	Date of discontinuance.
	° ′	° ′		REPAIR STATIONS.	° ′	° ′	
Independence, Cal	36 48	118 12	Mar. 12, 1896	Currituck Inlet, N. C	36 30	75 53	Aug. 8, 1896
St. Vincent, Minn	48 56	97 14	Jan. 31, 1896	Gettysburg, Wash	48 08	123 45	July 29, 1896
COTTON REGION.				Wells, Wash	.....	.....	Sept. 30, 1896
Coushatta, La	32 00	93 14	May. 4, 1896				
Natchitoches, La	31 46	93 02	Do.				

EXPLANATION OF THE TABLES.

(A. J. HENRY, *Chief of Division.*)

Pressure.—The barograph in use at the Washington station is described on page 43, Report of the Chief of the Weather Bureau, 1891–92. Richard barographs are in use at the remaining stations.

The readings of the mercurial barometer at 8 a. m. and 8 p. m. are adopted as the standard of reference, and corrections for intermediate hours, interpolated from the known differences at 8 a. m. and 8 p. m., are applied to the curve throughout the twenty-four hours. The averages given in the tables are therefore those of the standard mercurial barometer at 8 a. m. and 8 p. m., seventy-fifth meridian time, respectively, corrected for temperature and instrumental error, and the corrected barograph readings for the remaining hours.

The corrections applied to individual hourly readings vary in magnitude. The average is about 0.02 of an inch, while in extreme cases it may be 0.06 or 0.08 of an inch, depending somewhat upon the skill of the observer in keeping the instrument in adjustment.

The hourly values are read off to the nearest hundredth of an inch, but the averages in the tables are given to thousandths of an inch, in conformity with the plan adopted in the Monthly Weather Review.

A correction for reduction to standard gravity has not been applied, but it is given at the head of each table.

The probable uncertainty in the figures here given, due to errors in reading from the barograph sheets, and any systematic error of the barograph, not wholly eliminated by the comparison at 8 a. m. and 8 p. m., is about 0.02 of an inch.

Temperature.—The mean hourly temperatures given in the tables have been deduced from thermographs described and figured in the Report of the Chief of the Weather Bureau, 1891–92, page 29. These instruments are placed in the standard shelter with other thermometers, and are checked twice daily for time errors, and for agreement with the standard dry-bulb thermometer of the whirled psychrometer.

In transcribing the hourly values the readings of the dry-bulb thermometer at 8 a. m. and 8 p. m. are adopted as the standard of reference, and these readings are given in the appropriate columns of the tables. Corrections for intermediate hours, interpolated from the known differences at 8 a. m., 8 p. m., and at the time of occurrence of the daily maximum and minimum temperatures, respectively, are applied to the curve throughout the twenty-four hours, thus making it conform as closely as practicable to the readings of standard thermometers. The averages given in the tables are therefore those of the standard dry thermometer at 8 a. m. and 8 p. m., and the corrected thermograph readings for intermediate hours.

The means of the daily maximum and minimum temperatures have been derived from readings of standard self-registering maximum and minimum thermometers.

In general the magnitude of the corrections applied is about 1° F., although a number of instruments accord with the standard dry thermometer within less than a degree.

Wind.—The arithmetical means of the hourly movements of the wind ending with the respective hours, as registered automatically by the Robinson anemometer, in conjunction with an electrical recording mechanism described and illustrated in the Report of the Chief of the Weather Bureau, 1891–92, page 19, follow the temperature tables in this report. No corrections have been applied to reduce the registered velocities to true velocities.

In studying the diurnal variation of wind movement, the following facts should be kept in mind. In graduating the dials of the various sizes of Robinson anemometers, it has been assumed by the makers that the centers of the cups move only one-third as fast as the wind, although numerous experiments have demonstrated that cups and arms of various proportions require different formulæ and tables of reduction even in perfectly steady motion. Professor Marvin has shown that for ordinary gusty winds, when the anemometer cups rapidly vary their rate of rotation, the moment of inertia of the revolving parts is a most important factor. The instruments having the least inertia record most truly, and those having large inertia exceed these in proportion as the gusts are stronger; consequently the anemometer records are liable to be too large in the gusty winds of the daytime as compared with the more steady winds of nighttime. No correction for this inertia error has been determined, nor can be, unless we have simultaneous records with two anemometers having different moments of inertia; therefore the apparent diurnal variation of wind velocity includes a slight inertia error which is probably periodic in character between the winds of daytime and nighttime.

While the gustiness of the ordinary wind—that is, its sudden and momentary fluctuations of velocity—must be regarded as highly variable, yet in practical anemometry it is not possible to do more than make an average allowance for its effect upon an anemometer.

For the ordinary gusty winds of the free atmosphere Professor Marvin adopts the following equation, expressing the relation between the motion of the cups and the velocity of the wind at any moment:

$$\text{Log. } V = 0.509 + 0.9012 \text{ log. } v;$$

where V is velocity of wind in miles per hour and v is the linear velocity (also in miles per hour) of the cup centers. This equation applies strictly to anemometers that have 4-inch hemispherical brass cups on arms 6.72 inches long, whose revolving parts weigh about 590 grams (22 ounces) and have a moment of inertia of about 50,000 C. G. S. units.

The following table gives the corrected velocities corresponding to observed velocities up to 90 miles per hour. The tabular values corresponding to indicated velocities greater than 60 miles per hour are uncertain, as direct experiments were not made at the higher velocity:

WIND VELOCITIES, AS INDICATED BY WEATHER BUREAU ANEMOMETER, CONVERTED TO TRUE VELOCITIES (IN MILES PER HOUR).

Indicated velocity.	0	1	2	3	4	5	6	7	8	9
0	.....	.....	.....	.....	.....	5.1	6.0	6.9	7.8	8.7
10	9.6	10.4	11.3	12.1	12.9	13.8	14.6	15.4	16.2	17.0
20	17.8	18.6	19.4	20.2	21.0	21.8	22.6	23.4	24.2	24.9
30	25.7	26.5	27.3	28.0	28.8	29.6	30.3	31.1	31.8	32.6
40	33.3	34.1	34.8	35.6	36.3	37.1	37.8	38.5	39.3	40.0
50	40.8	41.5	42.2	43.0	43.7	44.4	45.1	45.9	46.6	47.3
60	48.0	48.7	49.4	50.2	50.9	51.6	52.3	53.0	53.8	54.5
70	55.2	55.9	56.6	57.3	58.0	58.7	59.4	60.1	60.8	61.5
80	62.2	62.9	63.6	64.3	65.0	65.8	66.4	67.1	67.8	68.5
90	69.2	.....	.....	.....	.....	.....	.....	.....	.....	.....

The maximum wind velocity, in miles per hour, for a five-minute period, is given in the column headed "Max. vel."

The figures under the several headings, "N.," "NE.," etc., indicate the number of hours that the wind blew from the directions given at the top of the columns. In tabulating these data from the original records the direction of the wind at the even hour was considered as the prevailing direction for the hour ending at that time.

The references of former reports: H = Height of barometer above sea level; h_t = Height of thermometer above ground; h_a = Height of anemometer cups above ground, are continued in this.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME.

BISMARCK, N. DAK.

[λ = 46° 47′ N.; φ = 100° 39′ W.]

1896	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	28.302	.291	.287	.287	.287	.286	.286	.285	.292	.298	.304	.310	.302
Feb	28.172	.171	.168	.166	.165	.167	.172	.176	.183	.186	.182	.182	.178
Mar	28.236	.234	.232	.231	.229	.228	.237	.243	.252	.255	.251	.251	.247
Apr	28.152	.155	.146	.144	.136	.139	.149	.151	.152	.149	.145	.143	.137
May	28.065	.065	.066	.063	.067	.073	.077	.083	.086	.087	.084	.079	.072
June ...	28.188	.188	.191	.193	.192	.198	.206	.207	.210	.211	.207	.204	.200
July	28.263	.269	.267	.266	.267	.270	.277	.285	.291	.292	.290	.284	.275
Aug	28.236	.242	.246	.250	.257	.263	.265	.273	.279	.281	.280	.274	.260
Sept....	28.242	.242	.241	.244	.244	.247	.252	.257	.262	.263	.260	.255	.245
Oct.....	28.276	.273	.273	.271	.269	.270	.272	.275	.280	.283	.280	.277	.268
Nov	28.345	.345	.344	.347	.341	.336	.336	.330	.335	.342	.343	.342	.336
Dec	28.260	.258	.256	.258	.254	.247	.240	.238	.235	.234	.238	.246	.235
Year....	28.228	.228	.226	.227	.226	.227	.231	.234	.238	.240	.239	.237	.230

BOSTON, MASS.

[λ = 42° 21′ N.; φ = 71° 4′ W.]

Jan	29.995	.002	.003	.001	.001	.013	.022	.035	.044	.044	.031	.011	.995
Feb	29.701	.703	.698	.708	.711	.717	.732	.742	.742	.740	.735	.714	.690
Mar	29.755	.745	.739	.741	.747	.756	.772	.777	.779	.775	.769	.757	.744
Apr	29.963	.961	.962	.965	.973	.989	.995	.999	.001	.995	.988	.976	.962
May	29.887	.884	.882	.884	.891	.902	.910	.905	.900	.895	.889	.883	.869
June ...	29.819	.816	.815	.821	.833	.840	.845	.846	.841	.840	.834	.825	.816
July	29.856	.855	.852	.854	.864	.871	.880	.882	.882	.881	.879	.871	.866
Aug	29.886	.885	.881	.881	.890	.898	.904	.905	.905	.901	.892	.884	.878
Sept....	29.904	.900	.895	.895	.898	.906	.918	.920	.923	.919	.910	.902	.889
Oct.....	29.893	.886	.884	.887	.889	.895	.907	.911	.913	.909	.902	.885	.872
Nov	30.028	.033	.030	.033	.035	.041	.050	.057	.060	.061	.043	.028	.014
Dec	29.975	.981	.978	.968	.971	.980	.991	.997	.005	.010	.995	.976	.969
Year....	29.888	.888	.885	.886	.892	.901	.910	.915	.916	.914	.906	.893	.880

BUFFALO, N. Y.

[λ = 42° 53′ N.; φ = 78° 53′ W.]

Jan	29.280	.283	.285	.279	.273	.277	.285	.291	.305	.311	.310	.295	.278
Feb	29.041	.041	.034	.028	.032	.032	.037	.037	.039	.033	.027	.026	.007
Mar	29.168	.161	.150	.149	.155	.155	.174	.182	.187	.190	.186	.177	.165
Apr	29.259	.253	.249	.249	.254	.265	.274	.279	.278	.277	.275	.269	.265
May	29.155	.152	.153	.156	.162	.176	.181	.185	.185	.189	.188	.182	.174
June ...	29.155	.151	.150	.157	.160	.167	.175	.178	.178	.179	.177	.174	.164
July	29.196	.192	.192	.194	.200	.208	.215	.216	.215	.214	.211	.206	.195
Aug	29.214	.208	.209	.212	.218	.227	.235	.242	.237	.238	.236	.230	.224
Sept....	29.204	.201	.198	.197	.205	.212	.221	.220	.221	.220	.217	.211	.205
Oct.....	29.205	.202	.200	.202	.208	.217	.225	.235	.242	.243	.242	.235	.223
Nov	29.276	.277	.277	.274	.279	.278	.282	.289	.297	.299	.299	.287	.274
Dec	29.300	.301	.309	.307	.306	.314	.323	.330	.340	.345	.341	.325	.306
Year....	29.204	.202	.200	.200	.204	.211	.219	.224	.227	.228	.226	.218	.207

CHICAGO, ILL.

[λ = 41° 53′ N.; φ = 87° 37′ W.]

Jan	29.225	.224	.232	.230	.228	.227	.233	.243	.250	.257	.261	.253	.234
Feb	29.039	.035	.036	.032	.028	.037	.043	.049	.056	.057	.059	.058	.046
Mar	29.159	.159	.156	.148	.155	.159	.167	.175	.177	.185	.185	.182	.176
Apr	29.135	.130	.131	.132	.138	.147	.161	.171	.169	.173	.173	.172	.160
May	29.059	.055	.054	.061	.067	.079	.089	.094	.096	.095	.091	.087	.084
June ...	29.107	.100	.096	.097	.102	.112	.122	.133	.135	.137	.139	.141	.133
July	29.147	.141	.140	.140	.145	.154	.161	.170	.180	.179	.179	.180	.171
Aug	29.160	.158	.157	.157	.158	.164	.174	.184	.184	.187	.189	.186	.180
Sept....	29.148	.145	.140	.140	.141	.149	.163	.170	.175	.180	.184	.178	.170
Oct.....	29.165	.164	.165	.166	.169	.177	.183	.194	.200	.201	.200	.195	.182
Nov	29.197	.196	.207	.208	.207	.213	.215	.227	.233	.238	.242	.231	.209
Dec	29.271	.267	.275	.271	.264	.262	.267	.275	.281	.291	.297	.282	.264
Year....	29.151	.148	.149	.148	.150	.157	.165	.174	.178	.182	.183	.179	.167

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME.

BISMARCK, N. DAK.

[H = 1,674 ft.; gravity correction, 0; local time, 1h 42m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1896.
.280	.272	.274	.284	.297	.310	.315	.312	.315	.316	.318	.296	.444	.165	Jan.
.168	.157	.152	.152	.157	.163	.172	.175	.174	.176	.178	.171	.304	.017	Feb.
.243	.234	.224	.220	.220	.224	.230	.241	.245	.245	.241	.237	.385	.075	Mar.
.127	.121	.117	.111	.110	.110	.111	.121	.131	.134	.131	.134	.254	.016	Apr.
.064	.058	.051	.044	.041	.040	.042	.049	.061	.070	.076	.065	.161	.973	May.
.191	.180	.169	.159	.151	.148	.149	.153	.162	.174	.183	.184	.280	.078	June.
.270	.262	.254	.242	.236	.230	.229	.236	.248	.257	.265	.264	.338	.181	July.
.248	.235	.217	.207	.202	.195	.192	.201	.218	.229	.231	.241	.325	.145	Aug.
.234	.220	.211	.204	.205	.209	.212	.223	.233	.241	.245	.237	.362	.116	Sept.
.256	.243	.236	.235	.237	.244	.253	.258	.264	.269	.271	.264	.375	.155	Oct.
.322	.310	.305	.313	.324	.332	.335	.345	.356	.361	.364	.337	.493	.195	Nov.
.219	.206	.198	.202	.214	.219	.224	.226	.228	.229	.231	.233	.368	.111	Dec.
.218	.208	.201	.198	.200	.202	.205	.212	.220	.225	.228	.222	.341	.102	Year.

BOSTON, MASS.

[H = 125 ft.; gravity correction, —.01; local time, 16m fast.]

.990	.996	.998	.004	.010	.016	.016	.019	.019	.021	.018	.013	.119	.903	Jan.
.674	.671	.667	.669	.672	.676	.677	.685	.683	.682	.679	.699	.889	.485	Feb.
.735	.729	.729	.740	.749	.756	.767	.777	.776	.779	.772	.757	.936	.575	Mar.
.950	.935	.932	.933	.935	.945	.957	.965	.965	.969	.968	.966	.056	.877	Apr.
.855	.849	.844	.844	.845	.854	.863	.872	.874	.875	.876	.876	.975	.778	May.
.809	.803	.797	.797	.795	.804	.814	.824	.829	.832	.834	.822	.907	.740	June.
.862	.855	.848	.844	.847	.854	.860	.865	.866	.863	.861	.863	.955	.767	July.
.868	.859	.858	.858	.861	.867	.879	.884	.885	.887	.884	.883	.949	.816	Aug.
.877	.872	.871	.874	.880	.887	.898	.903	.903	.903	.901	.898	.009	.787	Sept.
.869	.865	.868	.875	.883	.891	.898	.904	.903	.900	.896	.891	.993	.788	Oct.
.005	.007	.009	.019	.023	.029	.035	.041	.039	.042	.042	.033	.169	.894	Nov.
.972	.982	.985	.986	.996	.004	.003	.001	.003	.002	.992	.988	.113	.840	Dec.
.872	.869	.867	.870	.875	.882	.889	.895	.895	.896	.894	.891	.005	.771	Year.

BUFFALO, N. Y.

[H = 768 ft.; gravity correction, 0; local time, 15m slow.]

.272	.276	.284	.288	.296	.303	.301	.301	.302	.299	.294	.290	.398	.169	Jan.
.998	.994	.998	.006	.020	.034	.041	.039	.038	.038	.033	.027	.189	.859	Feb.
.159	.157	.156	.162	.171	.184	.189	.195	.192	.193	.189	.173	.323	.018	Mar.
.256	.247	.243	.243	.242	.243	.249	.259	.259	.259	.258	.259	.351	.163	Apr.
.166	.157	.151	.147	.145	.148	.150	.155	.157	.160	.158	.164	.246	.075	May.
.155	.149	.141	.138	.138	.143	.146	.157	.162	.164	.163	.159	.231	.091	June.
.185	.176	.170	.165	.164	.174	.176	.186	.187	.190	.195	.193	.260	.120	July.
.214	.203	.197	.194	.188	.192	.197	.206	.207	.209	.213	.215	.288	.139	Aug.
.197	.190	.185	.182	.184	.187	.193	.200	.199	.197	.194	.202	.306	.098	Sept.
.215	.210	.209	.210	.214	.219	.223	.224	.222	.217	.214	.219	.298	.127	Oct.
.266	.264	.270	.276	.285	.287	.290	.290	.290	.288	.292	.283	.396	.153	Nov.
.297	.290	.293	.295	.297	.305	.307	.305	.304	.304	.305	.310	.419	.183	Dec.
.198	.193	.191	.192	.195	.202	.205	.210	.210	.210	.209	.208	.309	.100	Year.

CHICAGO, ILL.

[H = 824 ft.; gravity correction, —.01; local time, 50m slow.]

.214	.205	.202	.205	.214	.218	.225	.229	.228	.231	.228	.229	.332	.123	Jan.
.034	.027	.028	.031	.033	.039	.044	.044	.043	.043	.042	.041	.162	.907	Feb.
.163	.153	.149	.145	.147	.146	.151	.156	.158	.163	.162	.162	.292	.019	Mar.
.148	.135	.126	.118	.115	.114	.118	.132	.139	.141	.139	.142	.225	.042	Apr.
.076	.066	.058	.051	.048	.046	.050	.062	.071	.070	.069	.070	.149	.969	May.
.129	.120	.110	.105	.099	.098	.094	.099	.108	.112	.114	.114	.181	.043	June.
.167	.158	.145	.135	.129	.127	.130	.134	.138	.140	.142	.151	.215	.078	July.
.168	.155	.150	.142	.137	.135	.138	.151	.157	.159	.162	.162	.235	.084	Aug.
.157	.146	.141	.141	.140	.137	.141	.146	.149	.147	.148	.153	.256	.038	Sept.
.167	.157	.157	.154	.156	.157	.159	.161	.162	.164	.161	.172	.233	.099	Oct.
.198	.194	.193	.196	.201	.206	.211	.213	.214	.215	.218	.212	.326	.090	Nov.
.246	.242	.246	.252	.259	.263	.266	.264	.262	.263	.264	.266	.377	.148	Dec.
.156	.146	.142	.140	.140	.140	.144	.149	.152	.154	.154	.156	.249	.053	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

CINCINNATI, OHIO.

[λ=39° 6′ N.; φ=84° 30′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	29.493	.493	.500	.499	.496	.499	.509	.518	.530	.539	.538	.528	.506
Feb	29.313	.309	.308	.302	.301	.307	.314	.321	.334	.333	.334	.326	.311
Mar	29.404	.399	.394	.391	.393	.399	.412	.426	.435	.440	.436	.431	.422
Apr	29.438	.437	.435	.442	.449	.460	.470	.479	.481	.480	.472	.463	.447
May	29.341	.338	.340	.342	.349	.364	.378	.383	.390	.387	.384	.372	.356
June ...	29.325	.321	.322	.324	.333	.340	.352	.360	.360	.358	.358	.353	.338
July....	29.393	.386	.384	.384	.391	.400	.412	.417	.414	.415	.412	.409	.399
Aug	29.415	.409	.405	.409	.412	.421	.432	.439	.444	.440	.435	.428	.419
Sept....	29.378	.377	.372	.374	.379	.385	.397	.401	.406	.410	.407	.400	.389
Oct.....	29.403	.406	.405	.406	.412	.421	.431	.443	.452	.449	.444	.433	.415
Nov	29.511	512	.518	.520	.524	.529	.536	.547	.563	.568	.567	.555	.535
Dec	29.550	.551	.552	.551	.550	.554	.561	.564	.571	.578	.580	.564	.540
Year....	29.414	.412	.411	.412	.416	.423	.434	.442	.448	.450	.447	.438	.423

CLEVELAND, OHIO.

[λ=41° 30′ N.; φ=81° 42′ W.]

Jan	29.308	.309	.316	.315	.312	.309	.319	.323	.326	.331	.331	.317	.297
Feb	29.097	.094	.089	.080	.078	.078	.081	.082	.081	.075	.076	.075	.067
Mar	29.227	.224	.220	.214	.215	.221	.229	.233	.232	.231	.229	.225	.225
Apr	29.267	.264	.264	.265	.272	.282	.295	.298	.292	.288	.286	.280	.272
May	29.171	.168	.171	.176	.185	.197	.211	.213	.215	.211	.212	.202	.197
June ...	29.170	.169	.170	.175	.181	.188	.196	.201	.201	.199	.200	.199	.193
July....	29.222	.218	.213	.216	.225	.233	.242	.248	.241	.237	.234	.229	.222
Aug	29.241	.240	.242	.246	.252	.262	.275	.277	.278	.276	.274	.262	.247
Sept....	29.216	.211	.208	.210	.215	.219	.230	.237	.237	.235	.234	.229	.222
Oct.....	29.221	.221	.224	.225	.231	.239	.248	.257	.264	.265	.261	.251	.238
Nov	29.295	.295	.297	.299	.302	.304	.309	.312	.326	.326	.327	.315	.304
Dec	29.332	.334	.339	.341	.342	.344	.353	.356	.362	.365	.365	.349	.330
Year....	29.231	.229	.229	.230	.234	.240	.249	.253	.255	.253	.252	.244	.234

DETROIT, MICH.

[λ=42° 20′ N.; φ=83° 3′ W.]

Jan	29.337	.336	.340	.339	.335	.337	.343	.349	.355	.363	.367	.359	.337
Feb	29.127	.125	.118	.110	.106	.106	.110	.113	.118	.117	.117	.111	.103
Mar	29.260	.258	.256	.252	.253	.260	.268	.274	.278	.280	.277	.275	.268
Apr	29.293	.290	.291	.290	.293	.298	.308	.316	.313	.315	.313	.311	.300
May	29.194	.191	.194	.195	.200	.208	.217	.223	.225	.225	.223	.219	.210
June ...	29.206	.203	.203	.204	.209	.218	.224	.234	.237	.238	.238	.234	.222
July....	29.237	.235	.235	.234	.237	.242	.247	.253	.257	.256	.255	.253	.247
Aug	29.258	.257	.258	.258	.265	.273	.280	.289	.289	.292	.288	.278	.271
Sept....	29.241	.240	.239	.239	.241	.245	.254	.260	.265	.272	.270	.263	.254
Oct.....	29.263	.263	.263	.265	.268	.275	.282	.290	.297	.299	.299	.291	.276
Nov	29.311	.310	.312	.309	.310	.310	.317	.332	.335	.337	.338	.331	.320
Dec	29.368	.367	.373	.369	.369	.369	.376	.383	.387	.393	.392	.376	.357
Year....	29.258	.256	.257	.255	.257	.262	.269	.276	.280	.282	.281	.275	.264

DODGE CITY, KANS.

[λ=37° 45′ N.; φ=100° 0′ W.]

Jan	27.462	.455	.450	.454	.452	.446	.443	.449	.455	.462	.474	.479	.471
Feb	27.392	.394	.393	.393	.391	.392	.398	.405	.417	.419	.419	.418	.411
Mar	27.393	.390	.392	.390	.386	.389	.394	.397	.403	.403	.399	.391	.381
Apr	27.272	.269	.265	.261	.260	.261	.267	.276	.282	.278	.279	.278	.268
May	27.257	.251	.252	.248	.250	.260	.273	.280	.293	.295	.296	.297	.288
June ...	27.403	.404	.408	.408	.403	.415	.420	.428	.440	.443	.439	.434	.423
July....	27.446	.450	.449	.447	.445	.451	.458	.464	.474	.475	.470	.466	.455
Aug	27.448	.451	.447	.450	.451	.455	.459	.466	.482	.486	.488	.482	.468
Sept....	27.446	.442	.445	.445	.447	.452	.457	.457	.469	.472	.476	.469	.453
Oct.....	27.448	.448	.452	.450	.447	.448	.452	.453	.459	.462	.462	.454	.443
Nov	27.440	.442	.438	.443	.445	.449	.458	.460	.470	.476	.477	.478	.465
Dec	27.528	525	.520	.523	.525	.520	.522	.525	.532	.532	.533	.534	.515
Year....	27.411	.410	.409	.409	.408	.412	.417	.422	.431	.434	.434	.432	.420

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

CINCINNATI, OHIO.

[H = 628 ft.; gravity correction, —.02; local time, 38m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1896.
.490	.487	.486	.486	.490	.497	.499	.502	.504	.502	.496	.504	.596	.403	Jan.
.295	.282	.284	.286	.293	.305	.310	.312	.313	.309	.307	.309	.438	.167	Feb.
.409	.399	.395	.394	.400	.407	.413	.423	.422	.419	.415	.412	.545	.267	Mar.
.434	.417	.408	.401	.400	.405	.410	.426	.430	.435	.439	.440	.513	.363	Apr.
.348	.331	.321	.315	.313	.312	.320	.336	.342	.343	.345	.348	.418	.276	May.
.330	.313	.307	.299	.296	.303	.308	.323	.334	.339	.337	.331	.400	.263	June.
.391	.377	.369	.357	.356	.364	.368	.380	.389	.387	.389	.389	.445	.325	July.
.411	.393	.384	.377	.373	.375	.381	.396	.405	.412	.414	.410	.472	.350	Aug.
.377	.363	.352	.354	.356	.360	.365	.377	.381	.381	.378	.380	.465	.298	Sept.
.395	.386	.380	.378	.381	.387	.391	.400	.403	.406	.403	.410	.475	.341	Oct.
.519	.507	.504	.508	.513	.518	.521	.528	.531	.532	.532	.529	.618	.430	Nov.
.524	.514	.512	.515	.522	.529	.534	.538	.539	.540	.540	.545	.645	.441	Dec.
.410	.397	.392	.389	.391	.397	.402	.412	.416	.417	.416	.417	.502	.327	Year.

CLEVELAND, OHIO.

[H = 762 ft.; gravity correction, —.01; local time, 27m slow.]

.287	.289	.296	.303	.309	.313	.318	.313	.313	.315	.311	.312	.413	.196	Jan.
.052	.050	.051	.060	.073	.080	.088	.091	.093	.092	.092	.078	.222	.972	Feb.
.209	.198	.195	.198	.209	.222	.227	.233	.232	.232	.232	.221	.366	.084	Mar.
.257	.237	.223	.227	.231	.242	.251	.257	.256	.259	.263	.264	.351	.167	Apr.
.190	.177	.163	.156	.155	.158	.160	.167	.173	.173	.173	.182	.252	.093	May.
.179	.170	.158	.151	.154	.155	.162	.169	.175	.179	.177	.178	.245	.105	June.
.211	.202	.190	.186	.189	.195	.201	.209	.215	.219	.219	.217	.281	.142	July.
.234	.220	.208	.205	.210	.215	.221	.229	.232	.238	.238	.243	.318	.162	Aug.
.209	.198	.185	.182	.190	.197	.205	.208	.206	.209	.209	.213	.317	.114	Sept.
.226	.220	.216	.216	.218	.221	.226	.230	.229	.225	.225	.233	.301	.146	Oct.
.299	.294	.293	.298	.304	.306	.309	.309	.310	.311	.312	.307	.401	.194	Nov.
.314	.306	.305	.308	.313	.317	.325	.326	.325	.324	.328	.334	.443	.212	Dec.
.222	.213	.207	.208	.213	.218	.224	.228	.230	.231	.232	.232	.326	.132	Year.

DETROIT, MICH.

[H = 730 ft.; gravity correction, —.01; local time, 32m slow.]

.327	.324	.328	.333	.337	.346	.348	.348	.348	.348	.345	.343	.445	.233	Jan.
.093	.088	.092	.098	.108	.118	.122	.128	.130	.129	.128	.113	.257	.979	Feb.
.253	.245	.245	.243	.247	.256	.263	.271	.272	.269	.270	.262	.395	.124	Mar.
.293	.277	.268	.263	.265	.267	.270	.285	.291	.292	.293	.291	.374	.199	Apr.
.199	.186	.178	.174	.167	.168	.177	.190	.199	.201	.201	.199	.272	.110	May.
.213	.203	.195	.185	.183	.186	.188	.196	.205	.209	.213	.210	.283	.136	June.
.241	.232	.224	.215	.212	.214	.214	.226	.235	.235	.236	.236	.299	.167	July.
.261	.250	.243	.237	.232	.229	.234	.246	.253	.255	.258	.261	.342	.182	Aug.
.212	.230	.224	.222	.223	.224	.229	.234	.237	.236	.234	.242	.356	.133	Sept.
.263	.255	.252	.254	.257	.263	.265	.269	.268	.267	.263	.271	.339	.190	Oct.
.311	.306	.309	.313	.319	.322	.325	.330	.329	.330	.330	.321	.423	.196	Nov.
.343	.337	.342	.348	.356	.362	.367	.369	.368	.367	.368	.367	.480	.248	Dec.
.253	.244	.242	.240	.242	.246	.250	.258	.261	.262	.262	.260	.355	.158	Year.

DODGE CITY, KANS.

[H = 2,501 ft.; gravity correction, —.02; local time, 1h 40m slow.]

.445	.425	.420	.427	.429	.435	.445	.454	.460	.464	.465	.451	.566	.347	Jan.
.387	.363	.350	.346	.348	.354	.363	.370	.377	.379	.383	.386	.511	.249	Feb.
.369	.350	.335	.331	.331	.339	.354	.372	.381	.393	.397	.377	.517	.249	Mar.
.251	.236	.225	.212	.207	.204	.213	.229	.243	.253	.255	.252	.362	.135	Apr.
.274	.261	.247	.234	.226	.224	.227	.237	.246	.260	.266	.260	.346	.169	May.
.406	.388	.368	.353	.340	.334	.334	.348	.365	.383	.398	.395	.471	.300	June.
.444	.426	.409	.393	.385	.384	.392	.402	.416	.431	.439	.436	.493	.371	July.
.451	.431	.409	.392	.381	.378	.376	.394	.415	.431	.441	.439	.509	.353	Aug.
.435	.414	.398	.387	.380	.381	.389	.408	.428	.440	.445	.435	.531	.343	Sept.
.423	.399	.387	.383	.383	.389	.405	.415	.426	.437	.440	.432	.508	.362	Oct.
.442	.427	.416	.410	.413	.420	.433	.444	.446	.451	.451	.446	.587	.297	Nov.
.491	.469	.455	.456	.459	.471	.484	.492	.496	.499	.500	.504	.610	.407	Dec.
.402	.382	.364	.360	.357	.359	.368	.380	.392	.402	.407	.401	.501	.298	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

EASTPORT, ME.

[λ=44° 54′ N.; φ=66° 59′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	29.974	.977	.975	.972	.974	.985	.004	.023	.034	.033	.015	.999	.988
Feb	29.660	.661	.662	.663	.670	.682	.700	.710	.714	.719	.710	.697	.686
Mar	29.741	.735	.728	.723	.728	.731	.738	.744	.748	.748	.743	.734	.725
Apr	29.960	.957	.958	.964	.974	.982	.991	.998	.000	.996	.988	.979	.969
May	29.923	.918	.915	.919	.926	.933	.940	.939	.938	.932	.924	.910	.899
June ...	29.820	.819	.818	.824	.834	.840	.845	.843	.839	.834	.830	.822	.814
July	29.860	.857	.858	.862	.868	.875	.883	.883	.883	.879	.876	.871	.865
Aug	29.914	.911	.910	.913	.921	.930	.938	.940	.942	.940	.933	.926	.920
Sept	29.942	.938	.939	.940	.949	.958	.965	.971	.973	.972	.963	.956	.948
Oct.	29.910	.905	.905	.908	.911	.918	.929	.937	.943	.942	.935	.926	.920
Nov	30.046	.051	.050	.052	.057	.062	.074	.083	.089	.088	.073	.060	.051
Dec	29.965	.967	.960	.952	.949	.953	.965	.979	.993	.995	.981	.970	.961
Year....	29.893	.891	.890	.891	.897	.904	.914	.921	.925	.923	.914	.904	.896

GALVESTON, TEX.

[λ=29° 18′ N.; φ=94° 50′ W.]

Jan	30.149	.141	.139	.133	.132	.134	.138	.154	.171	.183	.190	.180	.157
Feb	30.057	.051	.043	.036	.032	.034	.040	.055	.067	.080	.089	.088	.071
Mar	30.039	.036	.034	.025	.017	.019	.032	.045	.057	.065	.075	.074	.065
Apr	30.067	.061	.053	.050	.049	.054	.065	.076	.083	.091	.097	.100	.094
May	29.973	.970	.963	.957	.954	.960	.971	.981	.985	.989	.995	.998	.996
June ...	29.955	.951	.948	.945	.950	.958	.966	.977	.984	.984	.984	.985	.979
July	30.057	.053	.048	.045	.047	.054	.066	.075	.081	.083	.083	.082	.077
Aug	30.042	.031	.030	.029	.031	.041	.053	.062	.063	.069	.073	.073	.065
Sept	29.968	.965	.959	.957	.957	.962	.973	.981	.988	.993	.996	.999	.989
Oct.	30.019	.018	.016	.009	.006	.007	.015	.026	.039	.051	.055	.051	.037
Nov	30.089	.085	.081	.078	.074	.078	.084	.091	.097	.113	.124	.122	.104
Dec	30.216	.207	.201	.195	.194	.195	.197	.207	.211	.228	.236	.232	.214
Year....	30.053	.048	.043	.038	.037	.041	.050	.061	.069	.077	.083	.082	.071

HAVRE, MONT.

[λ=48° 34′ N.; φ=109° 40′ W.]

Jan	27.335	.336	.339	.336	.345	.347	.349	.353	.368	.385	.395	.401	.405
Feb	27.278	.275	.276	.271	.269	.269	.272	.277	.281	.293	.301	.310	.313
Mar	27.345	.344	.347	.343	.342	.339	.341	.344	.358	.365	.368	.370	.368
Apr	27.279	.283	.282	.281	.280	.281	.280	.283	.292	.293	.295	.293	.284
May	27.249	.249	.250	.246	.247	.247	.251	.254	.257	.257	.256	.250	.243
June ...	27.321	.320	.320	.323	.326	.329	.334	.342	.349	.353	.352	.345	.336
July	27.386	.387	.387	.387	.391	.397	.406	.415	.421	.426	.422	.419	.411
Aug	27.396	.400	.399	.400	.400	.402	.409	.415	.420	.422	.419	.412	.398
Sept	27.404	.403	.406	.403	.405	.402	.404	.408	.415	.419	.421	.420	.416
Oct.	27.378	.382	.384	.383	.384	.386	.391	.396	.403	.412	.416	.413	.409
Nov	27.428	.427	.419	.421	.423	.421	.422	.423	.442	.447	.451	.454	.454
Dec	27.301	.299	.295	.291	.296	.291	.287	.286	.292	.299	.309	.321	.324
Year....	27.342	.342	.342	.340	.342	.343	.346	.350	.358	.364	.367	.367	.363

KANSAS CITY, MO.

[λ=39° 5′ N.; φ=94° 37′ W.]

Jan	29.126	.122	.125	.127	.124	.119	.124	.129	.135	.144	.156	.163	.140
Feb	29.008	.006	.006	.002	.999	.001	.009	.018	.026	.032	.038	.038	.030
Mar	29.055	.053	.055	.051	.047	.049	.058	.066	.077	.082	.081	.075	.061
Apr	28.944	.947	.939	.938	.939	.945	.950	.963	.976	.980	.976	.972	.960
May	28.904	.897	.893	.891	.896	.904	.919	.925	.931	.932	.926	.922	.913
June ...	28.999	.998	.993	.992	.002	.011	.023	.029	.041	.040	.033	.035	.028
July	29.013	.040	.035	.032	.034	.042	.054	.058	.070	.071	.070	.070	.060
Aug	29.029	.025	.026	.033	.035	.042	.056	.065	.075	.081	.085	.083	.067
Sept	29.029	.031	.028	.029	.032	.041	.054	.064	.063	.072	.069	.063	.047
Oct.	29.037	.041	.041	.040	.041	.046	.052	.060	.073	.079	.079	.074	.056
Nov	29.100	.098	.097	.098	.094	.096	.097	.099	.115	.122	.131	.133	.117
Dec	29.171	.166	.165	.167	.165	.163	.166	.170	.176	.185	.191	.193	.173
Year....	29.037	.035	.034	.033	.034	.038	.047	.054	.063	.068	.070	.068	.054

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

EASTPORT, ME.

[H = 76 ft.; gravity correction, 0; local time, 32m fast.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1896.
.984	.986	.989	.997	.007	.017	.020	.018	.015	.007	.002	.000	.108	.875	Jan.
.678	.671	.674	.679	.684	.687	.688	.683	.673	.660	.653	.682	.844	.456	Feb.
.722	.718	.721	.731	.740	.751	.757	.759	.757	.750	.747	.738	.905	.546	Mar.
.961	.948	.947	.948	.951	.962	.971	.973	.975	.972	.971	.971	.060	.868	Apr.
.889	.884	.881	.881	.884	.892	.903	.909	.911	.912	.911	.911	.012	.811	May.
.807	.804	.802	.805	.810	.816	.822	.830	.831	.832	.832	.824	.917	.734	June.
.859	.854	.851	.851	.856	.862	.869	.873	.872	.869	.864	.867	.956	.763	July.
.912	.907	.904	.901	.904	.909	.913	.915	.916	.917	.914	.919	.974	.856	Aug.
.941	.932	.929	.929	.933	.938	.943	.945	.943	.942	.942	.947	.060	.827	Sept.
.916	.916	.916	.920	.924	.926	.929	.930	.926	.922	.921	.922	.035	.794	Oct.
.048	.053	.054	.061	.061	.067	.065	.066	.062	.057	.055	.062	.212	.882	Nov.
.959	.959	.966	.973	.979	.989	.992	.991	.990	.987	.983	.973	.125	.815	Dec.
.890	.886	.886	.890	.894	.901	.906	.908	.906	.902	.900	.901	.017	.769	Year.

GALVESTON, TEX.

[H = 42 ft.; gravity correction, —.04; local time, 1h 19m slow.]

.128	.111	.102	.102	.106	.110	.116	.126	.134	.136	.137	.138	.229	.054	Jan.
.048	.025	.013	.006	.008	.011	.020	.031	.043	.046	.055	.044	.138	.959	Feb.
.046	.028	.008	.999	.995	.997	.010	.021	.034	.045	.045	.034	.119	.949	Mar.
.087	.072	.058	.045	.040	.040	.041	.050	.062	.066	.068	.065	.125	.010	Apr.
.987	.978	.965	.955	.946	.942	.948	.961	.971	.977	.977	.971	.015	.927	May.
.970	.956	.941	.927	.918	.921	.926	.936	.948	.959	.962	.956	.001	.901	June.
.066	.054	.042	.029	.020	.018	.022	.031	.043	.052	.056	.054	.091	.011	July.
.053	.041	.024	.015	.009	.012	.014	.022	.035	.042	.042	.041	.086	.995	Aug.
.975	.959	.945	.940	.938	.938	.939	.956	.969	.972	.973	.966	.007	.925	Sept.
.012	.995	.986	.984	.984	.988	.999	.008	.016	.019	.018	.015	.064	.967	Oct.
.079	.061	.056	.055	.059	.072	.082	.090	.100	.104	.106	.087	.158	.028	Nov.
.182	.167	.157	.157	.163	.169	.183	.194	.202	.205	.204	.197	.272	.131	Dec.
.053	.037	.025	.018	.016	.018	.025	.036	.046	.052	.054	.047	.109	.988	Year.

HAVRE, MONT.

[H = 2,477 ft.; gravity correction, +.01; local time, 2h 19m slow.]

.385	.366	.352	.348	.347	.343	.342	.343	.344	.345	.347	.356	.492	.192	Jan.
.310	.300	.290	.289	.288	.288	.289	.292	.293	.295	.294	.288	.424	.135	Feb.
.362	.351	.342	.333	.327	.322	.322	.329	.335	.345	.351	.346	.486	.199	Mar.
.272	.258	.247	.238	.229	.228	.225	.231	.245	.259	.255	.266	.373	.146	Apr.
.235	.228	.223	.218	.217	.215	.216	.223	.234	.246	.249	.240	.312	.163	May.
.326	.317	.308	.298	.291	.281	.276	.278	.290	.308	.316	.318	.395	.239	June.
.401	.394	.383	.373	.362	.356	.356	.359	.364	.376	.381	.390	.455	.317	July.
.387	.375	.364	.351	.343	.339	.339	.350	.364	.380	.389	.386	.455	.305	Aug.
.408	.397	.390	.382	.378	.379	.381	.385	.395	.402	.405	.401	.512	.295	Sept.
.392	.375	.365	.358	.353	.350	.353	.357	.358	.365	.367	.380	.491	.270	Oct.
.448	.442	.439	.437	.439	.440	.447	.450	.454	.452	.453	.439	.566	.306	Nov.
.310	.302	.294	.292	.293	.296	.296	.301	.297	.295	.295	.298	.413	.189	Dec.
.353	.342	.333	.326	.322	.320	.320	.325	.331	.339	.342	.342	.448	.230	Year.

KANSAS CITY, MO.

[H = 963 ft.; gravity correction, —.01; local time 1h 18m slow.]

.116	.102	.101	.103	.104	.108	.117	.121	.126	.124	.127	.124	.228	.022	Jan.
.011	.994	.983	.982	.983	.992	.001	.004	.006	.005	.007	.007	.122	.880	Feb.
.044	.022	.010	.002	.001	.008	.019	.028	.040	.047	.054	.045	.167	.930	Mar.
.951	.936	.919	.906	.907	.905	.910	.917	.927	.936	.932	.941	.026	.853	Apr.
.904	.893	.881	.868	.865	.869	.877	.886	.900	.913	.912	.901	.985	.812	May.
.018	.008	.998	.986	.978	.972	.975	.979	.989	.999	.003	.005	.068	.932	June.
.049	.036	.025	.012	.003	.002	.002	.008	.015	.026	.032	.037	.092	.979	July.
.056	.036	.023	.012	.008	.999	.997	.011	.025	.033	.037	.039	.113	.958	Aug.
.032	.019	.007	.998	.999	.998	.002	.014	.027	.030	.032	.033	.119	.941	Sept.
.033	.017	.006	.000	.001	.002	.010	.017	.025	.027	.028	.037	.109	.966	Oct.
.098	.084	.082	.086	.091	.100	.108	.117	.119	.119	.119	.105	.234	.969	Nov.
.152	.132	.124	.123	.122	.125	.131	.137	.139	.140	.146	.155	.264	.056	Dec.
.039	.023	.013	.006	.005	.007	.012	.020	.028	.033	.036	.036	.127	.942	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

KEY WEST, FLA.

[λ = 24° 34′ N.; φ = 81° 49′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	30.137	.129	.122	.118	.115	.119	.133	.149	.167	.176	.174	.155	.130
Feb	30.088	.078	.068	.064	.064	.071	.083	.099	.116	.125	.128	.112	.092
Mar	30.094	.083	.070	.065	.066	.075	.087	.103	.114	.118	.122	.115	.096
Apr	30.138	.124	.115	.113	.115	.125	.141	.155	.166	.170	.167	.158	.146
May	30.046	.035	.025	.023	.025	.035	.050	.061	.067	.070	.070	.065	.053
June ...	30.011	.000	.992	.991	.995	.001	.014	.025	.031	.033	.033	.028	.019
July	30.102	.093	.082	.078	.080	.087	.100	.113	.119	.123	.124	.119	.110
Aug	30.061	.053	.043	.041	.042	.050	.066	.076	.083	.088	.087	.082	.071
Sept	29.954	.945	.933	.929	.931	.938	.953	.965	.976	.982	.982	.973	.958
Oct.	29.977	.968	.957	.954	.957	.967	.981	.994	.005	.008	.006	.995	.977
Nov	30.062	.055	.046	.045	.043	.047	.059	.074	.087	.093	.091	.078	.055
Dec	30.108	.100	.088	.085	.084	.085	.096	.113	.132	.141	.141	.126	.100
Year....	30.065	.055	.045	.042	.043	.050	.064	.077	.089	.094	.094	.084	.067

MARQUETTE, MICH.

[λ = 46° 34′ N.; φ = 87° 24′ W.]

Jan	29.260	.260	.267	.265	.258	.261	.266	.269	.275	.283	.290	.281	.265
Feb	29.042	.047	.053	.052	.056	.060	.065	.070	.071	.073	.072	.068	.058
Mar	29.224	.220	.221	.217	.214	.216	.220	.225	.224	.226	.227	.225	.221
Apr	29.199	.194	.193	.191	.189	.194	.201	.201	.201	.195	.190	.187	.182
May	29.077	.075	.075	.074	.073	.078	.084	.085	.089	.082	.081	.081	.080
June ...	29.165	.159	.158	.160	.167	.170	.177	.184	.186	.185	.183	.179	.172
July	29.189	.184	.181	.184	.187	.191	.198	.201	.203	.201	.198	.198	.192
Aug	29.155	.154	.153	.152	.154	.160	.164	.167	.169	.167	.165	.160	.153
Sept	29.172	.171	.172	.172	.176	.181	.188	.188	.194	.196	.194	.191	.185
Oct.	29.191	.191	.188	.188	.191	.196	.201	.206	.210	.210	.208	.205	.193
Nov	29.181	.182	.190	.188	.190	.193	.194	.199	.204	.205	.207	.200	.186
Dec	29.260	.261	.264	.259	.251	.247	.248	.252	.255	.259	.263	.256	.243
Year....	29.176	.175	.176	.175	.176	.179	.184	.187	.190	.190	.190	.186	.178

MEMPHIS, TENN.

[λ = 35° 9′ N.; φ = 90° 3′ W.]

Jan	29.742	.742	.745	.745	.740	.742	.749	.760	.772	.780	.789	.783	.762
Feb	29.611	.606	.603	.599	.598	.604	.615	.632	.642	.650	.650	.650	.632
Mar	29.653	.647	.643	.636	.634	.641	.651	.663	.679	.690	.695	.693	.682
Apr	29.666	.662	.661	.661	.665	.672	.686	.695	.707	.712	.716	.712	.699
May	29.576	.568	.566	.567	.570	.584	.595	.603	.614	.617	.615	.609	.598
June ...	29.568	.563	.559	.561	.566	.575	.586	.597	.607	.610	.613	.611	.600
July	29.642	.644	.642	.642	.649	.658	.670	.684	.691	.692	.695	.689	.680
Aug	29.640	.635	.630	.632	.635	.645	.658	.669	.678	.682	.684	.681	.673
Sept	29.619	.618	.615	.617	.617	.623	.635	.647	.655	.662	.667	.663	.651
Oct	29.650	.648	.647	.646	.648	.653	.661	.673	.690	.695	.695	.692	.673
Nov	29.749	.750	.754	.758	.756	.763	.772	.782	.796	.808	.811	.802	.785
Dec	29.815	.811	.812	.814	.813	.813	.815	.825	.834	.845	.854	.846	.820
Year....	29.661	.658	.656	.656	.658	.664	.674	.686	.697	.704	.707	.703	.688

NEW ORLEANS, LA.

[λ = 29° 58′ N.; φ = 90° 4′ W.]

Jan	30.130	.127	.126	.121	.122	.121	.130	.144	.158	.170	.174	.164	.132
Feb	30.030	.028	.020	.015	.012	.017	.027	.038	.050	.060	.063	.054	.030
Mar	30.042	.037	.032	.030	.033	.045	.053	.060	.078	.084	.087	.080	.062
Apr	30.094	.084	.078	.079	.083	.093	.104	.109	.125	.132	.135	.129	.115
May	29.994	.988	.985	.983	.988	.993	.005	.007	.019	.022	.023	.017	.007
June ...	29.944	.938	.935	.937	.944	.952	.965	.971	.981	.979	.979	.975	.965
July	30.048	.041	.038	.040	.047	.061	.070	.082	.086	.092	.088	.082	.074
Aug	30.026	.017	.015	.016	.023	.033	.044	.046	.053	.056	.056	.056	.043
Sept	29.953	.948	.946	.946	.950	.960	.970	.977	.986	.995	.996	.988	.973
Oct.	29.992	.991	.988	.986	.990	.997	.004	.012	.028	.037	.038	.029	.008
Nov	30.091	.085	.081	.080	.081	.083	.090	.096	.109	.120	.125	.118	.099
Dec	30.174	.171	.167	.165	.164	.167	.178	.186	.201	.213	.216	.203	.177
Year....	30.043	.038	.034	.033	.036	.044	.053	.061	.073	.080	.082	.075	.057

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

KEY WEST, FLA.

[H = 22 ft.; gravity correction, —.05; local time, 27m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1896.
.110	.101	.100	.103	.111	.119	.131	.140	.145	.146	.141	.132	.187	.084	Jan.
.069	.055	.049	.049	.055	.063	.075	.084	.089	.090	.087	.081	.153	.015	Feb.
.078	.064	.055	.057	.064	.076	.087	.098	.105	.109	.106	.088	.148	.034	Mar.
.130	.115	.106	.103	.105	.112	.122	.135	.142	.145	.142	.133	.175	.091	Apr.
.041	.028	.017	.014	.015	.022	.031	.045	.056	.060	.056	.042	.078	.005	May
.010	.997	.986	.982	.987	.001	.014	.022	.028	.032	.025	.011	.054	.969	June.
.099	.084	.072	.068	.073	.085	.097	.104	.109	.111	.107	.097	.136	.058	July.
.060	.044	.033	.028	.029	.039	.051	.062	.068	.071	.067	.058	.096	.019	Aug.
.941	.924	.917	.917	.922	.933	.951	.960	.966	.967	.962	.949	.993	.906	Sept.
.958	.951	.946	.949	.957	.965	.979	.989	.993	.990	.982	.975	.021	.930	Oct.
.034	.027	.026	.029	.042	.057	.073	.079	.080	.076	.069	.059	.103	.015	Nov.
.085	.076	.075	.080	.089	.101	.113	.123	.127	.126	.120	.105	.161	.053	Dec.
.051	.039	.032	.032	.037	.048	.061	.070	.076	.077	.072	.061	.109	.015	Year.

MARQUETTE, MICH.

[H = 734 ft.; gravity correction, —.02; local time, 49m slow.]

.256	.253	.257	.258	.263	.268	.268	.268	.266	.266	.266	.266	.390	.138	Jan.
.043	.034	.032	.037	.043	.051	.054	.051	.053	.050	.050	.054	.189	.904	Feb.
.210	.199	.197	.197	.200	.208	.213	.219	.220	.222	.222	.216	.361	.069	Mar.
.176	.171	.168	.169	.174	.180	.182	.191	.191	.189	.189	.187	.295	.081	Apr.
.080	.074	.071	.071	.073	.075	.077	.088	.093	.093	.093	.080	.180	.969	May.
.162	.153	.150	.147	.147	.150	.152	.155	.161	.163	.166	.165	.236	.090	June.
.187	.183	.179	.175	.171	.172	.173	.177	.183	.186	.188	.187	.249	.119	July.
.148	.142	.138	.141	.141	.142	.145	.154	.155	.155	.159	.154	.250	.051	Aug.
.177	.171	.166	.166	.168	.169	.174	.180	.179	.177	.175	.178	.282	.060	Sept.
.181	.176	.175	.179	.182	.187	.190	.188	.187	.183	.177	.191	.259	.107	Oct.
.182	.178	.183	.191	.196	.201	.199	.201	.202	.201	.204	.194	.343	.028	Nov.
.233	.233	.239	.248	.254	.259	.259	.259	.258	.257	.257	.253	.374	.121	Dec.
.170	.164	.163	.165	.168	.172	.174	.178	.179	.178	.179	.177	.284	.061	Year.

MEMPHIS, TENN.

[H = 399 ft.; gravity correction, —.03; local time, 1h slow.]

.730	.714	.706	.705	.708	.716	.721	.725	.728	.733	.732	.740	.830	.643	Jan.
.606	.587	.579	.577	.582	.592	.601	.602	.601	.606	.607	.610	.716	.496	Feb.
.666	.645	.632	.621	.623	.626	.635	.645	.653	.659	.657	.653	.755	.548	Mar.
.682	.662	.648	.635	.632	.631	.635	.648	.662	.662	.663	.670	.729	.601	Apr.
.589	.575	.558	.548	.544	.544	.551	.556	.569	.574	.574	.578	.635	.517	May.
.586	.575	.563	.551	.550	.552	.560	.567	.576	.584	.583	.578	.635	.522	June.
.659	.640	.622	.613	.604	.603	.609	.619	.630	.636	.636	.648	.699	.593	July.
.658	.640	.619	.603	.595	.591	.602	.615	.631	.638	.642	.641	.699	.580	Aug.
.638	.619	.601	.592	.588	.587	.591	.604	.613	.620	.622	.623	.689	.560	Sept.
.649	.629	.622	.616	.620	.624	.630	.636	.644	.649	.648	.652	.719	.587	Oct.
.764	.743	.734	.732	.733	.736	.746	.753	.757	.762	.767	.763	.845	.675	Nov.
.795	.778	.771	.766	.772	.777	.785	.789	.792	.795	.797	.806	.892	.721	Dec.
.668	.651	.638	.630	.629	.632	.639	.647	.655	.660	.661	.664	.737	.587	Year.

NEW ORLEANS, LA.

[H = 54 ft.; gravity correction, —.04; local time, 1h slow.]

.105	.096	.090	.092	.096	.104	.115	.122	.128	.130	.127	.126	.209	.059	Jan.
.003	.982	.973	.968	.973	.982	.996	.009	.013	.022	.024	.016	.117	.922	Feb.
.042	.028	.017	.006	.008	.012	.017	.031	.043	.045	.046	.042	.128	.960	Mar.
.104	.089	.075	.071	.070	.073	.078	.090	.098	.097	.094	.096	.148	.042	Apr.
.998	.986	.976	.968	.964	.967	.973	.986	.998	.000	.001	.994	.036	.949	May.
.953	.939	.929	.921	.914	.919	.920	.934	.947	.955	.956	.948	.997	.895	June.
.062	.044	.029	.019	.015	.019	.017	.032	.042	.048	.049	.051	.100	.000	July.
.034	.022	.007	.999	.995	.001	.999	.015	.030	.033	.031	.027	.069	.979	Aug.
.956	.940	.932	.928	.930	.935	.940	.956	.966	.967	.964	.958	.004	.914	Sept.
.987	.970	.959	.956	.960	.966	.969	.981	.988	.994	.991	.993	.048	.939	Oct.
.077	.061	.059	.060	.066	.075	.087	.096	.104	.104	.102	.090	.145	.042	Nov.
.150	.136	.130	.131	.137	.148	.158	.166	.173	.175	.174	.169	.237	.105	Dec.
.039	.024	.015	.010	.011	.017	.022	.035	.044	.048	.047	.042	.103	.984	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

NEW YORK, N. Y.

[λ = 40° 43′ N.; φ = 74° 0′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	29.816	.817	.817	.813	.812	.812	.821	.833	.844	.846	.835	.818	.800
Feb	29.557	.556	.550	.543	.547	.553	.560	.568	.566	.560	.550	.526	.501
Mar	29.621	.618	.611	.609	.613	.618	.629	.634	.635	.631	.622	.612	.597
Apr	29.786	.780	.777	.774	.780	.790	.803	.808	.810	.807	.798	.787	.777
May	29.705	.701	.695	.694	.695	.704	.712	.715	.710	.708	.701	.692	.680
June ...	29.652	.648	.648	.648	.654	.661	.669	.672	.668	.668	.665	.660	.651
July....	29.693	.686	.683	.685	.692	.701	.711	.717	.716	.715	.714	.710	.704
Aug	29.708	.704	.705	.707	.714	.722	.730	.732	.733	.729	.724	.717	.710
Sept....	29.708	.702	.701	.704	.710	.718	.726	.730	.735	.734	.727	.719	.707
Oct.....	29.697	.692	.690	.691	.693	.698	.706	.715	.716	.715	.709	.697	.685
Nov	29.842	.846	.848	.848	.852	.855	.863	.871	.877	.875	.861	.848	.834
Dec	29.807	.808	.807	.862	.801	.807	.821	.832	.843	.849	.841	.830	.820
Year....	29.716	.713	.711	.710	.714	.720	.729	.736	.738	.736	.729	.718	.706

PHILADELPHIA, PA.

[λ = 39° 57′ N.; φ = 75° 9′ W.]

Jan	30.055	.061	.061	.056	.057	.061	.071	.079	.087	.094	.084	.064	.049
Feb	29.807	.806	.801	.798	.797	.802	.808	.815	.819	.817	.809	.786	.764
Mar	29.879	.873	.867	.869	.872	.878	.890	.894	.900	.896	.886	.878	.864
Apr	30.015	.011	.009	.010	.016	.025	.034	.044	.048	.048	.037	.025	.011
May	29.921	.920	.916	.917	.924	.930	.939	.948	.945	.940	.932	.919	.907
June ...	29.864	.864	.864	.867	.874	.878	.884	.891	.890	.890	.885	.879	.868
July....	29.917	.911	.907	.910	.915	.921	.932	.942	.944	.943	.939	.931	.918
Aug	29.922	.920	.918	.917	.923	.930	.940	.947	.949	.948	.942	.932	.922
Sept....	29.930	.926	.926	.928	.935	.941	.953	.958	.962	.961	.954	.945	.929
Oct.....	29.924	.921	.915	.918	.923	.928	.938	.949	.953	.953	.945	.931	.916
Nov	30.082	.084	.083	.086	.089	.094	.105	.112	.116	.113	.100	.086	.071
Dec	30.051	.057	.059	.053	.055	.061	.075	.082	.099	.103	.094	.082	.061
Year....	29.947	.946	.944	.944	.949	.954	.964	.972	.976	.976	.967	.955	.940

PITTSBURG, PA.

[λ = 40° 32′ N.; φ = 80° 2′ W.]

Jan	29.245	.244	.247	.246	.244	.245	.251	.264	.270	.278	.275	.261	.241
Feb	29.039	.038	.034	.031	.031	.030	.030	.037	.036	.032	.028	.021	.005
Mar	29.143	.140	.131	.126	.127	.132	.145	.156	.156	.155	.148	.144	.135
Apr	29.210	.209	.209	.213	.217	.228	.242	.249	.250	.246	.239	.230	.217
May....	29.133	.129	.128	.133	.140	.148	.158	.165	.166	.163	.158	.150	.139
June ...	29.117	.116	.115	.114	.121	.128	.139	.144	.145	.142	.137	.132	.121
July....	29.173	.173	.169	.172	.176	.182	.193	.203	.201	.196	.193	.186	.175
Aug	29.188	.187	.186	.186	.195	.206	.216	.221	.223	.220	.216	.209	.199
Sept....	29.160	.158	.160	.159	.163	.168	.176	.183	.182	.179	.172	.165	.157
Oct.....	29.165	.167	.168	.171	.176	.185	.198	.206	.210	.209	.207	.199	.184
Nov	29.265	.266	.269	.272	.278	.284	.294	.297	.301	.304	.303	.292	.278
Dec	29.270	.275	.281	.282	.283	.287	.296	.299	.303	.308	.310	.298	.279
Year....	29.176	.175	.175	.175	.179	.185	.195	.202	.204	.203	.199	.191	.178

PORTLAND, OREG.

[λ = 45° 32′ N.; φ = 122° 43′ W.]

Jan	29.778	.779	.772	.767	.769	.768	.760	.756	.753	.755	.762	.774	.784
Feb	30.010	.012	.013	.013	.017	.019	.018	.018	.020	.025	.032	.036	.044
Mar	29.895	.899	.903	.905	.906	.904	.904	.908	.908	.912	.919	.922	.923
Apr	29.811	.812	.813	.810	.804	.802	.791	.798	.799	.806	.808	.810	.808
May....	29.868	.872	.872	.872	.871	.872	.874	.879	.885	.889	.893	.894	.892
June ...	29.902	.908	.911	.912	.913	.915	.919	.925	.929	.931	.932	.931	.926
July....	29.822	.828	.835	.840	.846	.849	.856	.865	.870	.875	.875	.873	.868
Aug	29.856	.861	.867	.867	.871	.871	.875	.879	.886	.892	.895	.897	.895
Sept....	29.847	.851	.856	.859	.861	.862	.864	.868	.874	.881	.888	.891	.888
Oct.....	29.867	.869	.872	.878	.878	.877	.869	.883	.888	.891	.898	.902	.897
Nov	29.864	.864	.866	.868	.871	.873	.873	.875	.874	.880	.889	.894	.895
Dec	29.855	.857	.856	.855	.853	.855	.848	.846	.846	.851	.856	.867	.882
Year....	29.865	.868	.870	.870	.872	.872	.872	.875	.878	.882	.887	.891	.892

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

NEW YORK, N. Y.

[H = 314 ft.; gravity correction, —.01; local time, 4m fast.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1896.
.792	.794	.796	.804	.813	.825	.833	.835	.836	.837	.834	.820	.920	.724	Jan.
.483	.481	.484	.491	.501	.510	.518	.522	.525	.526	.526	.529	.723	.345	Feb.
.584	.577	.577	.584	.593	.605	.619	.631	.639	.648	.648	.615	.791	.463	Mar.
.763	.754	.751	.753	.754	.760	.771	.782	.788	.792	.793	.781	.865	.702	Apr.
.669	.660	.657	.657	.659	.667	.675	.691	.695	.699	.698	.689	.778	.606	May.
.643	.636	.630	.628	.633	.638	.643	.656	.663	.667	.667	.653	.729	.581	June.
.695	.686	.680	.677	.679	.684	.686	.696	.699	.700	.696	.696	.776	.614	July.
.701	.692	.687	.687	.686	.687	.694	.705	.709	.712	.709	.709	.765	.648	Aug.
.693	.683	.678	.679	.683	.690	.697	.704	.706	.707	.704	.706	.793	.603	Sept.
.679	.676	.679	.682	.690	.696	.705	.713	.714	.710	.707	.698	.780	.613	Oct.
.826	.827	.831	.839	.846	.855	.858	.862	.863	.863	.861	.852	.958	.738	Nov.
.816	.815	.816	.822	.827	.829	.830	.830	.829	.828	.823	.822	.932	695	Dec.
.695	.690	.689	.692	.697	.704	.711	.719	.722	.724	.722	.714	.818	.611	Year.

PHILADELPHIA, PA.

[H = 117 ft.; gravity correction, —.01.]

.040	.039	.037	.045	.055	.064	.069	.073	.075	.072	.068	.063	.161	.965	Jan.
.742	.732	.730	.736	.746	.758	.765	.770	.777	.777	.778	.781	.964	.602	Feb.
.849	.840	.835	.837	.847	.860	.875	.888	.896	.900	.904	.874	.044	.720	Mar.
.998	.985	.976	.976	.978	.986	.999	.009	.015	.016	.019	.012	.093	.933	Apr.
.891	.877	.875	.873	.875	.881	.890	.902	.908	.911	.913	.910	.995	.828	May.
.858	.849	.842	.836	.841	.851	.858	.870	.877	.879	.878	.868	.940	.796	June.
.910	.900	.893	.889	.891	.897	.903	.912	.915	.915	.916	.915	.991	.838	July.
.911	.897	.894	.891	.891	.895	.906	.915	.923	.924	.923	.920	.978	.862	Aug.
.914	.902	.892	.893	.897	.902	.913	.921	.923	.926	.924	.927	.010	.826	Sept.
.905	.901	.900	.905	.914	.923	.930	.937	.939	.935	.933	.926	.006	.844	Oct.
.063	.062	.066	.071	.079	.086	.092	.098	.098	.100	.098	.089	.191	.983	Nov.
.056	.054	.056	.059	.059	.067	.065	.064	.065	.064	.061	.067	.168	.939	Dec.
.928	.920	.916	.918	.923	.931	.939	.947	.951	.952	.951	.946	.045	.845	Year.

PITTSBURG, PA.

[H = 842 ft.; gravity correction, —.01; local time, 20m slow.]

.231	.231	.237	.242	.249	.255	.260	.260	.258	.254	.252	.252	.343	.049	Jan.
.991	.988	.994	.003	.014	.020	.026	.030	.026	.026	.028	.022	.160	.878	Feb.
.129	.126	.123	.125	.132	.139	.148	.153	.156	.159	.157	.141	.288	.994	Mar.
.207	.193	.185	.181	.182	.188	.197	.203	.204	.205	.207	.213	.294	.126	Apr.
.125	.113	.105	.105	.104	.107	.111	.120	.127	.131	.132	.133	.201	.061	May.
.112	.103	.097	.089	.089	.096	.101	.105	.112	.118	.121	.117	.187	.055	June.
.166	.157	.150	.141	.140	.146	.153	.160	.164	.168	.169	.171	.235	.099	July.
.190	.180	.167	.164	.160	.162	.166	.176	.180	.183	.185	.190	.249	.128	Aug.
.146	.137	.129	.126	.127	.135	.144	.152	.152	.151	.152	.156	.240	.079	Sept.
.171	.166	.162	.164	.167	.171	.171	.174	.174	.173	.172	.180	.250	.098	Oct.
.269	.267	.268	.269	.275	.278	.280	.280	.282	.280	.279	.280	.364	.184	Nov.
.268	.259	.257	.257	.261	.265	.270	.271	.269	.271	.270	.279	.376	.167	Dec.
.167	.160	.156	.156	.158	.164	.169	.174	.175	.177	.177	.178	.266	.076	Year.

PORTLAND, OREG.

[H = 153 ft.; gravity correction, 0; local time, 3h 11m slow.]

.787	.773	.765	.763	.766	.765	.763	.765	.768	.771	.774	.768	.895	.633	Jan.
.043	.030	.018	.006	.000	.996	.993	.996	.997	.999	.004	.015	.106	.909	Feb.
.923	.914	.903	.889	.883	.878	.878	.881	.888	.898	.905	.902	.985	.816	Mar.
.800	.792	.787	.780	.773	.770	.771	.774	.780	.787	.792	.795	.886	.708	Apr.
.889	.878	.875	.868	.861	.856	.853	.853	.856	.865	.875	.873	.963	.773	May.
.923	.914	.905	.895	.887	.876	.870	.870	.875	.885	.896	.906	.969	.835	June.
.861	.845	.835	.816	.804	.789	.784	.780	.782	.791	.805	.833	.882	.768	July.
.890	.881	.872	.859	.850	.841	.835	.833	.835	.846	.853	.867	.910	.812	Aug.
.885	.866	.855	.838	.829	.824	.822	.824	.832	.841	.848	.856	.918	.777	Sept.
.894	.876	.866	.853	.846	.840	.840	.843	.846	.852	.859	.871	.945	.782	Oct.
.892	.880	.871	.860	.858	.855	.853	.853	.855	.856	.858	.870	.971	.751	Nov.
.885	.874	.863	.852	.851	.848	.850	.850	.852	.855	.857	.857	.955	.759	Dec.
.889	.877	.868	.857	.851	.845	.843	.844	.847	.854	.860	.868	.949	.777	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

ST. LOUIS, MO.

[λ=38° 38′ N.; φ=90° 12′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	29.558	.551	.554	.553	.550	.551	.557	.563	.573	.581	.586	.579	.554
Feb	29.419	.412	.409	.406	.404	.407	.412	.418	.428	.432	.437	.434	.421
Mar	29.470	.473	.475	.472	.474	.485	.497	.509	.515	.518	.517	.508	.498
Apr	29.433	.432	.433	.434	.439	.449	.467	.477	.482	.480	.479	.472	.450
May	29.362	.358	.360	.361	.368	.382	.394	.396	.401	.402	.395	.389	.379
June	29.389	.387	.386	.389	.395	.406	.417	.429	.433	.433	.431	.427	.419
July	29.447	.446	.444	.445	.451	.458	.470	.482	.486	.488	.487	.483	.475
Aug	29.463	.464	.460	.458	.459	.467	.479	.490	.492	.494	.495	.492	.484
Sept	29.438	.439	.438	.438	.443	.449	.461	.466	.470	.475	.474	.465	.454
Oct	29.454	.455	.455	.455	.461	.469	.478	.488	.495	.497	.493	.485	.470
Nov	29.550	.550	.555	.556	.555	.559	.564	.572	.578	.580	.583	.575	.556
Dec	29.611	.604	.606	.609	.604	.603	.608	.615	.620	.625	.630	.624	.603
Year	29.466	.464	.465	.465	.467	.474	.484	.492	.498	.500	.501	.494	.480

ST. PAUL, MINN.

[λ=44° 58′ N.; φ=93° 3′ W.]

Jan	29.211	.216	.222	.225	.223	.219	.216	.215	.214	.219	.220	.220	.204
Feb	29.032	.038	.047	.048	.046	.049	.053	.053	.060	.063	.062	.060	.049
Mar	29.124	.127	.131	.125	.121	.120	.122	.126	.128	.132	.135	.132	.122
Apr	29.039	.044	.041	.042	.041	.040	.050	.058	.053	.050	.054	.053	.041
May	28.949	.950	.947	.949	.953	.956	.967	.975	.978	.977	.977	.975	.967
June	29.077	.077	.078	.077	.082	.091	.097	.101	.102	.101	.098	.091	.084
July	29.123	.122	.120	.120	.123	.130	.139	.146	.150	.146	.142	.140	.132
Aug	29.082	.083	.082	.085	.093	.098	.107	.113	.114	.114	.113	.107	.098
Sept	29.106	.106	.107	.108	.112	.115	.122	.129	.132	.135	.138	.134	.121
Oct	29.103	.109	.111	.112	.112	.114	.118	.118	.126	.129	.127	.123	.110
Nov	29.157	.160	.163	.163	.162	.164	.166	.164	.168	.171	.171	.171	.155
Dec	29.207	.203	.199	.203	.198	.194	.193	.191	.194	.198	.208	.214	.198
Year	29.101	.103	.104	.105	.106	.108	.112	.116	.118	.120	.120	.118	.107

SALT LAKE CITY, UTAH.

[λ=40° 46′ N.; φ=111° 54′ W.]

Jan	25.708	.707	.703	.705	.708	.702	.699	.701	.707	.714	.720	.728	.727
Feb	25.779	.777	.772	.767	.764	.757	.755	.765	.770	.777	.784	.785	.787
Mar	25.607	.613	.611	.615	.610	.607	.607	.610	.622	.630	.639	.643	.643
Apr	25.535	.539	.535	.536	.535	.533	.532	.535	.544	.548	.548	.547	.541
May	25.566	.568	.563	.562	.562	.559	.561	.566	.578	.583	.588	.588	.588
June	25.635	.633	.628	.626	.627	.630	.641	.650	.659	.668	.670	.672	.668
July	25.665	.670	.673	.674	.671	.673	.683	.693	.705	.711	.713	.714	.712
Aug	25.685	.690	.693	.695	.698	.699	.707	.714	.728	.736	.739	.740	.736
Sept	25.622	.627	.629	.629	.633	.634	.640	.643	.655	.658	.663	.664	.657
Oct	25.665	.666	.670	.671	.670	.669	.675	.677	.685	.693	.699	.697	.689
Nov	25.658	.657	.657	.655	.657	.655	.662	.663	.672	.682	.688	.688	.688
Dec	25.809	.809	.805	.804	.805	.800	.798	.793	.796	.799	.807	.813	.815
Year	25.661	.663	.662	.662	.662	.660	.663	.668	.677	.683	.688	.690	.688

SAN DIEGO, CAL.

[λ=32° 43′ N.; φ=117° 10′ W.]

Jan	30.011	.010	.008	.003	.000	.997	.990	.990	.000	.005	.024	.035	.039
Feb	30.034	.036	.037	.033	.027	.016	.010	.010	.018	.032	.045	.051	.051
Mar	29.974	.975	.974	.972	.961	.948	.949	.951	.959	.968	.983	.993	.996
Apr	29.989	.989	.988	.983	.976	.970	.967	.971	.984	.995	.002	.009	.011
May	29.934	.934	.930	.921	.916	.909	.906	.910	.918	.926	.934	.937	.940
June	29.865	866	.863	.856	.848	.844	.842	.845	.852	.862	.872	.874	.877
July	29.899	.900	.900	.896	.893	.889	.887	.889	.899	.907	.914	.917	.919
Aug	29.936	.938	.938	.935	.928	.924	.923	.926	.935	.942	.952	.955	.955
Sept	29.843	.844	.844	.843	.839	.835	.832	.836	.846	.853	.861	.868	.871
Oct	29.873	.871	.871	.871	.865	.859	.861	.868	.874	.885	.896	.901	.902
Nov	29.978	.977	.975	.971	.966	.964	.962	.962	.969	.976	.994	.003	.014
Dec	30.078	.075	.073	.070	.069	.066	.062	.059	.064	.075	.086	.096	.100
Year	29.951	.951	.950	.946	.941	.935	.933	.935	.943	.952	.964	.970	.973

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

ST. LOUIS, MO.

[H = 567 ft.; gravity correction, —.02; local time, 1h 1m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1896.
.535	.521	.524	.526	.530	.537	.543	.549	.553	.556	.557	.552	.653	.451	Jan.
.401	.386	.383	.386	.390	.399	.408	.410	.416	.418	.411	.410	.531	.290	Feb.
.476	.457	.451	.445	.442	.449	.455	.462	.470	.472	.474	.478	.593	.347	Mar.
.434	.417	.405	.397	.395	.398	.404	.416	.427	.429	.432	.437	.512	.353	Apr.
.368	.360	.344	.335	.330	.338	.344	.354	.365	.368	.371	.368	.448	.283	May.
.409	.398	.385	.377	.374	.375	.373	.380	.392	.399	.401	.400	.460	.337	June.
.462	.450	.436	.428	.419	.421	.426	.427	.434	.439	.441	.452	.505	.394	July.
.474	.461	.448	.439	.432	.431	.433	.446	.456	.464	.467	.464	.527	.401	Aug.
.439	.421	.412	.410	.408	.410	.417	.430	.433	.436	.437	.440	.516	.355	Sept.
.451	.439	.431	.425	.425	.431	.435	.442	.448	.451	.450	.458	.526	.388	Oct.
.537	.527	.525	.527	.530	.541	.547	.553	.558	.567	.570	.555	.651	.454	Nov.
.585	.571	.566	.569	.570	.575	.581	.589	.591	.592	.593	.598	.694	.495	Dec.
.464	.451	.442	.439	.437	.442	.447	.455	.462	.466	.467	.468	.551	.379	Year.

ST. PAUL, MINN.

[H = 837 ft.; gravity correction, 0; local time, 1h 12m slow.]

.185	.176	.179	.185	.195	.201	.207	.210	.213	.213	.215	.208	.327	.091	Jan.
.031	.015	.008	.007	.012	.021	.028	.027	.030	.031	.033	.038	.165	.903	Feb.
.109	.096	.087	.083	.082	.087	.095	.102	.107	.108	.109	.113	.272	.954	Mar.
.032	.028	.017	.010	.014	.011	.009	.020	.028	.035	.039	.035	.135	.937	Apr.
.960	.955	.945	.939	.935	.931	.934	.942	.953	.961	.961	.956	.039	.864	May.
.078	.069	.063	.057	.055	.050	.047	.053	.062	.065	.075	.076	.147	.995	June.
.122	.115	.106	.097	.088	.083	.080	.086	.096	.102	.107	.117	.178	.043	July.
.090	.082	.074	.067	.058	.055	.055	.063	.074	.080	.084	.086	.171	.991	Aug.
.108	.095	.085	.078	.076	.078	.083	.091	.097	.100	.103	.107	.219	.998	Sept.
.093	.080	.070	.067	.070	.074	.079	.082	.084	.086	.087	.099	.187	.999	Oct.
.140	.127	.128	.134	.143	.151	.157	.161	.168	.173	.178	.158	.312	.003	Nov.
.184	.175	.174	.178	.184	.182	.183	.183	.180	.178	.178	.191	.307	.065	Dec.
.094	.084	.078	.075	.076	.077	.080	.085	.091	.094	.097	.099	.205	.987	Year.

SALT LAKE CITY, UTAH.

[H = 4,345 ft.; gravity correction, —.01; local time, 2h 27m slow.]

.716	.699	.688	.682	.686	.686	.691	.697	.701	.703	.708	.704	.792	.616	Jan.
.778	.761	.745	.738	.734	.733	.736	.742	.748	.750	.753	.761	.842	.672	Feb.
.641	.632	.621	.615	.609	.605	.609	.609	.615	.625	.627	.619	.711	.520	Mar.
.530	.518	.509	.496	.492	.494	.496	.501	.510	.521	.520	.525	.619	.426	Apr.
.584	.573	.566	.559	.555	.552	.550	.547	.543	.560	.563	.566	.638	.477	May.
.664	.652	.641	.632	.623	.613	.608	.608	.611	.626	.635	.638	.701	.567	June.
.704	.692	.680	.668	.656	.646	.645	.645	.648	.660	.665	.678	.723	.621	July.
.724	.707	.692	.675	.664	.651	.650	.649	.657	.670	.675	.695	.747	.628	Aug.
.646	.634	.628	.615	.609	.602	.600	.602	.610	.620	.626	.631	.694	.561	Sept.
.677	.660	.647	.640	.634	.630	.628	.634	.640	.644	.651	.663	.723	.593	Oct.
.673	.655	.648	.648	.653	.658	.661	.665	.667	.667	.668	.664	.754	.557	Nov.
.801	.783	.773	.770	.773	.777	.779	.785	.786	.793	.795	.794	.865	.726	Dec.
.678	.664	.653	.645	.641	.637	.638	.640	.645	.653	.657	.662	.734	.580	Year.

SAN DIEGO, CAL.

[H = 69 ft.; gravity correction, —.03; local time, 2h 49m slow.]

.031	.005	.984	.969	.967	.969	.975	.988	.995	.006	.009	.000	.053	.951	Jan.
.048	.032	.009	.989	.983	.981	.986	.994	.006	.015	.023	.019	.074	.967	Feb.
.992	.974	.961	.945	.936	.935	.936	.944	.959	.968	.976	.964	.021	.905	Mar.
.008	.000	.989	.976	.967	.964	.961	.962	.969	.981	.987	.983	.035	.937	Apr.
.937	.931	.926	.917	.908	.902	.899	.902	.909	.920	.926	.921	.969	.877	May.
.878	.876	.872	.870	.864	.852	.843	.843	.847	.853	.863	.860	.904	.817	June.
.916	.910	.903	.895	.885	.874	.865	.866	.871	.879	.890	.894	.929	.858	July.
.953	.943	.937	.925	.915	.908	.903	.902	.906	.914	.928	.930	.968	.889	Aug.
.865	.854	.844	.834	.825	.818	.817	.819	.822	.833	.841	.841	.887	.797	Sept.
.895	.879	.862	.849	.842	.840	.842	.846	.854	.864	.868	.868	.915	.823	Oct.
.010	.993	.974	.960	.957	.958	.961	.966	.975	.982	.987	.976	.032	.924	Nov.
.096	.070	.052	.040	.038	.037	.040	.045	.052	.060	.066	.065	.125	.005	Dec.
.969	.956	.943	.931	.924	.920	.919	.923	.930	.945	.947	.943	.993	.896	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

SAN FRANCISCO, CAL.

[λ = 37° 48′ N.; φ = 122° 26′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p.m.
Jan	29.925	.925	.919	.913	.914	.912	904	.900	.904	.912	.918	.932	.945
Feb	30.042	.046	.048	.042	.041	.036	.032	.034	.040	.046	.058	.066	.072
Mar	29.919	.922	.923	.923	.916	.905	.903	.903	.909	.917	.929	.936	.944
Apr	29.919	.916	.916	.912	.905	.900	.897	.898	.913	.928	.934	.939	.946
May....	29.916	.917	.914	.910	.904	.898	.895	.895	.919	.928	.932	.934	.934
June ...	29.815	.813	.809	.805	.800	.798	.803	.811	.823	.835	.839	.839	.841
July....	29.806	.806	.804	.800	.796	.794	.797	.804	.815	.825	.832	.834	.836
Aug	29.860	.861	.863	.860	.856	.856	.856	.860	.872	.882	.893	.901	.906
Sept....	29.787	.790	.790	.791	.788	.784	.782	.785	.793	.804	.813	.821	.825
Oct.....	29.828	.833	.832	.833	.829	.822	.825	.828	.835	.845	.860	.867	.867
Nov	29.949	.952	.951	.947	.947	.943	.940	.940	.945	.956	.967	.974	.980
Dec	30.012	.015	.013	.003	.005	.999	.989	.984	.994	.004	.017	.029	.041
Year....	29.898	.900	.898	.895	.892	.887	.885	.887	.897	.907	.916	.923	.928

SANTA FE, N. MEX.

[λ = 35° 41′ N.; φ = 105° 57′ W.]

Jan	23.289	.285	.283	.284	.285	.280	.275	.273	.278	.282	.290	.300	.302
Feb	23.241	.241	.238	.235	.231	.228	.227	.230	.234	.241	.247	.252	.257
Mar	23.188	.188	.187	.186	.182	.178	.181	.184	.190	.196	.202	.206	.204
Apr	23.207	.208	.207	.205	.203	.202	.205	.210	.219	.226	.230	.232	.228
May....	23.237	.239	.241	.240	.241	.244	.249	.256	.265	.269	.271	.270	.265
June ...	23.363	.366	.367	.368	.370	.375	.383	.391	.403	.408	.409	.407	.402
July....	23.448	.450	.448	.444	.443	.445	.447	.453	.461	.466	.465	.461	.458
Aug *...	23.456	.459	.460	.459	.460	.460	.463	.470	.477	.481	.483	.484	.479
Sept....	23.365	.365	.365	.364	.365	.366	.371	.378	.385	.391	.395	.395	.391
Oct.....	23.315	.314	.314	.313	.311	.309	.313	.315	.323	.333	.335	.335	.331
Nov	23.262	.262	.260	.259	.260	.259	.261	.264	.268	.275	.282	.287	.287
Dec	23.354	.351	.348	.348	.349	.345	.344	.345	.354	.360	.367	.373	.372
Year....	23.310	.311	.310	.309	.308	.308	.310	.314	.321	.327	.331	.334	.331

* For 30 days.

SAVANNAH, GA.

[λ = 32° 5′ N.; φ = 81° 5′ W.]

Jan	30.085	.084	.085	.082	.078	.087	.100	.110	.120	.127	.125	.105	.081
Feb	29.960	.958	.955	.954	.958	.962	.972	.980	.989	.992	.986	.969	.937
Mar	30.012	.007	.999	.998	.003	.017	.029	.038	.045	.046	.043	.029	.011
Apr	30.095	.087	.080	.085	.089	.106	.121	.129	.134	.137	.131	.117	.103
May....	29.984	.975	.975	.978	.985	.999	.012	.018	.024	.023	.016	.003	.986
June ...	29.928	.922	.917	.918	.924	.937	.947	.956	.960	.961	.958	.951	.938
July ...	30.035	.030	.028	.027	.035	.044	.057	.065	.070	.073	.070	.057	.043
Aug	29.984	.975	.971	.969	.975	.986	.001	.011	.017	.019	.015	.005	.989
Sept....	29.931	.927	.924	.925	.930	.944	.960	.970	.976	.974	.964	.946	.916
Oct	29.946	.946	.942	.942	.949	.959	.973	.985	.995	.996	.991	.979	.954
Nov	30.112	.113	.112	.113	.117	.122	.133	.146	.156	.162	.160	.148	.125
Dec	30.113	.115	.116	.115	.116	.121	.132	.141	.151	.159	.155	.137	.113
Year ...	30.015	.012	.009	.009	.013	.024	.036	.046	.053	.056	.051	.037	.016

WASHINGTON, D. C.

[λ = 38° 54′ N.; φ = 77° 3′ W.]

Jan	30.079	.077	.081	.078	.078	.082	.090	.099	.113	.121	.118	.102	.082
Feb	29.837	.832	.830	.827	.829	.832	.837	.844	.849	.849	.837	.819	.798
Mar	29.925	.920	.911	.909	.916	.923	.932	.936	.938	.940	.934	.921	.906
Apr	30.031	.028	.025	.027	.031	.044	.055	.059	.061	.063	.056	.048	.030
May....	29.935	.930	.929	.928	.937	.946	.955	.957	.959	.957	.954	.946	.930
June ...	29.878	.876	.877	.880	.888	.897	.905	.909	.912	.914	.911	.906	.891
July....	29.938	.934	.930	.931	.940	.950	.960	.970	.972	.975	.973	.966	.954
Aug	29.943	.937	.935	.934	.938	.947	.958	.966	.968	.969	.965	.961	.948
Sept....	29.938	.939	.938	.939	.945	.952	.962	.966	.976	.973	.965	.953	.935
Oct	29.944	.941	.938	.940	.945	.953	.965	.976	.983	.982	.976	.964	.943
Nov	30.096	.098	.098	.102	.106	.110	.120	.129	.137	.141	.137	.116	.101
Dec	30.095	.098	.100	.097	.096	.104	.113	.127	.139	.150	.145	.126	.105
Year ...	29.970	.968	.966	.966	.971	.978	.988	.995	.001	.003	.998	.986	.969

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

SAN FRANCISCO, CAL.

[H = 153 ft.; gravity correction, —.02; local time 3h 10m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1896.
.946	.928	.910	.896	.894	.896	.893	.897	.901	.906	.914	.913	.988	.840	Jan.
.073	.060	.039	.019	.009	.999	.002	.006	.014	.022	.031	.037	.087	.986	Feb.
.942	.933	.919	.907	.898	.892	.889	.894	.900	.910	.919	.915	.982	.848	Mar.
.946	.940	.933	.927	.915	.907	.900	.896	.897	.905	.914	.917	.985	.850	Apr.
.930	.925	.919	.913	.900	.893	.888	.886	.890	.898	.907	.910	.966	.856	May.
.843	.836	.829	.819	.811	.800	.792	.795	.799	.806	.818	.816	.856	.773	June.
.836	.830	.823	.809	.797	.784	.775	.775	.784	.791	.800	.806	.850	.756	July.
.902	.891	.882	.869	.854	.842	.834	.829	.832	.844	.854	.865	.911	.816	Aug.
.821	.813	.801	.786	.776	.770	.765	.764	.768	.779	.786	.791	.841	.734	Sept.
.863	.846	.831	.815	.805	.798	.795	.801	.809	.816	.825	.829	.886	.767	Oct.
.973	.956	.941	.931	.926	.927	.926	.936	.941	.943	.949	.948	.006	.888	Nov.
.033	.014	.996	.991	.989	.984	.981	.987	.994	.998	.006	.003	.074	.934	Dec.
.926	.914	.902	.890	.881	.874	.870	.872	.877	.885	.894	.896	.953	.837	Year.

SANTA FE, N. MEX.

[H = 6,998 ft.; gravity correction, —.02; local time, 2h 4m slow.]

.284	.267	.255	.252	.253	.256	.261	.270	.275	.278	.283	.277	.345	.221	Jan.
.250	.231	.216	.207	.202	.203	.208	.212	.219	.226	.228	.229	.306	.160	Feb.
.195	.178	.164	.155	.151	.152	.158	.167	.180	.191	.196	.182	.331	.148	Mar.
.218	.207	.195	.180	.172	.168	.167	.173	.186	.197	.200	.202	.266	.130	Apr.
.256	.244	.232	.215	.206	.200	.196	.205	.213	.229	.235	.238	.283	.186	May.
.393	.378	.366	.352	.340	.333	.331	.339	.346	.361	.367	.372	.420	.312	June.
.447	.438	.426	.415	.409	.406	.403	.412	.420	.435	.440	.439	.473	.397	July.
.470	.461	.449	.433	.424	.419	.419	.425	.434	.446	.452	.455	.495	.405	Aug.
.382	.367	.354	.345	.338	.336	.337	.343	.350	.359	.364	.366	.413	.311	Sept.
.323	.305	.294	.287	.285	.286	.287	.295	.300	.306	.308	.310	.356	.263	Oct.
.268	.252	.241	.237	.236	.243	.250	.255	.259	.262	.266	.261	.333	.193	Nov.
.355	.334	.323	.319	.319	.322	.327	.333	.336	.337	.338	.344	.406	.288	Dec.
.320	.305	.293	.283	.278	.277	.279	.286	.293	.302	.306	.306	.369	.251	Year.

SAVANNAH, GA.

[H = 98 ft.; gravity correction, —.03; local time, 24m slow.]

.063	.054	.054	.057	.063	.075	.081	.086	.093	.093	.089	.086	.161	.010	Jan.
.910	.897	.892	.898	.909	.919	.928	.935	.941	.943	.942	.945	.067	.823	Feb.
.990	.972	.966	.968	.978	.990	.998	.012	.019	.023	.024	.009	.116	.910	Mar.
.084	.068	.060	.057	.062	.070	.081	.092	.100	.104	.102	.096	.153	.029	Apr.
.968	.955	.949	.949	.948	.956	.965	.979	.989	.990	.988	.984	.033	.934	May.
.923	.910	.902	.896	.900	.907	.916	.925	.932	.939	.939	.929	.987	.875	June.
.026	.009	.999	.994	.998	.008	.015	.024	.032	.036	.035	.034	.085	.976	July.
.971	.956	.948	.945	.949	.954	.961	.975	.982	.987	.986	.980	.027	.932	Aug.
.906	.891	.886	.887	.893	.901	.917	.927	.933	.937	.936	.929	.998	.842	Sept.
.933	.921	.912	.909	.914	.923	.929	.937	.946	.947	.945	.949	.011	.887	Oct.
.105	.091	.088	.088	.091	.099	.107	.116	.121	.120	.122	.119	.182	.058	Nov.
.092	.081	.078	.083	.087	.097	.109	.114	.115	.118	.120	.116	.191	.040	Dec.
.998	.984	.978	.978	.983	.992	.001	.010	.017	.020	.019	.015	.084	.943	Year.

WASHINGTON, D. C.

[H = 112 ft.; gravity correction, —.02; local time, 8m slow.]

.066	.061	.061	.066	.076	.087	.093	.098	.097	.097	.093	.087	.183	.990	Jan.
.781	.774	.775	.777	.788	.800	.810	.817	.822	.819	.817	.817	.986	.647	Feb.
.886	.880	.880	.885	.900	.911	.928	.940	.946	.947	.945	.919	.080	.770	Mar.
.014	.001	.991	.992	.993	.000	.015	.026	.027	.032	.033	.028	.114	.943	Apr.
.917	.901	.894	.889	.891	.895	.904	.917	.922	.925	.926	.927	.001	.848	May.
.879	.869	.860	.858	.859	.864	.868	.877	.884	.890	.891	.885	.956	.813	June.
.945	.932	.921	.912	.914	.917	.920	.927	.929	.933	.939	.941	.014	.863	July.
.936	.926	.913	.912	.911	.916	.924	.932	.939	.942	.942	.940	.996	.880	Aug.
.915	.902	.895	.891	.897	.900	.912	.919	.918	.917	.927	.932	.015	.831	Sept.
.930	.924	.922	.924	.928	.938	.945	.951	.955	.954	.950	.949	.030	.868	Oct.
.088	.084	.087	.090	.097	.102	.111	.116	.117	.116	.115	.109	.203	.008	Nov.
.094	.086	.087	.087	.090	.096	.100	.101	.101	.104	.102	.106	.211	.993	Dec.
.954	.945	.940	.940	.945	.952	.961	.968	.971	.973	.973	.970	.066	.871	Year.

Blank page retained for pagination

Blank page retained for pagination

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME.

BISMARCK, N. DAK.

[λ = 46° 47′ N.; φ = 100° 38′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	5.3	4.8	4.7	4.7	4.7	5.1	4.9	4.9	4.2	4.9	6.1	8.1	10.0
Feb	13.6	12.7	11.8	11.3	10.7	10.2	10.4	10.5	9.6	11.0	13.3	15.9	18.4
Mar	15.3	14.6	14.1	13.9	13.4	12.6	11.9	11.9	11.9	13.8	16.6	19.6	21.5
Apr	36.9	36.2	35.7	35.4	35.0	34.5	34.0	34.7	36.2	38.5	40.7	43.4	45.1
May	51.5	50.6	50.0	48.5	47.5	47.1	47.0	49.3	51.7	55.2	57.5	60.0	62.6
June ...	60.0	58.8	57.4	56.5	55.7	54.7	55.6	58.4	61.2	65.3	67.8	70.3	72.2
July	63.2	61.9	60.4	59.4	58.3	57.8	57.8	60.2	63.4	67.3	70.5	73.4	75.7
Aug	61.1	60.3	58.7	57.9	56.4	55.6	54.6	56.0	59.3	63.8	68.5	71.7	74.2
Sept	48.6	47.5	46.6	45.8	45.1	44.4	43.7	43.5	45.1	49.3	53.9	58.0	60.3
Oct.	37.4	36.4	36.2	35.4	34.5	33.6	32.7	31.8	32.2	35.4	40.2	44.6	47.9
Nov	5.9	6.1	6.0	5.9	5.5	5.4	5.5	5.2	4.9	5.9	6.9	8.2	9.1
Dec	16.6	16.5	16.5	16.0	15.7	16.0	15.8	15.7	15.1	15.5	16.8	19.0	20.4
Year	34.6	33.9	33.2	32.6	31.9	31.4	31.2	31.8	32.9	35.5	38.2	41.0	43.1

BOSTON, MASS.

[λ = 42° 21′ N.; φ = 71° 4′ W.]

Jan	23.4	22.9	23.1	22.6	22.4	21.7	21.7	22.0	22.4	23.8	25.2	26.8	27.8
Feb	26.8	26.3	26.2	25.9	25.8	25.2	25.1	25.3	26.6	28.0	29.6	31.4	32.2
Mar	29.5	29.0	28.3	28.0	27.4	27.4	27.8	29.3	30.6	32.0	33.0	34.2	34.8
Apr	43.7	43.3	42.9	42.2	41.8	41.4	42.8	44.5	46.9	48.0	48.9	49.4	49.9
May	56.0	55.4	55.0	54.5	54.0	54.5	56.2	58.6	60.4	62.0	63.0	63.1	63.8
June ...	61.7	61.0	60.1	59.6	59.3	60.0	61.9	63.9	65.7	66.8	68.2	69.8	70.7
July	68.0	67.7	67.5	67.1	66.8	67.2	68.5	70.1	71.9	73.2	74.1	74.5	75.4
Aug	67.2	66.7	66.4	66.0	65.6	65.6	67.1	69.2	71.5	73.3	74.1	74.8	74.6
Sept	58.3	57.7	57.5	57.1	57.0	56.9	57.8	59.9	61.9	63.1	64.6	66.0	66.9
Oct.	47.7	47.3	47.0	46.5	46.3	46.3	46.7	48.1	49.6	51.3	52.6	53.7	54.8
Nov	44.5	44.1	44.1	44.1	44.1	43.8	44.0	44.5	45.5	46.8	48.2	49.2	49.8
Dec	28.6	28.3	28.1	27.5	27.1	26.9	26.7	26.8	27.5	29.4	31.2	33.5	34.5
Year	46.3	45.8	45.5	45.1	44.8	44.7	45.5	46.8	48.4	49.8	51.1	52.2	52.9

BUFFALO, N. Y.

[λ = 42° 53′ N.; φ = 78° 53′ W.]

Jan	24.3	24.2	23.9	24.1	24.0	24.0	24.2	24.1	24.4	25.1	26.1	26.7	26.9
Feb	24.5	24.3	24.4	24.6	24.2	24.2	24.2	24.6	25.0	25.6	26.3	26.8	27.1
Mar	24.6	24.3	24.2	24.0	23.3	23.0	22.4	22.4	23.0	24.0	24.7	26.1	27.1
Apr	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	56.6	56.3	55.8	55.1	55.0	55.2	56.6	57.3	58.1	58.9	60.3	60.4	60.7
June ...	62.6	61.9	60.8	60.3	60.2	60.9	63.0	64.5	66.0	66.9	68.4	69.7	70.2
July	67.8	67.3	66.5	66.1	65.5	66.1	67.3	68.7	69.9	71.1	71.7	72.9	73.6
Aug	66.5	65.7	65.0	64.9	64.5	64.8	65.9	67.0	68.7	70.3	71.7	72.5	72.5
Sept	57.5	57.0	56.6	56.8	56.5	56.9	57.5	58.9	61.0	61.8	62.9	63.3	63.9
Oct	45.2	44.9	44.8	44.3	44.2	44.4	44.8	45.3	46.4	47.5	48.7	49.8	50.6
Nov	41.9	42.1	41.8	41.5	41.3	41.6	41.7	42.0	42.3	43.4	44.6	45.1	45.4
Dec	29.1	28.7	28.5	28.3	28.2	28.2	28.2	28.4	28.9	29.7	30.8	31.6	32.4
Year	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

CHICAGO, ILL.

[λ = 41° 53′ N.; φ = 87° 37′ W.]

Jan	26.0	25.5	25.3	25.1	24.8	24.6	24.5	24.8	24.7	25.3	26.3	27.5	28.3
Feb	26.2	25.9	25.4	25.0	24.8	24.5	24.3	24.1	24.7	25.4	26.3	27.2	27.7
Mar	30.5	29.6	29.2	28.6	28.4	28.0	27.8	27.8	28.5	29.4	30.2	31.2	32.0
Apr	52.1	51.4	50.8	50.6	50.3	49.5	49.0	50.1	51.0	51.6	52.6	53.9	54.6
May	63.0	62.8	61.4	60.8	60.2	59.7	60.2	62.1	63.7	66.4	67.8	68.7	69.3
June ...	64.9	64.5	64.0	63.5	62.8	62.4	63.1	64.6	65.6	66.7	67.7	68.0	68.0
July	70.0	69.4	69.0	68.3	68.0	67.8	68.1	69.2	69.9	71.3	72.4	72.8	73.2
Aug	70.5	69.7	68.9	68.5	68.1	67.6	67.6	68.8	71.3	72.8	74.0	75.0	75.5
Sept	58.9	58.5	57.7	57.5	56.9	56.5	56.4	57.1	57.9	59.4	60.7	62.1	63.5
Oct.	49.5	48.9	48.2	47.3	46.8	46.1	45.5	45.1	46.4	48.2	49.6	50.6	51.1
Nov	38.1	37.4	37.0	36.7	36.2	35.7	35.5	35.6	35.5	36.2	37.2	38.6	40.0
Dec	31.5	31.3	31.0	31.0	30.8	30.7	30.5	30.5	30.6	31.1	32.3	33.9	34.8
Year	48.4	47.9	47.3	46.9	46.5	46.1	46.0	46.6	47.5	48.6	49.8	50.8	51.5

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME.

BISMARCK, N. DAK.

[h_t = 16 ft.; local time, 1h 42m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean. max.	Mean. min.	1896.
12.1	13.0	13.5	13.1	11.9	9.8	8.7	7.5	6.6	6.0	5.2	7.5	16.5	− 0.3	Jan.
21.0	23.1	24.4	24.7	23.9	21.7	19.7	17.7	16.4	15.3	14.2	15.9	28.2	4.4	Feb.
23.3	24.1	25.2	25.9	25.4	24.6	22.7	20.5	19.3	18.2	17.0	18.2	29.9	8.0	Mar.
46.1	47.6	49.0	49.5	49.7	49.0	47.3	44.1	41.4	39.9	38.7	41.2	52.0	32.3	Apr.
64.6	65.4	66.5	66.7	66.3	65.9	64.6	61.4	57.6	55.1	53.5	56.9	69.3	45.3	May.
74.1	75.4	76.4	77.0	76.9	75.6	74.1	70.7	67.2	64.5	62.0	66.2	78.2	53.0	June.
77.3	78.1	79.4	79.7	79.7	78.9	77.2	73.5	69.6	66.8	64.5	68.9	81.4	56.1	July.
76.5	78.4	79.7	80.0	80.2	78.8	76.9	72.1	68.0	64.9	62.8	67.4	81.8	52.7	Aug.
62.4	64.2	65.5	66.1	65.3	63.9	60.4	56.5	54.2	51.7	50.2	53.8	67.5	41.4	Sept.
50.4	52.2	53.0	53.5	52.3	49.7	45.6	42.0	39.9	38.3	37.4	41.4	54.5	29.4	Oct.
10.3	10.6	10.8	10.5	9.6	8.7	7.8	6.8	6.3	6.1	5.8	7.2	14.6	− 0.2	Nov.
21.4	23.2	24.6	24.5	23.2	22.0	21.0	19.9	19.7	19.2	18.7	18.9	27.5	10.5	Dec.
45.0	46.3	47.3	47.6	47.0	45.7	43.8	41.1	38.8	37.2	35.8	38.6	50.1	27.7	Year.

BOSTON, MASS.

[h_t = 115 ft.; local time, 16m fast.]

28.6	29.0	28.5	27.9	27.3	26.8	26.2	25.6	25.0	24.4	23.8	25.0	30.6	19.2	Jan.
33.1	32.9	32.6	32.3	31.5	30.7	29.6	29.2	28.7	28.2	27.8	28.8	36.8	20.6	Feb.
35.3	35.8	35.3	34.8	34.0	32.9	32.5	31.6	31.4	30.6	30.2	31.5	39.5	24.4	Mar.
50.9	51.0	50.9	50.1	49.7	48.6	47.9	47.0	45.9	45.0	44.4	46.5	55.4	39.1	Apr.
64.1	63.5	63.7	64.0	63.8	62.0	60.6	59.5	58.6	57.8	57.1	59.6	69.8	50.8	May.
71.4	71.1	71.2	71.1	70.1	68.7	66.5	65.5	64.5	63.6	62.8	65.6	74.4	57.8	June.
76.4	76.0	75.9	75.2	74.3	73.0	71.4	70.7	69.9	69.3	68.5	71.4	79.6	64.0	July.
74.4	74.3	74.4	73.5	73.0	71.9	70.3	69.5	68.9	68.3	67.8	70.3	78.3	63.1	Aug.
67.7	67.7	66.8	65.8	64.2	62.6	61.6	60.8	60.1	59.4	58.8	61.7	69.8	54.6	Sept.
55.4	55.1	54.7	53.7	52.9	52.1	51.2	50.2	49.7	49.1	48.3	50.4	56.6	43.7	Oct.
50.3	50.2	49.7	48.7	47.8	47.0	46.1	45.3	44.8	44.3	43.9	46.3	54.5	38.5	Nov.
35.2	34.8	34.3	33.5	32.4	31.6	31.1	30.5	29.9	29.5	29.2	30.3	37.6	23.1	Dec.
53.6	53.4	53.2	52.6	51.8	50.7	49.6	48.8	48.1	47.5	46.9	49.0	56.9	41.6	Year.

BUFFALO, N. Y.

[h_t = 178 ft.; local time, 15m slow.]

27.1	27.5	27.6	27.2	26.7	26.3	26.0	25.7	25.5	25.2	25.0	25.5	29.3	20.4	Jan.
27.1	27.7	27.6	27.0	26.3	25.8	25.2	25.0	24.7	24.7	24.4	25.5	31.1	18.6	Feb.
28.1	28.6	28.8	28.7	28.0	27.1	26.3	26.0	25.8	25.6	25.3	25.5	32.6	18.0	Mar.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	55.2	37.8	Apr.
61.1	62.0	62.3	61.6	60.7	59.5	59.8	58.5	57.9	57.3	57.1	58.5	66.2	50.8	May.
70.9	71.1	71.8	71.4	70.8	70.2	68.6	67.1	66.2	65.3	64.2	66.4	73.8	57.9	June.
74.3	74.7	75.0	75.0	74.3	73.3	72.5	71.9	71.0	69.2	68.3	70.6	76.7	63.6	July.
73.2	73.9	73.9	73.2	72.4	71.2	70.7	69.5	68.5	67.1	66.6	69.2	75.5	61.7	Aug.
64.1	64.5	64.3	64.0	62.9	61.9	62.1	60.8	60.2	59.2	58.0	60.5	67.9	52.4	Sept.
50.9	51.4	51.1	50.5	49.3	48.2	48.3	47.5	46.8	45.9	45.4	47.4	53.0	41.9	Oct.
45.4	44.8	44.5	44.1	43.4	43.0	43.2	42.3	41.7	41.1	40.8	42.9	49.3	36.0	Nov.
32.7	32.6	32.2	31.6	30.8	30.4	30.7	30.2	29.8	29.8	29.6	30.1	35.5	24.8	Dec.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	53.8	40.3	Year.

CHICAGO, ILL.

[h_t = 241 ft.; local time, 50m slow.]

28.6	28.9	29.5	29.5	29.4	29.0	28.8	28.2	28.0	27.7	27.4	27.0	32.3	21.7	Jan.
28.1	28.3	28.6	28.8	28.7	28.4	28.1	27.6	27.1	26.7	26.1	26.6	32.5	20.6	Feb.
32.8	32.9	33.3	33.9	33.9	33.2	33.2	32.8	32.4	32.0	31.7	31.0	37.3	25.2	Mar.
55.1	56.3	57.8	58.2	56.8	56.1	54.7	53.6	53.0	52.6	52.5	53.1	62.2	44.6	Apr.
70.6	70.9	70.5	70.3	69.7	68.8	68.1	66.3	64.9	64.1	63.6	65.6	74.5	56.5	May.
67.9	68.9	69.1	69.3	69.1	68.7	68.1	67.3	66.9	66.5	66.1	66.4	73.9	60.1	June.
73.8	74.7	75.5	75.2	74.9	74.7	74.2	72.5	71.8	71.2	70.3	71.6	79.3	65.0	July.
76.2	76.9	78.0	78.1	77.6	76.4	75.2	73.5	73.0	71.9	71.1	72.8	79.7	65.8	Aug.
64.2	65.0	65.6	65.1	64.6	63.6	62.8	62.0	61.2	59.9	59.2	60.7	67.3	53.9	Sept.
52.1	52.5	52.8	53.0	52.8	52.1	51.5	51.1	50.6	50.2	49.6	49.7	56.1	43.0	Oct.
40.2	40.3	40.5	40.4	40.1	39.8	39.4	38.9	38.5	38.0	37.9	38.1	45.9	30.8	Nov.
35.8	36.2	36.5	36.2	35.6	34.9	34.7	33.8	33.3	33.1	32.8	33.0	38.3	27.5	Dec.
52.1	52.6	53.1	53.2	52.8	52.1	51.6	50.6	50.1	49.5	49.0	49.6	56.6	42.9	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

CINCINNATI, OHIO.

[λ=39° 6′ N.; φ=84° 30′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	32.3	32.1	31.6	31.2	30.8	30.4	30.5	30.5	30.6	31.1	32.2	33.5	34.7
Feb	33.8	33.4	33.2	32.4	32.1	31.7	31.3	30.9	31.3	32.2	33.9	35.2	36.5
Mar	35.3	34.7	34.1	33.5	33.1	32.6	32.4	32.5	33.3	34.6	36.4	38.0	39.4
Apr	58.0	57.1	56.4	55.5	54.9	54.5	54.7	55.4	58.2	60.9	63.5	65.3	67.0
May	68.0	67.1	66.0	65.0	64.1	63.5	63.9	65.5	68.1	71.2	73.8	75.8	77.0
June ...	69.3	68.5	67.7	67.0	66.3	66.1	66.6	68.2	70.9	73.3	75.2	76.8	78.1
July	72.6	72.0	71.6	71.2	70.6	70.4	70.6	71.8	74.5	76.5	78.5	80.3	81.2
Aug	71.5	70.8	70.2	69.5	68.7	68.1	68.2	69.1	71.9	74.9	77.6	79.3	80.6
Sept	62.5	61.7	60.8	60.3	59.3	58.5	58.7	60.2	63.3	65.7	68.1	69.8	71.1
Oct	50.0	48.9	47.9	47.0	46.1	45.3	44.8	46.3	48.4	51.2	54.6	57.2	58.9
Nov	46.4	45.7	45.1	44.8	44.3	44.0	43.7	43.7	44.1	45.4	47.4	49.2	50.6
Dec	36.1	35.7	35.4	34.8	34.3	34.0	33.6	33.7	33.9	35.3	37.3	39.2	40.5
Year....	53.0	52.3	51.7	51.0	50.4	49.9	49.9	50.6	52.4	54.4	56.5	58.3	59.6

CLEVELAND, OHIO.

[λ=41° 30′ N.; φ=81° 42′ W.]

Jan	26.6	26.8	26.7	26.4	26.5	26.2	26.1	26.2	26.5	27.4	28.6	29.5	30.0
Feb	27.0	26.9	26.8	26.4	26.5	26.3	26.1	26.2	26.8	27.7	28.7	29.3	29.6
Mar	28.9	28.7	28.1	27.5	26.9	26.6	26.6	26.9	27.7	28.8	29.9	30.7	31.9
Apr	51.8	51.1	50.3	49.6	48.8	48.7	48.9	50.4	53.0	54.3	55.2	55.6	56.1
May	63.2	62.2	61.7	60.9	60.5	59.9	61.1	63.0	65.5	66.7	68.0	68.0	68.4
June ...	64.0	63.4	62.2	61.5	61.0	61.3	63.0	65.7	68.1	69.7	69.8	70.1	70.8
July	68.2	67.6	67.4	67.1	67.0	67.0	67.6	70.0	71.9	73.5	74.6	75.2	75.7
Aug	67.0	66.4	65.7	65.1	64.8	64.7	65.5	67.1	70.3	72.9	74.4	75.5	76.5
Sept	59.3	59.2	58.6	58.3	57.6	57.1	57.3	58.6	60.6	62.5	64.0	64.7	65.3
Oct	46.8	46.2	45.8	45.1	44.5	44.1	43.5	44.1	45.5	48.0	50.4	51.8	52.7
Nov	43.4	43.1	42.9	42.9	42.6	42.2	41.9	41.9	43.1	44.5	45.4	46.7	46.9
Dec	31.7	31.6	31.4	31.1	30.9	30.5	30.3	30.4	30.7	31.5	32.3	33.3	34.0
Year....	48.2	47.8	47.3	46.8	46.5	46.2	46.5	47.5	49.1	50.6	51.8	52.5	53.2

DETROIT, MICH.

[λ=42° 20′ N.; φ=83° 3′ W.]

Jan	24.5	24.6	24.6	24.4	24.1	23.9	23.7	23.7	24.0	25.1	26.0	26.6	27.1
Feb	24.0	23.9	23.6	23.4	23.3	23.0	22.9	23.4	24.3	25.3	26.7	27.5	28.3
Mar	27.4	26.9	26.3	25.9	25.2	24.5	24.3	24.9	26.4	27.7	29.1	30.2	31.3
Apr	47.3	46.8	46.3	46.0	45.5	45.1	45.9	47.4	49.3	51.2	52.9	54.2	55.3
May	60.7	59.7	59.3	58.9	58.2	58.0	59.0	61.1	64.2	66.4	68.7	70.4	71.6
June ...	63.2	62.3	61.7	61.0	60.5	60.2	62.0	64.5	66.9	68.7	70.6	71.9	72.7
July ...	67.4	66.9	66.2	65.7	65.2	64.9	65.9	68.0	70.0	72.3	74.3	75.5	76.5
Aug	66.8	66.0	65.3	64.9	64.4	64.0	64.3	66.4	68.6	70.8	72.5	73.4	74.5
Sept	56.9	55.9	55.3	54.7	54.3	54.1	54.1	55.5	57.4	59.5	61.6	63.6	64.9
Oct	44.8	43.8	43.5	42.8	42.5	42.4	41.9	43.0	44.9	46.7	48.6	50.5	51.9
Nov	39.4	39.2	39.2	39.3	39.3	39.0	39.0	39.2	39.7	40.8	41.9	42.4	42.6
Dec	28.6	28.0	28.2	28.2	28.1	27.9	27.6	27.5	27.6	28.7	29.8	31.1	32.4
Year....	45.9	45.3	45.0	44.6	44.2	43.9	44.2	45.4	46.9	48.6	50.2	51.4	52.4

DODGE CITY, KANS.

[λ=37° 45′ N.; φ=100° 0′ W.]

Jan	31.2	30.2	29.7	29.5	28.6	27.8	27.3	27.3	27.3	28.4	32.8	37.3	41.5
Feb	34.4	34.0	32.7	30.8	29.4	29.1	28.1	27.3	27.5	31.2	38.1	42.4	46.1
Mar	34.9	33.7	32.2	31.4	30.4	29.6	28.4	27.7	29.3	35.1	40.4	44.6	47.5
Apr	54.9	53.9	53.1	52.2	51.2	50.1	49.3	48.8	51.3	55.8	59.8	63.0	65.9
May	63.9	63.1	62.2	61.5	60.4	59.7	58.5	59.8	62.3	65.3	68.4	71.0	73.1
June ...	69.5	68.6	66.9	66.3	65.3	64.6	64.1	65.5	69.8	73.0	76.8	80.1	82.7
July ...	72.6	71.5	70.6	69.8	68.7	68.0	67.6	68.4	71.7	75.1	78.1	80.5	82.8
Aug	74.5	72.8	71.2	70.6	69.2	68.2	67.1	67.3	71.1	76.2	80.1	83.5	86.4
Sept	60.5	59.7	58.8	58.4	57.6	56.4	55.7	55.2	57.8	62.0	66.1	69.6	72.6
Oct	48.5	47.5	46.4	45.4	44.6	43.9	43.2	42.5	43.5	49.0	54.7	59.0	61.7
Nov	34.4	33.5	32.8	31.4	30.3	29.6	28.6	28.3	28.3	31.1	35.9	39.5	42.5
Dec	34.5	34.0	33.0	32.4	31.6	31.4	31.3	31.1	30.8	32.3	37.6	42.8	46.8
Year....	51.2	50.2	49.1	48.3	47.3	46.5	45.8	45.8	47.6	51.2	55.7	59.4	62.5

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

CINCINNATI, OHIO.

[h_t=153 ft.; local time, 38^m slow.]

2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	Mid.	Mean.	Mean max.	Mean min.	1896.
35.6	36.6	37.1	37.0	36.6	36.1	35.6	35.0	34.4	34.0	33.7	33.5	39.3	28.0	Jan.
37.5	38.0	38.2	37.9	37.4	36.8	36.0	35.1	34.4	34.1	33.5	34.4	42.2	27.7	Feb.
40.3	40.9	41.5	41.5	41.4	40.7	40.0	39.2	38.3	37.5	36.7	37.0	44.7	28.9	Mar.
68.3	68.7	69.4	69.5	69.0	67.9	66.5	64.4	62.7	61.1	59.4	62.0	71.6	51.1	Apr.
77.3	77.4	77.6	77.7	77.8	76.9	76.0	73.8	72.2	70.5	69.3	71.5	81.0	61.4	May.
78.8	79.1	79.0	79.2	78.9	78.1	77.2	75.0	73.3	72.1	70.8	73.2	82.0	64.2	June.
81.9	81.9	81.9	82.0	81.8	80.3	79.0	77.3	75.9	74.6	73.6	76.3	84.8	67.7	July.
81.1	82.2	82.5	82.2	81.6	80.5	79.0	77.0	75.3	73.2	72.0	75.3	84.4	65.8	Aug.
72.1	73.2	73.3	73.0	72.2	70.5	69.1	67.2	65.6	64.5	63.4	66.0	75.3	55.7	Sept.
60.3	61.2	61.5	61.2	60.1	58.3	56.9	55.1	54.0	52.7	51.4	53.3	62.8	43.9	Oct.
51.6	52.1	52.0	51.9	51.0	50.0	49.2	48.0	47.2	46.6	45.8	47.5	56.4	39.5	Nov.
41.7	42.5	42.9	42.5	42.0	41.1	40.5	39.6	39.0	38.3	37.5	38.0	44.8	31.4	Dec.
60.5	61.2	61.4	61.3	60.8	59.8	58.8	57.2	56.0	54.9	53.9	55.7	64.1	47.2	Year.

CLEVELAND, OHIO.

[h_t=190 ft.; local time, 27^m slow.]

30.4	30.4	30.0	29.7	29.2	28.7	28.2	27.9	27.9	27.9	27.5	28.0	32.4	22.9	Jan.
29.9	30.3	30.4	30.3	29.7	29.1	28.6	28.2	27.4	27.2	26.8	28.0	34.3	21.1	Feb.
32.1	32.7	32.5	32.7	32.7	32.2	31.7	31.4	30.7	30.3	30.0	29.9	37.1	23.2	Mar.
56.8	57.3	56.7	56.6	57.0	56.6	55.6	54.5	53.9	53.0	52.4	53.5	61.6	45.2	Apr.
69.0	69.6	70.2	70.5	70.2	69.7	69.0	67.5	65.7	64.5	63.3	65.8	73.7	57.9	May.
71.5	71.3	71.6	71.5	71.2	70.8	70.0	69.0	67.9	66.3	65.3	67.4	74.3	59.0	June.
75.7	75.8	75.7	76.0	75.3	74.7	73.5	72.3	71.3	70.0	68.9	71.8	78.6	64.8	July.
76.3	76.4	76.4	76.2	75.9	74.4	73.2	71.6	70.1	68.8	67.3	70.9	78.5	61.9	Aug.
65.2	65.5	65.9	66.3	66.4	65.2	63.2	62.1	61.2	60.4	59.7	61.8	68.9	54.4	Sept.
53.5	54.0	53.8	53.6	53.0	51.6	50.4	49.1	48.2	47.7	47.0	48.8	56.1	41.0	Oct.
47.2	47.3	46.7	46.0	45.5	45.3	44.7	43.9	43.2	43.0	42.4	44.3	51.4	36.9	Nov.
34.5	34.6	34.8	34.6	34.4	34.1	33.8	33.7	33.4	32.9	32.6	32.6	37.6	27.7	Dec.
53.5	53.8	53.7	53.7	53.4	52.7	51.8	50.9	50.1	49.3	48.6	50.2	57.0	43.0	Year.

DETROIT, MICH.

[h_t=160 ft.; local time, 32^m slow.]

27.5	27.5	27.6	27.4	27.1	26.7	26.7	26.5	26.2	25.7	25.6	25.7	29.8	21.0	Jan.
28.6	28.8	28.9	28.6	27.7	26.7	26.0	25.3	24.8	24.2	23.7	25.5	31.3	18.7	Feb.
32.4	32.9	33.4	33.5	32.6	31.2	30.6	29.7	29.0	28.5	28.2	28.8	35.7	21.8	Mar.
56.3	57.5	57.9	58.0	56.8	55.2	53.5	51.7	50.4	49.2	48.3	51.2	60.3	42.1	Apr.
72.5	72.8	72.4	72.6	71.9	70.2	67.7	65.9	63.9	62.5	61.5	65.4	75.1	55.5	May.
74.0	74.1	74.3	74.2	73.0	72.3	70.5	68.4	67.0	65.8	64.7	67.7	76.6	59.1	June.
77.6	77.6	77.5	77.3	76.5	75.4	73.6	71.3	69.9	69.1	68.4	71.4	79.6	63.2	July.
75.4	76.5	76.7	76.1	75.1	73.6	71.6	70.5	69.4	68.3	67.3	70.1	78.4	62.2	Aug.
65.5	66.0	66.2	65.4	64.4	62.5	60.9	60.0	58.9	58.0	57.4	59.7	67.5	51.7	Sept.
53.4	53.7	53.7	53.2	51.9	50.1	48.9	48.1	47.4	46.4	45.5	47.5	55.0	40.3	Oct.
43.5	43.6	43.5	42.4	41.5	41.2	40.8	39.6	39.1	38.8	38.5	40.6	47.7	33.3	Nov.
33.1	33.9	33.8	33.1	32.4	31.5	31.3	30.9	30.4	30.1	29.8	30.2	35.4	25.1	Dec.
53.3	53.7	53.8	53.5	52.6	51.4	50.2	49.0	48.0	47.2	46.6	48.6	56.0	41.2	Year.

DODGE CITY, KANS.

[h_t=44 ft.; local time, 1^h 40^m slow.]

44.0	45.8	46.7	46.5	45.4	41.6	38.0	36.3	34.5	33.2	32.6	35.1	48.0	24.8	Jan.
48.4	50.3	51.6	52.3	52.1	49.6	44.3	41.4	39.4	37.2	36.0	38.9	53.3	25.0	Feb.
49.7	50.7	51.6	51.6	51.0	49.2	45.7	42.3	39.8	37.8	36.5	39.6	54.5	25.6	Mar.
68.6	70.4	71.1	70.9	70.9	69.8	67.5	63.4	60.2	58.4	57.0	59.9	74.2	45.6	Apr.
75.5	77.2	78.3	78.5	78.4	77.3	74.8	71.6	68.4	66.6	65.4	68.4	81.2	55.5	May.
84.5	86.1	87.5	88.3	88.2	87.1	85.2	81.1	77.3	74.7	72.0	76.1	90.2	62.1	June.
84.4	86.4	86.9	86.6	85.8	84.2	81.9	79.1	76.2	74.5	73.1	76.8	89.3	65.8	July.
88.4	90.3	91.2	91.8	90.9	88.5	85.8	81.6	78.8	76.8	75.2	79.1	93.4	65.4	Aug.
74.5	76.3	77.4	77.3	76.3	74.3	70.5	66.8	64.0	62.5	61.1	65.5	79.2	53.3	Sept.
63.6	65.3	66.0	66.1	64.8	62.0	57.1	54.5	52.7	50.8	49.6	53.4	68.0	40.4	Oct.
44.7	46.1	47.1	47.3	46.3	42.4	39.1	37.1	36.0	35.1	34.6	36.8	50.6	25.3	Nov.
49.6	52.0	53.5	53.8	51.7	46.0	42.1	39.3	38.1	37.2	36.6	39.6	54.4	27.8	Dec.
64.7	66.4	67.4	67.6	66.8	64.3	61.0	57.9	55.4	53.7	52.5	55.8	69.7	43.0	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

EASTPORT, ME.

[λ=44° 54′ N.; φ=66° 59′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	18.6	18.0	17.7	17.4	17.0	16.6	15.9	15.9	16.6	17.6	18.7	20.0	21.1
Feb	21.3	20.7	20.3	19.9	19.7	19.4	19.2	19.7	20.4	21.5	22.7	23.5	24.3
Mar	26.3	26.0	25.7	25.4	25.0	24.8	25.1	25.7	26.8	27.7	29.1	30.2	30.8
Apr	36.2	35.6	35.2	35.2	35.0	35.4	36.2	37.7	39.1	40.3	41.7	42.7	43.9
May	43.4	43.0	42.5	42.2	42.6	43.9	45.8	47.9	49.4	51.5	52.2	52.5	52.9
June	51.0	50.3	49.7	49.6	49.9	51.2	53.5	55.4	57.4	58.1	58.8	59.3	60.0
July	55.8	55.6	55.4	55.4	55.7	57.0	58.3	59.6	61.7	63.6	65.1	66.1	67.1
Aug	54.8	54.6	54.3	53.8	53.7	54.5	55.7	57.4	59.0	60.7	62.2	63.6	64.0
Sept	51.8	51.7	51.3	51.0	50.7	50.8	51.8	53.4	54.4	55.7	57.0	58.0	58.2
Oct	45.1	44.8	44.5	44.1	43.8	43.9	44.3	45.0	45.8	47.0	47.8	48.9	49.4
Nov	37.9	37.6	37.3	37.1	36.5	36.5	36.3	36.6	37.3	38.3	39.3	39.6	40.0
Dec	21.7	21.5	21.6	21.6	21.5	21.7	21.8	21.9	22.4	23.3	24.1	24.8	25.5
Year	38.7	38.3	38.0	37.7	37.6	38.0	38.7	39.7	40.9	42.1	43.2	44.1	44.8

GALVESTON, TEX.

[λ=29° 18′ N.; φ=94° 50′ W.]

Jan	52.7	52.5	52.5	52.1	51.8	51.5	51.2	50.7	50.9	51.3	52.0	52.9	54.0
Feb	56.2	55.8	55.5	55.1	54.8	54.6	54.4	54.2	54.2	54.8	55.9	57.4	58.2
Mar	60.1	60.0	59.7	59.4	59.3	59.1	58.9	59.0	59.0	59.6	60.2	61.1	61.9
Apr	67.6	67.6	67.4	67.5	67.4	67.3	67.3	67.4	68.1	68.6	69.1	69.5	69.5
May	76.8	76.7	76.5	75.9	75.8	75.8	75.9	76.5	77.1	78.0	78.5	79.2	79.7
June	80.7	80.5	80.4	79.9	79.7	79.4	79.2	79.9	80.7	81.6	82.9	83.7	83.9
July	82.6	82.5	82.4	82.0	81.1	81.4	81.3	81.8	82.5	83.4	84.1	84.9	85.3
Aug	82.7	82.4	82.2	81.9	81.6	81.0	80.8	81.0	81.5	82.8	83.7	84.7	85.2
Sept	80.0	79.7	79.5	79.1	78.9	78.2	78.0	78.2	78.4	78.9	80.1	80.9	81.7
Oct	70.9	70.5	70.0	69.7	69.4	69.1	68.8	68.9	68.6	69.1	69.9	71.2	71.9
Nov	64.9	64.6	64.7	64.6	64.4	64.0	63.9	63.9	64.0	64.7	65.7	66.5	66.9
Dec	55.4	55.3	55.0	54.5	54.3	54.1	53.5	53.4	53.4	54.2	55.3	56.8	58.3
Year	69.2	69.0	68.8	68.5	68.2	68.0	67.8	67.9	68.2	68.9	69.8	70.7	71.4

HAVRE, MONT.

[λ=48° 34′ N.; φ=109° 40′ W.]

Jan	8.0	8.5	8.1	7.6	8.5	7.7	7.3	6.1	5.2	4.7	4.5	5.9	7.9
Feb	26.5	25.4	25.3	25.7	25.7	26.1	24.7	23.7	23.3	22.6	25.2	26.4	28.5
Mar	22.3	21.6	21.3	20.6	19.6	18.9	18.3	17.8	17.5	19.2	22.2	24.1	26.9
Apr	35.9	34.1	32.9	31.8	31.0	30.0	29.4	29.4	32.1	34.7	38.5	41.6	44.2
May	46.6	45.8	44.7	43.7	42.8	42.1	41.7	43.2	45.7	48.0	50.5	52.2	53.9
June	59.5	57.7	55.9	54.6	53.0	51.9	51.1	53.2	57.3	60.6	64.7	67.8	70.6
July	65.3	63.5	61.9	60.5	59.0	57.5	56.4	57.9	61.5	65.5	69.9	73.0	76.1
Aug	61.0	59.5	57.7	56.3	54.8	54.1	53.3	53.0	55.1	58.9	64.0	68.1	71.8
Sept	49.3	48.4	47.6	46.4	45.2	44.1	43.2	42.7	42.3	45.1	49.2	53.3	57.0
Oct	40.6	39.5	37.9	36.8	35.5	34.9	34.0	32.9	32.1	33.4	37.7	42.8	47.6
Nov	2.6	2.2	2.1	2.4	2.2	1.9	1.7	2.5	2.2	1.7	2.7	3.8	5.4
Dec	27.8	28.4	28.1	28.0	28.2	29.0	30.0	29.9	30.3	29.5	29.5	30.4	32.5
Year	37.1	36.4	35.3	34.5	33.8	33.2	32.6	32.7	33.7	35.3	38.2	40.8	43.5

KANSAS CITY, MO.

[λ=39° 5′ N.; φ=94° 37′ W.]

Jan	No record												
Feb	34.4	33.9	33.3	32.7	32.3	31.4	30.9	30.5	30.8	32.2	34.1	36.1	38.2
Mar	35.8	35.0	34.3	33.1	32.3	31.7	31.4	31.1	32.5	34.1	36.2	38.5	40.5
Apr	58.6	57.5	57.0	56.3	55.8	55.1	54.8	55.1	57.1	59.4	61.7	63.6	65.3
May	66.3	65.6	64.6	64.0	63.4	62.9	63.0	63.9	66.5	68.5	70.5	72.4	73.9
June	69.2	68.5	67.3	66.7	65.9	65.1	65.4	66.5	68.7	70.9	72.7	74.8	76.4
July	74.2	73.2	72.4	71.5	71.1	70.4	70.6	71.7	74.2	76.5	78.7	80.3	81.6
Aug	74.3	73.4	72.7	71.7	70.9	69.9	69.2	69.4	71.7	74.4	77.2	80.0	82.3
Sept	61.2	60.6	59.7	59.3	58.7	58.1	57.5	57.5	59.3	62.1	64.8	66.7	69.0
Oct	52.4	51.1	50.1	49.1	48.1	47.5	47.3	47.0	48.6	51.3	54.5	57.8	60.1
Nov	39.7	38.9	38.5	38.2	37.6	37.3	36.8	36.4	36.7	37.7	39.6	41.8	43.5
Dec	37.4	36.7	36.5	35.9	35.1	34.6	34.4	34.1	33.8	34.8	37.3	40.2	42.5
Year													

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

EASTPORT, ME.

[h_1=69 ft.; local time, 32m fast.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1896.
21.4	21.5	21.2	20.7	20.3	19.8	19.7	19.5	19.1	18.8	18.2	18.8	23.6	13.5	Jan.
24.9	25.2	25.2	25.1	24.6	24.1	23.9	23.4	23.1	22.8	22.7	22.4	29.1	15.3	Feb.
31.1	31.2	31.3	31.0	30.4	29.7	29.2	28.5	27.9	27.3	26.7	28.0	34.1	21.7	Mar.
44.4	43.9	43.7	42.7	41.3	40.5	39.9	39.1	38.2	37.3	36.8	39.2	46.4	32.8	Apr.
53.0	52.1	50.8	49.5	48.3	47.0	46.0	45.6	44.5	44.0	43.7	47.3	56.3	39.8	May.
61.3	61.2	61.1	59.9	58.6	56.3	55.5	54.8	53.8	52.8	52.1	55.5	64.9	47.7	June.
67.6	67.0	66.7	65.3	63.4	61.1	59.6	58.5	58.4	57.5	56.8	60.8	70.2	52.8	July.
64.1	63.7	63.2	62.5	60.8	59.2	57.8	56.9	56.6	55.7	55.2	58.5	66.6	52.7	Aug.
58.4	58.2	57.7	56.6	55.3	54.8	54.4	53.7	53.1	52.7	52.5	54.3	60.5	48.7	Sept.
49.6	49.3	48.9	48.0	47.4	46.8	46.5	45.9	45.6	45.4	45.2	46.4	51.5	41.5	Oct.
40.2	40.2	40.0	39.7	39.2	38.8	38.7	38.2	38.0	37.8	37.5	38.3	45.5	31.3	Nov.
26.1	26.3	25.9	25.0	24.4	24.0	23.8	23.1	22.5	21.8	21.5	23.2	29.5	15.4	Dec.
45.2	45.0	44.6	43.8	42.8	41.8	41.2	40.6	40.1	39.5	39.1	41.1	48.2	34.4	Year.

GALVESTON, TEX.

[h_1=85 ft.; local time, 1h 19m slow.]

54.6	54.9	55.2	55.0	54.9	54.3	54.1	54.0	53.8	53.7	53.5	53.1	57.4	48.9	Jan.
58.7	58.8	59.0	58.9	58.7	58.1	57.6	57.2	57.0	56.7	56.3	56.6	62.1	52.1	Feb.
62.6	63.2	63.4	63.1	62.5	62.1	61.1	61.0	60.8	60.7	60.4	60.8	65.5	56.3	Mar.
69.6	69.6	69.6	69.5	69.4	68.9	68.4	68.1	68.1	67.9	68.0	68.4	72.3	65.6	Apr.
79.7	79.8	79.7	79.4	79.1	78.6	78.1	77.7	77.5	77.4	77.2	77.8	81.6	75.2	May.
84.3	84.5	84.3	84.2	83.8	83.5	82.7	82.2	81.6	81.3	81.0	81.9	86.5	78.1	June.
85.7	85.7	85.6	85.1	85.0	84.4	83.9	83.4	83.0	82.9	82.7	83.4	87.8	79.5	July.
85.8	86.0	86.2	86.0	85.5	84.8	84.2	83.9	83.4	83.2	83.0	83.5	88.6	79.3	Aug.
81.7	81.8	81.9	81.9	81.9	81.6	81.0	80.7	80.4	80.2	80.0	80.2	84.7	75.6	Sept.
72.7	73.7	74.2	74.5	74.0	73.5	72.8	72.3	71.6	71.3	70.9	71.2	76.6	66.3	Oct.
67.5	67.5	67.5	67.2	66.7	66.2	65.7	65.3	64.8	64.6	64.1	65.4	70.0	60.5	Nov.
59.3	59.9	59.9	59.7	59.3	58.3	57.8	57.3	57.0	56.8	56.4	56.5	62.1	51.3	Dec.
71.8	72.1	72.2	72.0	71.7	71.2	70.6	70.3	69.9	69.7	69.5	69.9	74.6	65.7	Year.

HAVRE, MONT.

[h_1=15 ft.; local time, 2h 19m slow.]

9.1	10.6	11.4	11.3	11.3	9.7	9.0	8.1	9.0	9.4	8.9	8.2	16.0	−1.6	Jan.
29.7	31.2	31.7	31.7	31.7	30.1	28.9	28.1	26.9	26.3	25.9	27.1	36.9	15.1	Feb.
28.8	30.2	31.3	31.7	32.2	31.6	30.3	27.3	25.6	24.6	23.6	24.5	34.4	13.1	Mar.
46.1	47.6	49.2	50.0	50.1	49.6	48.7	45.4	42.4	39.8	38.2	39.7	51.4	27.5	Apr.
55.1	56.5	57.1	57.7	57.2	57.3	57.3	55.3	52.3	49.5	48.3	50.2	60.1	40.0	May.
72.6	74.3	75.2	75.9	76.4	75.5	74.9	72.7	69.4	64.7	61.8	64.6	78.1	49.9	June.
78.0	79.7	80.4	80.8	81.4	81.6	80.9	78.7	74.9	70.2	67.6	70.1	83.3	55.4	July.
74.3	76.5	78.1	79.0	79.5	78.4	76.8	73.7	70.0	66.1	63.3	66.0	80.3	50.9	Aug.
59.5	61.2	62.1	62.5	62.2	61.4	60.0	57.0	54.1	52.5	50.7	52.4	64.8	40.1	Sept.
51.5	54.5	56.1	57.3	57.4	55.4	50.6	46.5	44.3	42.5	41.1	43.5	58.7	30.6	Oct.
7.1	8.3	8.9	9.2	8.6	6.3	4.1	2.7	2.1	1.6	1.5	3.9	11.0	−3.4	Nov.
33.2	34.4	35.3	35.4	34.6	31.9	31.4	30.1	29.6	29.3	28.5	30.6	38.6	21.4	Dec.
45.4	47.1	48.1	48.5	48.6	47.4	46.1	43.8	41.7	39.7	38.3	40.1	51.1	28.2	Year.

KANSAS CITY, MO.

[h_1=78 ft.; local time, 1h 18m slow.]

.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	38.3	24.6	Jan.
40.2	41.4	41.9	42.1	41.7	40.3	39.1	37.6	36.7	35.8	35.0	35.9	44.8	26.9	Feb.
42.6	44.8	45.8	46.4	45.7	44.3	42.7	40.8	39.5	38.3	37.2	38.1	48.2	28.6	Mar.
65.7	67.4	68.3	69.0	68.8	67.7	66.2	64.2	62.7	61.5	60.0	61.6	71.3	51.4	Apr.
74.8	75.6	75.9	76.0	75.5	74.9	73.0	70.8	69.2	68.1	66.9	69.4	78.8	60.5	May.
77.8	78.3	79.1	79.7	79.3	78.4	76.9	75.0	73.1	71.9	70.8	73.8	81.4	63.1	June.
83.0	84.2	84.9	84.7	84.0	83.2	81.6	79.6	78.0	76.6	75.3	77.6	86.5	68.4	July.
83.2	84.8	85.5	85.6	85.0	83.9	82.2	79.2	77.6	75.9	74.6	77.3	87.5	67.4	Aug.
70.5	71.4	71.9	71.9	70.6	68.7	67.0	65.4	64.0	62.9	61.9	64.2	73.9	55.7	Sept.
62.3	63.8	64.5	64.2	63.3	61.1	59.2	56.8	55.3	54.1	53.0	55.1	66.0	43.9	Oct.
45.0	45.7	45.5	44.9	43.9	42.6	42.0	40.9	40.5	39.7	39.1	40.5	49.8	31.2	Nov.
44.5	46.2	47.1	46.9	45.7	44.5	43.5	42.2	41.3	40.3	39.4	39.8	49.0	31.7	Dec.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	64.6	46.1	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

KEY WEST, FLA.

[λ=24° 34′ N.; φ=81° 49′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	65.2	65.1	65.0	65.0	64.9	64.8	64.7	64.9	65.6	66.6	67.2	68.1	68.1
Feb	67.1	67.0	66.9	66.7	66.7	66.6	66.7	67.1	67.5	68.3	68.9	69.2	69.3
Mar	68.6	68.6	68.5	68.3	68.1	68.6	68.1	69.2	70.0	70.6	71.3	71.9	72.4
Apr	72.8	72.6	72.5	72.3	72.5	72.4	73.0	74.2	74.8	75.5	76.3	76.6	76.8
May....	77.0	76.9	76.8	76.7	76.7	76.6	77.6	78.8	79.6	80.1	80.7	81.3	81.2
June ...	80.2	80.2	80.2	80.2	80.0	80.2	81.2	82.5	83.4	83.8	84.4	84.8	84.9
July....	80.4	80.2	80.5	80.2	80.0	79.7	80.7	82.7	83.6	84.1	84.7	85.1	85.1
Aug	82.3	82.0	81.9	81.9	81.5	81.6	82.3	83.8	84.6	85.4	86.4	86.9	86.5
Sept....	81.1	81.2	81.2	81.0	81.0	80.7	80.9	81.9	82.9	83.5	83.9	84.3	84.4
Oct.....	78.8	78.6	78.4	78.3	78.2	78.1	78.1	79.0	79.7	80.4	81.1	81.7	81.5
Nov	76.1	76.1	76.1	76.0	75.9	75.7	75.7	76.0	77.3	78.0	78.5	78.8	79.2
Dec	69.5	69.3	69.1	69.1	69.1	68.9	68.7	68.9	69.3	69.6	70.2	70.5	71.4
Year....	74.9	74.8	74.8	74.6	74.6	74.4	74.8	75.8	76.5	77.2	77.8	78.3	78.4

MARQUETTE, MICH.

[λ=46° 34′ N.; φ=87° 24′ W.]

Jan	18.6	18.5	18.3	18.4	18.4	18.3	18.2	18.5	18.3	18.4	19.2	20.0	20.7
Feb	18.9	18.3	17.6	17.2	17.1	16.9	16.5	16.0	16.1	17.4	19.3	21.1	22.2
Mar	19.9	19.6	19.5	19.2	18.9	18.5	18.5	18.4	20.0	21.9	23.4	24.2	24.7
Apr	40.7	40.3	40.0	39.2	38.9	38.6	38.5	39.3	41.0	42.3	44.2	45.0	45.5
May....	52.2	51.9	50.9	50.5	50.0	50.3	51.9	54.0	56.2	57.6	59.5	60.0	60.1
June ...	57.6	57.8	57.6	57.0	56.2	56.2	58.3	60.8	62.5	63.8	65.3	66.1	66.4
July....	60.9	60.7	60.8	60.4	59.8	59.9	61.5	64.1	66.5	67.7	68.8	69.2	69.4
Aug	61.2	60.8	60.4	59.7	59.3	59.4	60.0	62.4	64.2	65.7	67.5	68.6	68.9
Sept....	50.0	49.7	49.4	49.3	49.2	49.1	49.0	49.6	50.9	52.6	54.2	55.6	56.4
Oct.....	41.6	41.6	41.5	41.5	41.0	40.4	40.3	40.5	41.4	43.1	45.2	46.3	47.3
Nov	27.8	27.6	27.2	26.7	26.3	26.2	26.2	26.2	26.2	27.2	28.5	29.5	30.8
Dec	23.5	23.5	23.3	23.2	23.4	23.5	23.5	23.2	23.2	23.9	25.1	26.5	28.2
Year....	39.4	39.2	38.9	38.5	38.2	38.1	38.5	39.4	40.5	41.8	43.4	44.3	45.0

MEMPHIS, TENN.

[λ=35° 9′ N.; φ=90° 3′ W.]

Jan	41.4	40.6	39.7	39.3	38.8	38.4	37.8	37.4	37.4	37.9	39.0	40.6	41.8
Feb	43.8	43.1	42.3	41.7	41.0	40.2	39.7	39.3	39.3	40.2	41.8	43.5	45.0
Mar *...	45.9	45.3	44.4	43.9	43.8	43.4	43.0	42.8	42.8	43.7	44.7	45.7	47.4
Apr	65.9	65.2	64.6	63.8	63.2	62.4	62.2	62.6	64.2	65.9	68.5	70.5	72.3
May....	72.7	71.8	70.8	70.1	69.4	69.0	69.2	71.0	72.9	75.7	78.7	80.4	81.8
June ...	72.9	71.9	71.4	70.9	70.2	69.8	70.6	72.2	74.5	76.5	78.8	80.4	81.8
July....	77.9	77.2	76.6	75.9	75.2	74.5	74.9	76.4	79.0	81.2	83.6	85.6	87.2
Aug	77.3	76.6	75.9	75.4	74.2	73.8	73.4	74.8	77.5	80.6	83.8	86.3	88.3
Sept....	69.6	68.6	67.6	66.9	66.2	65.5	65.5	66.3	68.3	70.5	73.6	76.5	78.0
Oct.....	59.0	58.1	57.1	56.3	55.7	55.1	54.5	54.3	55.0	58.0	61.7	65.0	67.5
Nov	52.0	51.3	50.6	50.1	49.4	49.1	47.6	48.5	49.1	51.0	53.5	55.4	56.8
Dec	44.4	43.9	42.7	42.0	41.5	40.9	39.3	40.2	40.5	42.0	44.5	48.2	50.2
Year....	60.2	59.5	58.6	58.0	57.4	56.8	56.5	57.2	58.4	60.3	62.7	64.8	66.5

* For twenty-five days.

NEW ORLEANS, LA.

[λ=29° 58′ N.; φ=90° 4′ W.]

Jan	49.5	49.3	49.0	48.7	48.3	48.0	47.8	47.8	48.0	49.1	51.1	53.3	54.8
Feb	53.2	52.7	52.5	52.4	52.1	51.7	51.1	50.6	51.1	53.5	56.0	58.9	60.1
Mar	57.7	57.3	56.5	55.7	55.4	55.2	54.7	54.5	56.0	58.5	61.2	63.4	64.8
Apr	67.2	66.9	66.4	65.6	65.3	65.1	65.1	65.2	67.7	70.3	72.6	74.2	75.3
May....	73.1	72.8	72.5	72.3	72.2	72.0	72.3	73.9	76.2	78.8	80.5	81.9	82.7
June ...	75.8	75.5	75.2	74.9	74.8	74.6	74.9	76.2	78.0	79.9	81.0	82.0	81.9
July....	78.5	78.2	78.0	77.6	77.3	77.2	77.2	78.8	80.9	82.7	83.5	84.3	84.8
Aug	79.1	78.7	78.3	78.2	78.0	77.6	77.8	78.8	80.8	83.0	84.7	85.5	85.8
Sept....	75.0	74.7	74.4	74.0	73.6	73.5	73.3	74.0	76.3	78.5	80.4	82.0	83.3
Oct.....	67.3	66.7	66.8	66.5	66.0	65.6	65.4	64.9	66.3	68.6	71.1	73.1	74.1
Nov	62.4	62.0	61.8	61.6	61.4	61.0	60.9	61.0	62.0	63.9	66.1	68.1	69.2
Dec	51.3	50.7	50.2	49.6	49.3	48.8	48.5	48.5	49.3	51.2	53.7	56.6	58.6
Year....	65.8	65.4	65.1	64.8	64.5	64.2	64.1	64.5	66.0	68.2	70.2	71.9	73.0

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

KEY WEST, FLA.

[h_t=42 ft.; local time, 27^m slow.]

2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	Mid.	Mean.	Mean max.	Mean min.	1896.
68.0	68.0	67.5	67.1	66.5	66.2	66.1	65.7	65.7	65.6	65.6	66.1	70.4	62.4	Jan.
69.3	69.4	69.1	68.7	68.1	67.6	67.6	67.5	67.6	67.4	67.2	67.8	72.4	63.5	Feb.
72.4	72.4	72.1	72.0	71.2	70.4	69.8	69.8	69.6	69.4	69.2	70.1	75.1	66.2	Mar.
76.8	76.8	76.4	76.2	75.4	74.6	74.2	73.9	73.6	73.5	73.2	74.5	79.2	70.9	Apr.
81.6	81.5	81.3	80.6	79.9	78.9	78.2	78.0	77.8	77.5	77.5	78.9	83.3	75.5	May.
84.6	84.5	84.4	84.1	83.4	82.6	81.7	81.3	81.0	80.9	80.5	82.3	86.8	77.8	June.
84.9	84.7	84.5	84.0	83.6	82.6	81.6	80.8	80.8	80.7	80.7	82.3	87.3	77.3	July.
86.3	86.6	86.1	85.6	85.2	84.4	83.4	83.0	82.9	82.6	82.5	84.0	88.8	79.1	Aug.
84.5	84.6	84.6	84.2	83.5	82.5	82.2	82.0	81.8	81.4	81.3	82.5	86.3	77.7	Sept.
81.6	81.4	81.0	80.6	80.0	79.5	79.4	79.1	79.0	78.8	78.7	79.6	83.5	76.2	Oct.
79.0	78.8	78.4	78.0	77.4	77.2	76.9	76.8	76.8	76.6	76.2	77.1	81.3	72.8	Nov.
71.4	71.6	71.4	71.0	70.4	70.0	70.0	69.8	69.6	69.6	69.5	69.9	74.1	66.5	Dec.
78.4	78.4	78.1	77.7	77.0	76.4	75.9	75.6	75.5	75.3	75.2	76.3	80.7	72.2	Year.

MARQUETTE, MICH.

[h_t=67 ft.; local time, 49^m slow.]

21.2	21.8	22.0	21.8	21.3	20.6	20.6	20.2	20.1	19.7	19.6	19.7	24.6	14.0	Jan.
22.9	23.2	23.6	23.6	22.8	22.0	21.2	20.3	20.1	19.5	18.9	19.7	28.3	12.4	Feb.
24.9	25.0	25.1	25.1	24.7	23.3	22.6	21.7	21.2	20.8	20.5	21.7	28.9	14.3	Mar.
45.9	45.7	45.9	46.2	45.6	44.2	42.7	41.7	41.4	41.9	41.7	42.4	50.7	34.4	Apr.
59.5	59.8	60.5	59.7	59.3	57.8	56.9	55.3	54.6	53.6	53.1	55.6	66.5	46.2	May.
66.9	66.6	66.3	66.0	65.3	64.0	62.4	61.2	60.1	58.8	58.2	61.7	71.8	52.3	June.
69.2	68.5	68.4	68.4	68.2	67.5	66.7	64.9	63.4	62.3	61.6	65.0	73.5	56.3	July.
69.1	69.3	68.8	68.2	67.2	66.5	64.9	63.3	62.4	61.8	61.1	64.2	73.1	56.0	Aug.
56.8	57.3	57.2	56.8	55.7	54.7	53.0	51.7	51.1	50.5	50.3	54.3	62.1	46.7	Sept.
47.9	48.3	48.0	47.4	46.0	44.9	43.4	42.6	42.1	41.7	41.5	43.6	50.8	37.2	Oct.
31.3	31.2	31.0	30.4	29.7	28.9	28.3	28.1	27.8	27.3	27.1	28.2	34.9	22.5	Nov.
28.9	29.5	29.4	28.7	27.7	26.5	26.1	25.8	25.4	25.0	24.8	25.5	31.4	19.7	Dec.
45.4	45.5	45.5	45.2	44.5	43.4	42.4	41.4	40.8	40.2	39.9	41.8	49.7	34.3	Year.

MEMPHIS, TENN.

[h_t=140 ft.; local time, 1^h 0^m slow.]

43.2	44.2	45.0	45.6	45.7	45.3	44.6	44.2	43.7	43.1	42.7	41.5	48.0	35.6	Jan.
46.4	47.6	48.5	49.0	49.0	48.0	47.3	46.6	45.8	44.8	44.2	44.1	52.3	37.2	Feb.
48.4	49.7	50.4	51.0	51.1	50.8	50.5	49.7	49.0	48.2	47.4	46.8	56.7	41.1	Mar.
73.8	74.6	74.6	75.0	74.8	73.9	72.4	70.7	69.6	68.4	67.4	68.6	77.3	60.5	Apr.
83.1	83.8	84.2	83.6	83.3	81.9	80.3	78.5	76.8	75.5	74.3	76.6	85.3	67.5	May.
82.7	83.0	82.5	82.7	82.5	81.6	80.2	77.4	76.0	74.8	73.7	76.6	85.4	68.6	June.
88.5	89.5	90.0	89.5	89.4	87.9	86.5	83.7	82.1	80.4	79.2	82.2	91.2	73.7	July.
89.7	90.5	90.7	90.4	88.8	86.7	85.3	82.8	81.2	79.4	78.3	81.7	92.7	71.9	Aug.
79.6	80.4	81.0	81.0	80.1	78.5	77.0	74.5	73.1	71.9	70.5	73.0	82.7	62.7	Sept.
68.6	70.0	70.8	70.5	69.3	67.3	65.6	63.7	62.1	61.0	59.8	61.9	71.9	52.0	Oct.
58.1	59.1	59.6	59.3	58.4	56.4	55.3	53.9	52.9	52.0	51.5	53.4	62.1	44.4	Nov.
52.1	53.5	54.2	54.1	52.8	51.5	50.1	49.0	48.3	47.4	46.4	46.7	55.1	38.4	Dec.
67.8	68.8	69.3	69.3	68.8	67.5	66.3	64.6	63.4	62.2	61.3	62.8	71.7	54.5	Year.

NEW ORLEANS, LA.

[h_t=112 ft.; local time, 1^h 0^m slow.]

55.8	56.5	56.9	57.0	56.6	54.9	53.2	52.3	51.7	51.0	50.6	51.7	58.8	45.6	Jan.
60.8	61.9	62.6	62.4	61.5	59.6	57.8	56.3	55.1	54.2	53.6	55.9	64.6	47.9	Feb.
65.8	66.5	66.8	66.4	65.9	64.5	63.0	61.5	60.3	59.5	58.8	60.4	69.1	53.4	Mar.
75.5	75.7	76.0	75.8	75.1	73.4	71.7	70.0	68.8	67.9	67.4	70.2	78.0	63.3	Apr.
83.4	82.7	83.1	82.4	81.6	80.3	78.8	76.8	75.5	74.3	73.6	77.2	85.5	70.1	May.
83.2	83.2	83.4	82.9	82.6	81.5	80.4	79.1	78.1	77.3	76.6	78.9	87.3	72.8	June.
86.3	86.0	85.9	85.3	85.3	84.5	83.4	81.6	80.4	79.6	78.9	81.5	89.8	75.7	July.
87.0	85.8	86.7	86.9	86.3	84.5	83.2	81.9	80.6	79.6	79.2	82.0	90.5	75.6	Aug.
83.5	83.4	83.3	83.2	82.5	80.7	78.5	77.5	76.2	75.7	75.3	78.0	85.9	71.9	Sept.
74.8	75.5	75.7	75.4	74.6	72.7	71.1	70.2	69.4	68.6	67.7	69.9	77.7	63.0	Oct.
69.8	69.9	70.0	69.3	68.1	66.4	64.8	63.8	62.7	62.3	61.7	64.6	72.6	57.9	Nov.
59.8	60.9	60.9	60.2	59.0	57.3	56.6	55.0	54.2	53.4	52.7	54.0	62.4	46.9	Dec.
73.8	74.0	74.3	73.9	73.3	71.7	70.2	68.8	67.8	67.0	66.3	68.7	76.8	62.0	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

NEW YORK, N. Y.

[λ=40° 43′ N.; φ=74° 0′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	26.0	25.8	25.5	25.3	25.1	24.9	25.1	24.9	25.2	26.2	27.6	28.4	29.7
Feb	28.2	27.8	27.4	27.1	27.1	26.7	26.6	26.8	27.7	28.9	30.3	31.4	32.7
Mar	29.4	29.2	28.8	28.3	28.0	27.8	28.2	28.2	29.4	30.9	32.4	33.3	34.2
Apr	47.3	47.0	46.7	46.3	46.0	45.7	45.8	47.0	48.8	50.9	52.1	52.6	53.4
May	59.8	58.9	58.5	58.1	57.6	57.7	58.7	60.0	61.8	63.6	65.5	66.9	68.0
June ...	63.0	62.5	61.8	61.6	61.2	61.5	62.3	63.6	65.5	66.8	67.5	68.6	69.6
July....	69.9	69.5	69.0	68.6	68.3	68.4	69.0	70.1	71.7	73.2	74.9	75.7	76.6
Aug	70.5	69.8	68.9	68.4	68.1	68.1	68.9	69.9	71.6	73.5	75.1	75.6	76.8
Sept....	62.0	61.5	60.9	60.5	59.9	59.8	59.9	60.7	62.2	64.2	65.8	67.4	68.6
Oct.....	49.6	49.1	48.6	48.5	48.4	48.4	48.3	49.1	50.5	51.6	53.2	54.5	55.3
Nov	47.1	46.6	46.0	45.7	45.4	45.0	45.3	45.8	46.7	47.6	49.6	50.5	51.2
Dec	29.9	29.5	29.0	28.7	28.6	28.4	28.4	28.8	29.2	30.5	32.4	33.3	34.7
Year....	48.6	48.1	47.6	47.3	47.0	46.9	47.2	47.9	49.2	50.7	52.2	53.2	54.2

PHILADELPHIA, PA.

[λ=39° 57′ N.; φ=75° 9′ W.]

Jan	29.4	29.0	28.8	28.6	28.5	28.0	27.8	28.0	28.5	29.7	31.3	32.4	33.5
Feb	31.1	30.9	30.7	30.4	30.2	30.0	29.4	29.8	30.8	32.3	33.9	35.5	37.1
Mar	32.9	32.5	32.0	31.4	31.1	30.7	31.1	32.7	34.1	35.6	36.9	38.4	39.6
Apr	50.5	50.0	49.7	49.4	49.1	48.7	49.3	50.9	52.0	54.1	56.3	58.3	59.6
May....	62.7	62.1	61.7	61.0	60.5	60.7	61.7	63.7	65.4	67.7	69.5	71.1	72.4
June ...	66.0	65.4	65.1	64.6	64.3	64.6	65.9	67.6	69.0	70.8	72.4	73.5	74.7
July....	72.8	72.6	72.2	72.0	71.7	71.9	73.1	74.8	76.6	78.3	79.8	81.0	82.1
Aug	71.7	71.2	70.6	70.1	69.6	69.5	70.4	72.7	74.8	77.2	79.1	80.4	81.6
Sept....	64.3	63.7	63.4	62.8	62.2	61.9	62.4	63.4	65.4	67.6	69.4	71.2	72.4
Oct.....	50.9	50.7	50.2	49.8	49.6	49.2	49.2	50.2	51.8	53.5	55.1	56.4	57.5
Nov	48.5	48.3	47.9	47.8	47.2	46.9	47.0	47.5	49.1	50.9	52.6	54.3	55.3
Dec	33.3	32.8	32.3	31.9	31.4	30.9	30.7	31.2	31.8	33.5	34.9	36.6	37.7
Year....	51.2	50.8	50.4	50.0	49.6	49.4	49.8	51.0	52.4	54.3	55.9	57.4	58.6

PITTSBURG, PA.

[λ=40° 32′ N.; φ=80° 2′ W.]

Jan	29.8	29.5	29.1	28.9	28.8	28.9	29.0	29.2	29.8	30.7	32.0	33.1	34.3
Feb	31.8	31.3	30.7	30.1	29.7	29.4	29.3	29.7	30.2	31.4	32.8	34.1	35.3
Mar	32.0	31.6	30.9	30.6	30.3	30.0	29.7	29.9	31.2	32.9	34.7	36.0	37.5
Apr	54.1	53.2	52.4	51.8	51.3	50.7	51.2	52.7	55.4	57.5	59.8	61.7	63.1
May	65.4	64.7	64.0	63.1	62.7	62.4	63.5	65.0	68.1	70.0	72.1	73.9	75.5
June ...	65.8	65.0	64.3	63.6	63.1	63.0	64.3	66.4	69.3	71.4	73.5	75.1	76.0
July....	70.1	69.4	68.7	68.1	67.7	67.6	68.5	70.0	72.2	74.4	76.1	77.5	79.5
Aug	69.3	68.3	67.7	67.1	66.4	65.9	66.4	67.8	70.3	72.2	74.5	76.3	77.8
Sept....	61.4	60.4	59.4	58.6	58.0	57.7	58.2	60.4	62.5	65.3	68.0	69.6	71.2
Oct.....	47.6	46.5	45.6	45.1	44.5	44.0	43.7	45.0	46.2	48.6	52.1	54.6	56.3
Nov	46.6	46.2	45.6	45.3	44.8	44.5	44.5	44.9	46.1	48.0	49.9	51.4	52.7
Dec	33.5	33.2	32.6	32.5	32.3	32.2	32.3	32.8	32.9	33.8	35.1	36.7	38.2
Year....	50.6	49.9	49.2	48.7	48.3	48.0	48.4	49.5	51.2	53.0	55.0	56.7	58.1

PORTLAND, OREG.

[λ=45° 32′ N.; φ=122° 43′ W.]

Jan	40.6	40.7	40.2	40.2	40.0	39.9	39.6	39.8	39.7	40.1	40.3	41.0	42.2
Feb	46.0	45.3	44.5	44.2	44.0	43.2	43.0	42.9	42.5	42.4	42.4	43.7	45.0
Mar	43.7	42.9	41.9	41.0	40.2	40.0	39.3	39.4	39.0	39.1	40.0	41.4	43.3
Apr	45.4	44.6	43.9	43.3	42.8	42.3	41.8	41.6	41.4	42.2	43.6	45.1	46.2
May	50.3	49.8	48.8	48.4	47.6	46.8	46.2	45.9	46.5	47.5	48.9	50.4	51.9
June ...	59.6	58.4	57.2	56.1	54.6	53.4	52.7	52.7	53.2	54.4	56.2	57.9	59.8
July....	68.8	67.4	65.3	63.8	62.2	60.8	59.4	59.4	60.5	62.3	64.0	65.6	68.4
Aug	66.0	64.8	63.2	62.2	61.3	60.4	59.6	59.2	58.5	58.6	59.6	61.2	63.1
Sept....	60.5	59.1	57.7	56.6	55.6	54.7	53.7	52.9	51.9	51.7	53.0	55.2	58.3
Oct.....	55.3	53.7	52.4	51.7	51.2	50.3	49.3	49.5	48.1	47.8	48.9	51.1	53.7
Nov	38.0	37.9	37.8	37.5	37.5	37.1	36.8	37.0	36.4	36.2	36.3	36.9	37.8
Dec	43.4	43.3	43.1	42.7	43.2	42.9	42.9	43.1	42.8	42.6	42.4	42.6	43.4
Year....	51.5	50.7	49.7	49.0	48.4	47.6	47.0	47.0	46.7	47.1	48.0	49.3	51.1

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

NEW YORK, N. Y.

[h_t = 298 ft.; local time, 4^m fast.]

2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	Mid.	Mean.	Mean max.	Mean min.	1896.
30.1	30.8	30.6	30.1	29.7	29.1	28.2	27.5	27.1	26.9	26.6	27.3	33.0	22.1	Jan.
33.6	34.5	33.9	33.1	32.4	32.0	31.3	30.9	30.5	29.7	28.9	30.0	38.0	22.4	Feb.
35.0	35.8	36.1	35.9	34.9	34.0	33.5	32.5	31.8	30.8	30.2	31.6	39.5	24.7	Mar.
54.2	54.8	54.3	53.8	52.4	51.6	50.9	50.2	49.6	48.4	47.7	49.9	58.5	42.2	Apr.
67.7	67.4	67.4	67.2	66.0	65.0	64.7	63.9	62.5	61.7	61.0	62.9	72.2	55.3	May.
70.0	70.6	70.4	69.8	68.7	67.5	67.2	65.8	65.2	64.5	63.8	65.8	73.7	59.3	June.
77.0	77.3	76.4	76.3	75.3	74.2	74.1	72.8	72.1	71.4	70.5	72.6	80.1	66.7	July.
77.3	76.9	76.3	76.0	75.5	74.6	74.3	73.1	72.6	71.6	70.8	72.7	79.8	66.2	Aug.
69.3	69.5	69.2	68.3	66.9	65.8	65.4	64.7	64.2	63.5	62.6	64.3	71.7	57.9	Sept.
55.6	56.4	56.2	55.5	54.1	52.9	52.4	51.5	51.0	50.4	50.1	51.7	57.7	46.1	Oct.
51.2	51.4	50.7	49.7	49.0	48.4	48.2	47.6	47.3	46.6	46.3	47.9	54.8	41.3	Nov.
35.5	36.2	35.9	35.4	34.3	33.5	33.2	32.3	32.0	31.3	30.6	31.7	38.7	25.5	Dec.
54.7	55.1	54.8	54.3	53.3	52.4	52.0	51.1	50.5	49.7	49.1	50.7	58.1	44.1	Year.

PHILADELPHIA, PA.

[h_t = 168 ft.]

34.1	34.3	34.2	33.5	32.8	32.2	32.1	31.0	30.6	30.1	29.8	30.8	36.6	25.6	Jan.
37.9	38.5	38.6	38.0	36.9	35.7	34.9	34.1	33.1	32.3	32.0	33.5	41.5	25.7	Feb.
40.1	41.1	41.5	41.3	40.1	38.7	37.5	36.1	35.2	34.3	33.5	35.8	43.9	27.8	Mar.
60.7	61.3	61.5	61.1	59.9	57.9	56.4	54.2	53.1	52.0	50.9	54.5	64.5	46.0	Apr.
73.5	73.9	73.6	72.7	71.5	70.0	68.3	66.7	65.5	64.8	63.6	66.8	76.7	57.6	May.
75.4	75.9	76.1	76.1	75.5	73.6	71.7	70.2	68.8	67.6	66.7	70.1	78.6	62.1	June.
82.7	82.8	83.0	82.6	81.7	79.8	78.4	77.1	75.7	74.7	73.6	77.1	85.3	69.8	July.
82.5	83.0	83.1	82.5	81.1	78.9	77.0	75.6	74.1	73.3	72.9	76.0	85.6	67.6	Aug.
73.7	73.8	73.8	73.2	71.2	69.3	68.1	67.1	66.1	65.6	64.9	67.4	76.2	59.4	Sept.
58.7	58.7	58.4	57.4	56.2	55.0	54.3	53.4	52.5	51.9	51.3	53.4	60.2	47.0	Oct.
55.5	55.7	55.3	54.1	52.7	51.6	50.9	49.7	48.9	48.5	48.1	50.6	58.3	42.5	Nov.
38.3	38.7	38.4	37.7	37.0	36.4	36.5	35.5	35.0	34.3	34.0	34.6	41.3	28.2	Dec.
59.4	59.8	59.8	59.2	58.0	56.6	55.5	54.2	53.2	52.4	51.8	54.2	62.4	46.6	Year.

PITTSBURG, PA.

[h_t = 116 ft.; local time, 20^m slow.]

34.9	35.3	35.4	35.0	34.3	33.7	32.9	32.2	31.8	31.3	31.0	31.7	37.5	25.2	Jan.
35.9	36.1	36.3	35.9	35.4	34.5	33.9	33.3	32.9	32.3	31.9	32.7	40.0	24.8	Feb.
37.9	38.5	39.0	39.1	38.4	37.7	36.8	35.9	35.0	34.0	33.3	34.3	41.5	24.6	Mar.
63.6	64.3	64.7	64.6	63.7	62.0	60.6	58.9	57.2	56.2	55.2	57.7	66.9	47.6	Apr.
75.6	76.4	76.5	76.2	75.5	74.0	72.0	69.9	68.5	67.4	66.2	69.5	78.8	59.6	May.
76.6	76.3	76.6	76.3	75.6	73.7	72.4	70.9	69.5	68.3	67.0	70.2	79.8	60.9	June.
80.2	79.7	80.0	79.5	78.9	77.2	75.6	74.0	72.6	71.9	71.0	73.8	82.5	65.2	July.
78.1	78.9	79.2	79.0	78.1	77.0	75.0	73.4	72.4	71.0	69.6	72.6	81.2	63.8	Aug.
71.8	72.8	73.0	72.5	71.5	69.9	67.6	66.1	64.7	63.5	62.2	65.3	74.7	55.6	Sept.
57.3	58.0	57.7	57.5	56.2	54.6	52.6	51.5	50.2	49.3	48.1	50.5	59.0	42.3	Oct.
53.4	53.2	53.1	52.7	51.8	50.6	49.5	48.5	47.7	46.9	46.0	48.5	56.5	40.6	Nov.
39.2	39.9	40.3	39.7	39.1	38.0	37.1	36.5	35.9	35.1	34.6	35.6	41.8	28.5	Dec.
58.7	59.1	59.3	59.0	58.2	56.9	55.5	54.3	53.2	52.3	51.3	53.5	61.7	44.9	Year.

PORTLAND, OREG.

[h_t = 203 ft.; local time, 3^s 11^m slow.]

42.8	43.7	43.7	44.4	44.0	43.5	43.1	42.3	41.9	41.0	40.8	41.5	48.6	37.0	Jan.
46.2	47.8	49.0	49.8	49.6	49.3	48.8	47.7	47.0	46.3	46.0	45.7	52.1	40.3	Feb.
45.4	47.7	49.4	50.7	51.3	51.1	51.1	49.6	48.5	47.1	45.5	44.5	53.4	37.6	Mar.
48.0	49.4	50.4	51.2	51.6	51.6	51.4	49.7	48.4	47.2	46.3	46.2	54.1	39.9	Apr.
53.4	55.1	55.4	56.3	57.1	57.2	57.2	55.9	54.6	53.0	51.9	51.5	59.6	44.9	May.
61.8	64.0	65.6	67.0	68.2	68.8	69.0	67.7	66.5	64.0	62.0	60.5	70.5	51.8	June.
70.7	73.6	75.8	78.4	79.8	80.2	80.3	79.3	77.3	74.0	71.7	69.5	81.5	58.7	July.
65.2	67.6	68.9	71.2	72.3	72.8	72.8	71.9	70.5	68.6	67.3	65.3	74.7	57.9	Aug.
61.0	64.5	66.2	68.4	69.3	69.4	68.7	66.8	64.8	63.0	61.6	60.2	70.9	51.1	Sept.
56.1	59.0	60.9	62.3	63.2	62.8	61.5	59.8	58.5	57.1	55.9	55.0	64.7	47.1	Oct.
38.4	38.6	39.2	39.7	39.8	39.5	39.2	38.7	38.2	37.8	37.7	37.9	43.2	34.0	Nov.
43.7	44.5	45.0	45.4	45.6	45.4	45.2	44.6	44.3	43.8	43.8	43.7	48.2	39.6	Dec.
52.7	54.6	55.8	57.1	57.6	57.6	57.4	56.2	55.0	53.6	52.5	51.8	60.1	45.0	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

ST. LOUIS, MO.

[λ=38° 38′ N.; φ=90° 12′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	33.2	32.7	32.3	31.8	31.4	31.1	30.8	30.6	30.7	31.3	33.0	35.4	36.9
Feb	35.8	35.2	34.6	33.9	33.1	32.6	32.2	31.9	32.3	33.4	35.5	37.4	38.8
Mar	38.6	37.8	36.9	36.1	35.2	34.5	34.3	34.3	35.3	36.7	38.5	40.9	42.8
Apr	61.3	59.8	58.6	58.0	57.1	56.7	56.5	56.9	58.7	60.9	63.9	66.7	68.5
May....	69.9	69.1	68.3	67.5	67.0	66.6	66.5	67.6	69.3	71.4	73.7	76.1	77.7
June ...	70.4	69.9	69.0	68.5	67.9	67.8	68.4	69.6	71.3	72.8	74.9	76.6	78.0
July....	76.5	75.6	74.7	74.0	73.3	72.9	73.2	74.3	76.2	78.3	80.0	82.0	83.2
Aug	75.7	74.9	74.1	73.3	72.6	72.0	72.0	73.0	75.2	77.8	80.4	82.9	84.3
Sept....	64.4	63.7	62.7	61.8	61.6	60.7	60.4	61.5	62.8	65.0	67.6	70.2	71.9
Oct.....	54.5	53.4	52.3	51.4	50.3	49.7	49.1	48.9	50.4	53.0	56.6	59.5	61.7
Nov	43.8	43.3	42.9	42.5	42.2	41.8	41.6	41.5	41.9	43.3	45.3	47.0	48.2
Dec	37.9	37.5	37.1	36.6	36.1	35.6	35.5	35.5	35.3	36.3	38.4	40.4	42.3
Year....	55.2	54.4	53.6	53.0	52.3	51.8	51.7	52.1	53.3	55.0	57.3	54.6	61.2

ST. PAUL, MINN.

[λ=44° 58′ N.; φ=93° 3′ W.]

Jan	14.5	13.9	13.4	12.7	12.5	12.2	12.3	12.2	12.0	12.5	14.3	16.6	18.3
Feb	19.8	19.0	18.2	17.4	16.8	16.2	15.7	15.1	15.0	16.2	18.6	21.1	23.1
Mar	23.9	23.4	22.6	21.7	20.8	20.0	19.6	19.1	20.1	22.1	24.8	26.8	28.4
Apr	44.7	44.0	43.1	42.8	41.9	41.7	41.4	41.9	43.3	45.0	46.9	47.8	49.3
May....	60.2	59.2	58.3	57.8	57.0	56.2	56.3	57.7	60.4	62.8	65.4	66.8	68.3
June ...	64.1	63.1	61.9	61.0	60.1	59.5	60.4	62.9	65.7	68.2	70.4	72.0	73.8
July....	67.5	66.0	64.7	63.9	62.9	61.9	61.8	63.3	66.3	69.0	72.0	73.5	75.2
Aug	66.3	65.3	64.0	62.7	61.7	60.7	60.4	61.6	64.2	67.6	71.3	73.8	76.0
Sept....	53.4	52.6	51.6	51.0	50.3	49.5	48.6	48.5	50.8	53.3	56.3	58.2	60.7
Oct.....	43.2	42.6	41.8	41.0	40.3	39.9	39.1	38.6	39.4	41.5	45.2	47.6	49.8
Nov	21.4	20.9	20.7	20.3	19.9	19.3	18.9	19.0	19.1	19.5	20.6	22.0	23.6
Dec	21.8	21.5	21.2	21.1	21.3	21.4	21.4	21.7	21.4	21.6	22.8	24.4	25.6
Year....	41.7	41.0	40.1	39.4	38.8	38.2	38.0	38.5	39.8	41.6	44.0	45.9	47.7

SALT LAKE CITY, UTAH.

[λ=40° 46′ N.; φ=111° 54′ W.]

Jan	31.7	31.5	31.5	31.2	31.3	30.9	30.7	30.9	30.1	30.5	31.0	33.2	35.5
Feb	34.1	33.5	33.1	32.4	32.6	32.7	31.9	31.0	30.7	30.7	32.8	36.1	38.8
Mar	38.1	37.2	36.9	36.2	36.1	35.1	34.8	34.6	34.9	35.9	38.1	41.1	43.2
Apr	44.0	43.2	42.5	41.9	41.4	41.1	40.8	40.1	40.9	43.4	45.2	48.0	49.5
May....	50.5	49.5	48.4	47.6	47.1	46.3	45.5	45.4	46.6	48.7	51.4	52.8	54.2
June ...	67.7	67.3	65.6	64.4	63.3	61.9	60.5	61.0	64.1	67.5	71.1	74.0	76.3
July....	71.8	70.1	68.9	68.3	67.5	66.7	65.8	65.4	67.2	70.8	73.8	77.0	79.0
Aug	70.9	69.5	69.0	68.1	67.1	66.3	66.2	65.4	67.0	70.5	73.6	77.4	79.6
Sept....	61.5	60.7	60.1	59.2	58.9	58.1	57.3	56.9	56.1	58.8	63.6	67.3	70.1
Oct.....	50.9	49.8	49.0	49.0	48.6	48.7	48.4	47.3	46.4	49.0	52.4	56.5	60.3
Nov	35.3	35.5	35.0	34.5	34.6	34.8	34.2	33.8	33.0	32.9	34.3	36.6	39.0
Dec	32.9	32.8	32.5	32.2	32.0	32.1	31.5	32.1	31.2	31.4	32.5	34.7	37.3
Year....	49.1	48.4	47.7	47.1	46.7	46.2	45.6	45.3	45.7	47.5	50.0	52.9	55.2

SAN DIEGO, CAL.

[λ=32° 43′ N.; φ=117° 10′ W.]

Jan	52.6	52.6	51.8	51.4	51.3	51.2	51.1	50.6	50.3	49.9	52.4	55.5	58.5
Feb	54.8	54.0	53.6	53.5	52.9	52.5	51.8	51.9	51.5	51.3	55.2	59.0	62.0
Mar	55.6	55.1	54.6	54.2	53.9	53.4	52.7	52.7	52.5	53.3	55.7	57.6	60.6
Apr	55.1	54.4	53.6	53.2	52.6	52.1	51.7	51.2	51.4	53.9	56.8	58.9	60.2
May....	60.0	59.3	58.6	58.3	58.0	57.7	57.4	57.1	57.5	59.0	60.8	62.6	64.1
June ...	62.4	62.0	61.9	61.8	61.8	61.7	61.5	61.3	61.6	62.3	64.0	65.8	66.5
July....	66.2	65.9	65.7	65.5	65.5	65.6	65.4	65.3	65.5	66.4	67.6	69.0	69.9
Aug	67.5	67.0	66.6	66.4	66.1	65.9	65.5	65.6	65.6	66.2	67.6	69.2	70.5
Sept....	64.5	64.1	63.7	63.6	63.2	63.0	63.0	62.6	61.5	62.3	64.8	67.1	69.2
Oct.....	61.6	61.3	60.8	60.7	60.3	60.2	59.8	59.7	59.3	59.5	62.0	64.6	66.6
Nov	56.8	56.4	55.5	55.4	55.1	54.6	54.2	53.7	53.4	53.8	57.6	60.6	63.2
Dec	54.8	54.0	53.5	53.3	53.0	52.7	52.4	52.5	52.3	52.2	54.5	59.0	62.2
Year....	59.3	58.8	58.3	58.1	57.8	57.6	57.2	57.0	56.9	57.5	59.9	62.4	64.5

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

ST. LOUIS, MO.

[h_t=110 ft.; local time, 1h 1m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1896.
38.3	39.3	40.1	39.9	39.2	38.5	37.5	36.8	35.8	35.0	34.5	34.8	41.5	28.5	Jan.
39.7	40.8	41.5	41.6	40.8	39.7	38.4	37.9	37.3	36.3	35.6	36.5	44.6	29.1	Feb.
44.5	45.7	46.3	46.5	45.9	44.8	44.1	42.9	42.1	41.5	40.5	40.3	48.8	32.4	Mar.
70.6	71.7	72.2	72.2	71.5	70.2	68.4	66.8	65.5	64.3	63.0	64.2	74.7	54.8	Apr.
79.2	80.1	80.8	80.5	79.6	77.9	75.9	74.6	73.1	71.7	70.5	73.1	82.0	63.9	May.
79.5	79.5	80.4	80.7	79.8	78.6	77.5	76.0	74.0	73.0	71.9	74.0	82.6	65.4	June.
84.1	85.0	85.1	84.8	84.3	83.0	81.5	80.2	79.4	78.2	77.4	79.0	87.6	70.4	July.
85.2	86.2	86.5	86.0	85.2	83.9	82.2	80.6	78.9	77.6	76.4	79.0	88.7	70.1	Aug.
73.8	75.4	76.1	75.9	74.0	71.9	69.9	68.7	67.9	66.7	65.2	67.5	77.4	59.0	Sept.
63.2	64.1	64.7	64.7	63.5	61.7	60.0	58.5	57.2	56.0	55.2	56.7	66.7	47.6	Oct.
49.5	50.2	50.7	50.3	49.3	48.3	47.2	46.3	45.4	44.3	43.4	45.4	54.3	38.1	Nov.
44.2	45.5	46.3	46.5	45.4	44.2	43.2	42.1	41.3	40.5	39.8	40.2	47.5	34.2	Dec.
62.6	63.6	64.2	64.1	63.2	61.9	60.5	59.3	58.2	57.1	56.1	57.6	66.4	49.5	Year.

ST. PAUL, MINN.

[h_t=114 ft.; local time, 1h 12m slow.]

19.4	20.7	21.4	21.2	20.5	19.3	18.7	17.9	17.2	16.3	15.8	16.1	23.2	7.9	Jan.
24.8	26.1	27.0	27.0	26.7	25.6	24.6	23.6	22.5	21.4	20.6	20.9	30.1	11.4	Feb.
29.8	31.1	31.5	32.0	31.4	30.6	29.3	27.8	27.0	26.0	25.1	25.6	34.5	15.7	Mar.
50.8	51.6	52.5	53.1	52.9	52.5	51.5	49.9	48.9	48.0	46.7	47.2	55.8	39.0	Apr.
69.1	70.2	70.3	70.3	69.6	68.9	67.5	65.6	64.2	62.7	61.6	63.6	72.5	54.3	May.
74.6	75.1	75.4	75.3	74.7	74.1	73.6	71.9	70.0	68.0	66.1	68.4	78.0	58.4	June.
76.8	78.3	78.9	78.7	79.1	78.3	77.0	74.5	72.3	70.5	68.7	70.9	80.7	60.8	July.
77.5	78.3	78.9	78.8	78.9	77.8	76.2	73.6	71.7	69.3	67.8	70.2	81.2	58.8	Aug.
62.4	63.4	64.0	64.4	64.1	62.9	61.1	58.9	57.2	55.9	54.6	56.4	66.3	46.7	Sept.
51.2	52.2	52.5	52.5	51.7	49.9	48.2	46.5	45.3	43.9	43.3	45.3	54.8	36.2	Oct.
24.4	24.9	25.1	24.8	24.5	23.8	23.2	22.3	21.7	21.0	20.7	21.7	29.0	14.6	Nov.
26.4	27.0	27.3	27.5	27.0	26.5	26.0	25.3	24.8	24.3	23.9	23.9	30.0	16.6	Dec.
48.9	49.9	50.4	50.5	50.1	49.2	48.1	46.5	45.2	43.9	42.9	44.2	53.0	35.0	Year.

SALT LAKE CITY, UTAH.

[h_t=83 ft.; local time, 2h 27m slow.]

37.0	38.3	38.5	38.9	38.7	37.9	35.8	34.8	34.1	33.2	32.5	33.7	41.7	26.3	Jan.
40.3	42.2	43.6	43.7	43.8	42.8	40.8	38.1	36.7	36.0	35.1	36.4	46.3	27.4	Feb.
44.6	45.5	46.3	46.5	46.6	46.2	45.0	43.3	41.5	40.1	39.3	40.3	49.4	30.9	Mar.
50.9	51.4	52.2	52.9	53.2	52.6	51.8	49.9	48.0	46.7	45.5	46.5	56.5	36.3	Apr.
55.3	56.7	57.4	57.7	57.9	58.1	58.0	57.2	56.2	53.8	52.5	52.3	61.8	41.1	May.
78.1	79.1	79.5	79.5	79.9	80.1	80.0	78.0	74.2	71.5	70.3	71.4	83.0	57.1	June.
80.4	81.6	82.0	83.1	83.8	83.8	82.6	80.6	77.4	75.2	73.2	74.8	86.4	62.1	July.
82.1	82.6	83.2	83.5	83.7	83.5	81.7	80.2	76.0	74.0	72.7	74.7	85.9	61.5	Aug.
71.8	72.2	72.8	73.1	73.5	72.7	71.0	68.0	65.7	63.6	62.0	64.8	75.8	52.3	Sept.
62.1	62.9	63.9	64.5	64.3	63.3	60.6	57.4	55.9	53.3	51.4	54.8	66.1	42.6	Oct.
41.1	42.4	42.8	42.8	42.3	40.5	38.6	37.6	36.4	35.7	35.4	37.0	45.7	28.6	Nov.
39.7	41.1	42.2	43.3	42.7	40.5	38.3	37.2	36.4	34.6	33.9	35.6	44.8	27.5	Dec.
57.0	58.0	58.7	59.1	59.2	58.5	57.0	55.2	53.2	51.5	50.3	51.9	62.0	41.1	Year.

SAN DIEGO, CAL.

[h_t=59 ft., local time, 2h 49m slow.]

60.3	61.1	61.5	61.4	61.5	60.3	58.4	56.6	55.1	54.2	53.3	55.1	64.3	46.7	Jan.
63.5	64.5	64.6	64.8	64.7	63.6	62.4	60.2	58.5	56.9	55.7	57.6	67.7	47.7	Feb.
62.6	64.1	64.2	64.6	64.3	63.9	62.5	60.8	59.2	57.7	56.8	58.0	66.7	49.6	Mar.
61.1	61.7	62.0	62.2	62.0	61.6	60.8	59.7	58.3	57.4	56.3	57.0	63.9	49.1	Apr.
65.0	65.7	65.7	65.7	65.7	65.4	65.6	64.5	63.0	61.7	60.9	61.6	68.9	55.0	May.
67.2	67.4	67.2	67.4	67.5	67.0	66.8	65.7	64.7	63.4	62.8	64.2	70.4	59.3	June.
70.4	71.0	71.3	71.5	71.4	70.8	70.3	69.7	68.6	67.4	66.8	68.0	73.9	63.4	July.
71.2	72.0	72.6	73.0	72.6	72.2	71.6	70.7	69.4	68.5	67.9	68.8	75.0	63.9	Aug.
70.6	71.2	71.4	71.7	71.4	70.3	69.1	68.0	67.0	66.0	65.3	66.4	73.0	60.4	Sept.
67.6	68.6	69.0	68.9	68.6	67.9	66.5	65.0	64.2	63.1	62.4	63.7	70.3	58.0	Oct.
64.6	65.9	65.9	65.7	65.2	63.6	62.3	60.9	59.6	58.2	57.2	59.1	67.1	52.3	Nov.
64.7	65.9	65.9	66.0	64.7	63.5	61.0	59.2	58.0	56.6	55.5	57.8	67.6	50.5	Dec.
65.7	66.6	66.8	66.9	66.6	65.8	64.8	63.4	62.1	60.9	60.1	61.4	69.1	54.7	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

SAN FRANCISCO, CAL.

[λ=37° 48′ N.; φ=122° 26′ W.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	51.8	51.8	51.2	51.1	50.6	50.1	50.0	49.7	49.6	49.7	49.9	50.4	51.1
Feb	53.5	53.2	52.8	52.3	51.8	51.1	50.5	49.9	49.4	49.6	50.2	51.6	53.3
Mar	52.4	52.2	51.7	51.4	51.0	50.6	50.4	50.2	49.9	49.9	51.0	52.1	53.6
Apr	49.7	49.5	49.5	49.2	49.1	48.7	48.4	48.2	47.9	48.7	50.0	51.4	52.4
May	54.0	53.8	53.5	52.8	52.5	52.4	51.8	51.6	52.2	53.3	54.9	56.3	58.2
June ...	53.1	52.8	52.7	52.2	52.1	51.7	51.7	51.8	52.5	54.1	56.4	58.3	60.1
July	55.7	55.6	55.5	55.2	54.8	54.8	54.7	54.6	54.9	55.8	57.6	59.4	61.3
Aug	56.6	56.5	56.5	55.9	55.8	55.6	55.6	55.5	55.4	55.7	56.4	57.7	59.6
Sept....	56.6	56.1	56.0	55.9	55.6	55.4	55.2	55.6	55.4	55.5	56.6	57.8	59.8
Oct.....	55.8	55.5	55.1	54.8	54.6	54.4	54.0	54.2	53.5	53.6	54.8	57.0	59.5
Nov	52.2	51.7	51.4	51.2	50.8	50.5	50.2	50.2	49.6	49.3	50.0	51.4	52.5
Dec	52.0	51.4	50.9	50.5	50.2	50.0	49.5	49.8	49.0	49.3	49.5	50.4	51.2
Year....	53.6	53.3	53.1	52.7	52.4	52.1	51.8	51.8	51.6	52.0	53.1	54.5	56.0

SANTA FE, N. MEX.

[λ=35° 41′ N.; φ=105° 57′ W.]

Jan	30.9	30.5	29.7	29.2	28.4	28.2	27.8	28.1	27.0	28.3	31.6	34.3	36.1
Feb	30.3	29.5	29.1	28.7	27.9	27.3	26.5	25.7	25.5	27.6	30.9	33.0	34.8
Mar	38.5	37.6	36.0	35.2	34.1	33.2	32.8	32.7	33.4	36.9	39.6	41.6	44.0
Apr	44.9	43.8	42.5	41.2	40.2	39.6	38.9	38.7	42.2	45.6	48.2	49.9	51.8
May	54.7	53.9	52.6	51.2	49.0	48.1	47.2	48.6	53.9	56.7	59.1	60.6	62.3
June ...	66.3	64.8	63.4	62.0	60.8	59.2	58.5	60.1	65.1	67.9	70.4	72.0	74.4
July	62.7	61.9	61.3	60.3	59.1	58.4	57.8	58.9	62.4	64.7	66.9	68.8	70.5
Aug	64.4	63.5	62.5	61.4	60.1	59.6	58.9	59.0	63.7	65.8	68.2	70.4	72.4
Sept....	57.6	56.9	55.8	55.0	54.3	53.8	52.7	51.9	55.0	58.4	60.7	63.2	65.7
Oct.....	45.9	45.2	44.4	43.9	43.1	42.6	42.1	41.8	42.7	45.2	48.2	50.2	51.7
Nov	35.8	34.8	34.1	33.7	32.9	32.4	32.0	31.9	31.0	34.7	38.7	41.3	43.5
Dec	32.2	31.4	30.7	30.5	29.2	28.6	28.1	28.8	28.3	29.9	34.1	36.8	39.7
Year....	47.0	46.2	45.2	44.4	43.3	42.6	41.9	42.2	44.2	46.8	49.7	51.8	53.9

SAVANNAH, GA.

[λ=32° 5′ N.; φ=81° 5′ W.]

Jan	44.8	44.2	43.8	43.6	43.4	43.0	42.8	43.4	45.4	48.8	51.7	53.9	54.6
Feb	49.9	49.2	48.3	47.6	47.0	46.4	46.0	47.2	49.9	52.9	55.7	58.2	60.3
Mar	53.0	52.3	51.6	51.1	50.9	50.5	50.5	52.1	55.3	59.3	62.1	63.5	64.7
Apr	63.5	63.1	62.6	62.0	61.6	61.2	62.6	65.4	68.5	71.3	73.2	75.0	76.1
May	71.3	70.9	70.4	70.0	69.6	69.7	71.7	74.5	78.5	81.0	83.2	84.1	84.7
June ...	74.4	73.9	73.7	73.3	73.0	73.2	74.8	77.4	80.2	82.3	84.2	85.2	85.4
July	77.5	77.3	77.0	76.5	76.4	76.4	77.5	80.1	82.3	84.6	86.0	87.5	88.7
Aug	76.5	76.2	75.7	75.4	74.9	74.4	75.6	78.7	81.7	84.6	86.6	87.7	88.1
Sept....	72.8	71.7	71.1	70.4	69.7	69.1	69.9	73.0	76.9	80.5	82.6	83.6	84.1
Oct.....	62.4	61.7	60.6	59.8	59.2	58.9	59.2	61.5	65.2	68.9	71.8	73.5	74.8
Nov	60.3	59.1	58.6	57.5	56.8	56.3	56.2	57.2	59.7	63.6	66.4	68.3	69.4
Dec	45.5	44.5	44.0	43.5	42.7	42.3	42.0	43.0	45.3	48.5	51.7	54.5	56.2
Year....	62.7	62.0	61.4	60.9	60.4	60.1	60.7	62.8	65.7	68.9	71.3	72.9	73.9

WASHINGTON, D. C.

[λ=38° 54′ N.; φ=77° 3′ W.]

Jan	30.7	30.4	30.0	29.7	29.4	29.4	29.3	29.6	30.9	32.8	34.2	35.4	36.5
Feb	34.1	33.4	33.4	32.7	32.2	31.8	31.5	32.1	32.9	34.2	36.1	38.4	39.7
Mar	35.3	34.7	34.0	33.2	32.8	32.5	32.5	33.9	36.2	38.0	39.8	41.7	43.1
Apr	51.7	50.7	49.8	49.3	48.7	48.4	49.5	51.9	54.5	56.8	58.7	60.9	62.6
May	63.5	62.6	61.8	61.1	60.5	60.6	62.7	64.9	67.7	69.9	72.0	73.7	74.3
June ...	66.8	66.1	65.0	64.2	63.5	64.1	65.9	67.7	70.1	72.2	74.0	75.5	76.9
July	72.0	71.4	70.7	70.1	69.6	69.9	71.9	74.0	76.6	78.4	79.7	80.9	82.4
Aug	70.0	69.3	68.4	67.7	67.4	67.2	69.3	72.2	75.7	78.5	80.3	81.7	82.9
Sept....	61.8	61.2	60.6	60.1	59.8	59.7	60.8	64.1	66.7	69.0	71.5	73.2	74.3
Oct.....	49.8	49.2	48.7	48.1	47.8	47.6	47.9	49.9	53.0	55.3	57.8	59.4	61.0
Nov	47.7	46.9	46.3	45.7	45.5	45.0	44.4	45.7	48.3	50.9	53.6	55.6	57.3
Dec	32.6	32.4	32.2	31.9	31.5	31.1	30.8	31.3	32.4	34.8	37.1	39.0	40.7
Year....	51.3	50.7	50.1	49.5	49.1	48.9	49.7	51.4	53.8	55.9	57.9	59.6	61.0

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR EACH HOUR OF SEVENTY-FIFTH MERIDIAN TIME—Continued.

SAN FRANCISCO, CAL.

[h_t = 161 ft.; local time, 3h 10m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1896.
52.3	53.1	54.2	55.4	55.5	54.5	53.7	53.2	53.1	52.7	52.5	52.0	57.0	47.5	Jan.
55.6	57.9	59.7	61.4	61.5	60.2	58.7	57.1	55.9	54.9	54.2	54.4	62.5	48.1	Feb.
54.8	56.5	58.1	58.5	58.6	57.8	56.6	54.7	53.8	53.7	53.2	53.4	60.4	48.2	Mar.
53.8	54.8	55.2	54.8	54.8	54.2	53.4	52.4	51.2	50.5	50.0	51.2	56.5	46.7	Apr.
59.1	59.7	60.3	60.6	60.4	59.5	59.0	57.5	55.9	54.6	54.5	55.8	62.3	50.3	May.
60.5	61.1	61.1	60.9	60.5	59.6	58.9	57.3	55.9	54.1	53.8	56.0	63.7	50.6	June.
62.4	62.9	63.3	63.1	62.6	61.5	60.3	59.0	57.8	56.5	56.2	58.1	65.3	53.5	July.
61.3	62.2	63.1	63.4	63.8	63.1	61.4	60.0	58.6	57.2	56.9	58.5	64.9	54.1	Aug.
61.4	62.8	63.5	63.5	63.0	61.6	60.1	58.9	58.0	57.2	56.9	58.3	64.9	54.4	Sept.
61.2	62.5	63.8	63.4	62.9	60.9	59.2	57.9	57.2	56.3	56.3	57.4	65.7	52.0	Oct.
53.9	55.6	56.6	57.2	57.0	55.9	54.8	53.6	53.1	52.9	52.4	52.7	58.5	48.4	Nov.
53.0	53.9	55.2	55.9	56.4	55.8	54.7	53.7	53.1	52.4	52.2	52.1	57.7	47.8	Dec.
57.4	58.6	59.5	59.8	59.8	58.7	57.6	56.3	55.3	54.4	54.1	55.0	61.6	50.1	Year.

SANTA FE, N. MEX.

[h_t = 47 ft.; local time, 2h 4m slow.]

37.7	39.0	40.8	41.1	40.4	38.4	35.1	33.6	33.2	32.7	32.0	33.1	42.8	25.0	Jan.
36.7	38.4	39.6	40.3	40.7	39.8	37.5	34.3	33.0	32.0	31.7	32.5	42.5	23.6	Feb.
45.7	47.1	48.1	48.6	48.9	48.2	46.7	43.8	41.3	39.5	38.0	40.5	51.4	29.6	Mar.
53.4	55.2	56.3	57.1	57.8	57.5	56.9	54.3	50.0	47.7	46.5	48.3	60.4	35.3	Apr.
63.8	65.9	67.1	68.2	69.0	68.5	68.0	66.1	61.9	58.8	57.0	58.8	70.7	45.3	May.
76.2	77.4	78.0	78.6	78.7	77.8	76.9	75.2	71.6	69.1	67.6	69.7	81.2	56.8	June.
72.4	73.2	73.4	73.3	72.2	71.7	70.3	68.8	66.8	65.8	63.9	66.1	77.2	56.5	July.
73.9	74.4	75.5	75.9	75.2	74.0	72.1	69.6	68.2	66.5	65.7	67.5	78.9	57.2	Aug.
67.3	68.4	68.7	69.3	69.1	67.6	65.7	62.2	60.7	59.3	58.1	60.7	71.8	50.5	Sept.
52.8	54.3	54.7	54.4	54.4	52.7	50.8	48.2	47.0	46.2	45.7	47.8	57.2	39.8	Oct.
45.4	47.2	47.8	48.3	47.2	43.2	40.6	38.2	37.1	36.6	36.1	38.5	49.6	28.6	Nov.
41.6	43.9	44.8	44.4	43.5	39.9	36.5	34.8	34.0	33.6	32.8	34.9	46.0	25.5	Dec.
55.6	57.0	57.9	58.3	58.1	56.6	54.8	52.4	50.4	49.0	47.9	49.9	60.8	39.5	Year.

SAVANNAH, GA.

[h_t = 63 ft.; local time, 24m slow.]

55.5	55.9	55.3	53.5	51.6	50.5	49.7	48.4	47.3	46.6	45.9	48.5	56.9	41.0	Jan.
61.4	61.8	61.5	59.8	57.3	55.6	54.3	53.1	52.3	51.5	50.7	53.3	64.2	43.1	Feb.
65.6	65.5	64.4	63.0	60.8	58.2	57.1	56.2	55.6	55.0	54.0	57.2	68.1	47.1	Mar.
75.9	75.4	74.4	72.6	70.8	68.3	66.7	65.5	65.0	64.2	63.8	67.9	78.1	59.2	Apr.
83.7	82.6	81.4	79.8	77.8	76.0	74.8	73.7	73.1	72.5	72.1	76.1	87.0	68.2	May.
85.5	84.5	82.6	81.9	80.8	79.1	77.4	76.6	76.1	75.6	74.9	78.6	88.3	71.0	June.
88.5	87.4	86.6	85.5	83.5	82.4	80.8	80.2	79.1	78.6	78.0	81.6	90.9	74.4	July.
87.9	87.2	85.5	84.8	82.9	81.4	79.8	78.9	77.8	77.2	76.8	80.7	90.6	72.9	Aug.
84.8	84.1	83.3	81.7	79.9	77.5	76.4	75.6	74.9	74.1	73.4	76.7	86.4	68.3	Sept.
75.2	74.8	74.0	72.3	69.9	68.2	67.1	66.2	65.3	64.5	63.5	66.6	76.7	58.2	Oct.
70.3	70.3	69.5	67.5	65.3	63.9	62.9	62.3	61.4	60.5	59.9	62.6	72.4	54.5	Nov.
57.6	57.8	57.4	55.8	53.7	52.0	50.9	49.8	49.0	47.8	46.8	49.3	59.0	40.7	Dec.
74.3	73.9	73.0	71.5	69.5	67.8	66.5	65.5	64.7	64.0	63.3	66.6	76.6	58.2	Year.

WASHINGTON, D. C.

[h_t = 59 ft.; local time, 8m slow.]

38.0	38.0	38.1	37.4	36.2	34.9	33.9	33.1	32.4	31.4	31.2	33.0	40.1	26.5	Jan.
40.4	41.0	41.2	40.7	39.5	37.8	37.2	36.3	36.0	35.6	34.7	36.0	45.2	28.2	Feb.
44.1	44.8	44.8	44.2	43.0	41.1	40.0	38.6	37.5	36.6	35.8	38.3	47.6	29.4	Mar.
63.9	64.7	65.0	64.7	63.4	61.3	59.2	57.0	55.3	54.0	53.0	56.5	66.5	46.7	Apr.
75.5	76.0	75.7	75.8	74.3	72.5	69.9	68.3	66.9	65.5	64.4	68.3	78.6	59.0	May.
77.8	78.2	77.3	76.3	75.8	74.1	72.0	70.5	69.2	68.4	67.7	70.8	79.9	62.7	June.
82.8	83.2	83.0	81.9	80.5	78.3	76.8	75.2	74.1	72.9	72.5	76.2	85.3	68.1	July.
84.1	84.5	84.1	83.0	81.4	78.7	76.2	74.2	72.8	71.9	70.8	75.5	86.0	65.6	Aug.
75.5	76.1	75.4	74.3	72.4	69.6	67.7	66.2	64.8	63.8	62.6	67.1	78.1	57.6	Sept.
62.0	62.3	61.8	60.7	58.5	55.7	54.3	52.7	51.8	50.9	50.2	54.0	63.7	44.3	Oct.
57.9	58.4	57.7	56.3	54.3	52.8	51.8	50.5	49.8	48.8	47.9	50.8	60.8	40.5	Nov.
42.0	42.5	42.4	41.2	39.4	37.7	36.4	35.3	34.6	33.9	33.3	35.7	44.4	26.9	Dec.
62.0	62.5	62.2	61.4	59.9	57.9	56.3	54.8	53.8	52.8	52.0	55.2	64.7	46.3	Year.

Blank page retained for pagination

Blank page retained for pagination

WIND—VELOCITY AND FREQUENCY.

BISMARCK, N. DAK.

[λ=46° 47′ N.; φ=100° 38′ W.] [Seventy-fifth Meridian Time.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	9.7	9.2	8.6	8.0	7.3	7.2	7.0	7.5	7.5	8.2	8.5	8.3	10.1	10.5	11.7	12.6	12.3
Feb	7.9	8.2	7.9	7.5	7.4	8.2	8.5	9.3	9.2	9.3	10.2	11.8	12.3	13.3	13.9	13.6	13.3
Mar	6.3	6.2	5.8	5.3	6.6	7.3	8.2	8.1	8.8	9.4	10.7	11.9	13.1	13.2	13.7	13.9	13.5
Apr	10.7	10.0	9.7	9.8	10.2	10.6	10.5	10.7	11.8	13.5	14.9	15.3	15.9	16.4	16.6	16.6	16.4
May	8.7	9.0	9.2	9.1	9.4	8.9	9.2	9.5	10.9	13.1	15.5	16.0	16.4	16.5	17.1	16.0	15.8
June	7.0	7.3	6.9	6.1	6.8	6.8	6.6	8.4	9.9	10.6	12.3	13.1	13.5	13.7	13.7	13.5	13.9
July	5.4	5.1	5.7	5.0	4.9	4.0	4.5	5.1	6.5	7.5	8.5	8.4	9.5	9.9	10.0	10.1	10.2
Aug	6.2	5.8	5.7	6.5	6.1	6.1	6.1	5.9	6.8	8.7	10.0	11.4	12.8	12.6	12.9	12.7	12.7
Sept	7.4	6.2	6.5	6.0	6.3	6.2	5.9	5.6	6.1	7.3	9.3	10.8	12.2	13.0	13.4	13.8	15.2
Oct	6.2	6.6	6.9	6.6	7.2	7.5	7.3	6.9	6.6	6.7	7.9	9.0	10.4	11.3	11.5	12.4	12.5
Nov	9.7	9.8	9.8	9.8	10.1	9.8	9.1	9.6	9.5	9.6	10.3	11.4	12.0	12.0	12.2	12.7	12.0
Dec	6.7	6.7	6.4	6.3	6.2	5.8	6.5	5.5	5.4	5.3	5.5	5.2	6.2	6.9	7.5	7.9	7.9
Year	7.7	7.5	7.4	7.2	7.4	7.4	7.4	7.7	8.2	9.1	10.3	11.0	12.0	12.4	12.8	13.0	13.0

BOSTON, MASS.

[λ=42° 21′ N.; φ=71° 4′ W.]

Jan	12.4	12.6	12.7	12.1	12.1	12.1	12.5	12.4	12.6	12.7	12.9	12.7	12.9	13.5	13.0	13.3	12.8
Feb	13.4	12.2	12.0	12.0	12.8	13.9	14.0	14.3	14.9	16.3	16.1	17.0	17.2	17.9	18.0	17.9	17.0
Mar	15.2	15.3	14.9	14.6	14.9	14.2	15.1	16.1	17.1	17.5	18.2	18.6	18.5	18.3	17.9	18.8	18.6
Apr	9.9	10.2	10.0	9.8	9.6	10.2	10.8	10.8	11.8	12.3	13.1	13.4	13.9	13.8	14.0	14.4	13.4
May	8.4	8.3	7.7	7.6	7.8	7.9	8.5	9.9	11.4	11.7	13.0	13.6	13.4	14.2	14.5	13.9	13.5
June	8.9	8.9	9.1	9.2	9.1	8.5	8.9	9.5	10.3	10.8	10.9	12.0	13.0	13.3	13.4	13.1	12.4
July	9.2	8.7	8.6	8.5	7.8	7.6	8.4	8.8	9.4	10.1	10.4	11.8	12.3	13.3	13.4	13.5	12.4
Aug	7.6	7.6	7.5	7.5	7.0	7.1	7.2	7.3	7.6	7.8	8.8	9.7	10.3	10.1	10.2	10.0	10.1
Sept	10.2	10.2	10.2	10.2	9.9	10.4	10.5	11.2	11.9	13.5	13.5	13.3	13.0	12.9	13.1	13.3	12.5
Oct	10.9	10.7	10.6	10.9	10.6	10.4	10.8	11.3	12.5	13.4	13.1	12.9	13.3	13.4	13.2	12.8	12.0
Nov	10.6	10.3	10.1	10.1	10.1	10.4	10.6	11.4	11.6	11.9	12.8	12.8	12.6	12.6	12.4	11.9	11.0
Dec	11.4	11.4	11.5	12.5	12.4	12.4	12.9	13.1	13.4	13.6	13.8	14.4	14.5	14.7	14.1	12.8	11.3
Year	10.7	10.5	10.4	10.4	10.3	10.3	10.8	11.3	12.0	12.6	13.0	13.5	13.7	14.0	13.9	13.8	13.1

BUFFALO, N. Y.

[λ=42° 53′ N.; φ=78° 59′ W.]

Jan	10.0	9.0	9.3	9.2	9.1	9.2	9.2	8.9	9.0	9.2	9.2	9.3	9.4	9.7	10.0	10.2	10.1
Feb	14.9	15.5	16.0	16.5	16.5	16.3	16.3	16.2	16.3	16.3	17.0	17.3	17.6	17.6	16.8	17.1	15.6
Mar	17.5	17.8	17.0	16.9	15.9	15.6	15.2	15.2	16.2	16.6	17.7	18.3	19.2	20.0	20.5	20.8	20.8
Apr	13.6	13.8	13.6	13.5	14.1	14.2	13.5	13.6	14.3	14.2	13.7	14.7	15.1	14.7	14.9	15.3	14.9
May	13.6	13.2	13.2	13.3	13.7	13.1	13.1	13.8	15.0	14.5	14.8	15.4	15.9	16.3	16.8	16.7	17.2
June	10.7	10.4	10.3	10.1	10.1	10.3	9.9	9.5	10.5	11.3	11.8	11.9	12.9	12.9	13.6	13.9	13.9
July	10.6	11.0	10.9	11.1	10.8	11.1	10.3	10.8	12.3	13.2	13.6	14.0	15.3	15.3	15.1	14.9	13.9
Aug	10.6	11.0	11.8	11.3	10.7	10.9	11.2	12.4	12.0	12.5	13.4	13.6	13.7	13.5	13.5	14.2	13.8
Sept	12.1	11.2	11.4	12.2	12.7	11.7	11.9	11.7	11.9	13.0	13.5	13.7	14.7	15.2	16.2	16.5	15.2
Oct	11.3	12.4	12.8	12.8	13.2	13.0	12.8	13.4	14.0	14.0	14.9	15.2	16.3	16.2	16.6	15.6	14.5
Nov	18.5	19.1	19.2	18.6	17.7	18.1	18.0	18.7	19.0	18.5	18.1	18.0	18.8	19.8	19.6	19.7	20.4
Dec	17.1	17.0	16.7	16.5	16.2	15.7	14.9	15.1	15.5	15.9	17.5	17.3	18.3	18.0	17.8	16.5	17.4
Year	13.4	13.4	13.5	13.5	13.4	13.3	13.0	13.3	13.8	14.1	14.6	14.9	15.6	15.8	16.0	16.0	15.6

CHICAGO, ILL.

[λ=41° 53′ N.; φ=87° 37′ W.]

Jan	16.0	16.5	15.9	15.4	14.8	14.5	14.8	14.8	15.3	15.7	15.8	15.1	15.8	15.3	15.1	15.3	15.6
Feb	20.4	20.2	19.1	18.8	18.7	18.3	18.7	18.9	18.9	18.6	18.9	20.0	20.6	20.3	20.4	21.0	21.1
Mar	16.4	16.8	17.4	17.6	18.0	18.0	19.0	20.4	20.7	20.7	21.0	20.8	21.4	20.0	19.1	18.3	18.9
Apr	18.8	19.8	19.5	19.2	19.1	18.6	18.8	18.9	18.6	20.0	19.8	20.0	21.2	21.6	22.2	22.7	22.6
May	17.4	18.1	18.2	17.0	16.3	16.2	16.9	16.8	17.7	19.0	19.7	20.5	20.3	20.5	21.5	21.5	21.1
June	14.3	13.3	13.4	13.0	12.8	13.4	14.2	14.6	14.0	14.2	14.8	14.9	15.9	16.5	16.0	15.8	15.0
July	15.2	14.5	14.5	14.3	13.5	12.9	12.9	12.7	13.4	14.1	14.1	14.3	15.8	16.8	16.7	17.2	17.6
Aug	14.2	14.1	13.9	13.7	13.9	12.9	13.2	12.6	12.0	12.9	13.6	14.2	14.2	15.6	15.5	15.3	16.0
Sept	15.9	16.6	16.2	14.8	14.8	14.8	15.3	15.6	16.6	16.9	17.2	17.3	18.1	17.6	17.6	18.2	18.0
Oct	16.7	16.9	17.0	17.6	16.5	16.1	16.1	16.3	16.0	16.2	16.4	16.4	17.0	17.6	17.9	17.8	17.0
Nov	19.7	19.2	18.7	19.2	19.1	19.0	18.7	18.3	18.1	18.6	19.0	19.3	20.8	21.1	21.3	21.0	20.5
Dec	15.2	14.6	14.3	14.6	14.3	14.9	15.5	15.3	16.0	15.8	16.5	16.7	17.9	16.7	17.1	16.4	16.5
Year	16.7	16.7	16.5	16.3	16.0	15.8	16.2	16.3	16.4	16.9	17.2	17.5	18.2	18.3	18.4	18.4	18.3

WIND—VELOCITY AND FREQUENCY.

BISMARCK, N. DAK.

[h_a = 29 ft.; local time, 1h 42m slow.] [Seventy-fifth Meridian Time.]

6h	7h	8h	9h	10h	11h	Mid.	Mean.	Max. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1896.
12.3	10.8	9.7	8.7	9.0	9.3	9.4	9.3	46	103	79	172	66	10	10	28	264	12	Jan.
12.2	10.6	8.4	7.8	8.3	8.2	7.7	9.8	48	84	53	51	7	98	36	59	293	15	Feb.
13.1	12.2	10.4	8.7	8.3	7.6	7.5	9.6	44	149	118	47	55	128	22	38	180	5	Mar.
15.8	15.2	14.7	13.3	12.6	13.0	11.8	13.2	43	160	92	101	113	78	25	46	98	8	Apr.
14.3	14.4	13.1	11.0	10.1	9.3	8.6	12.1	44	124	94	101	124	54	15	24	204	6	May.
13.8	13.1	11.6	11.2	9.8	8.8	8.1	10.3	47	137	48	39	156	118	66	21	133	3	June.
10.1	10.2	8.9	8.5	7.0	6.2	5.6	7.4	34	99	109	112	105	84	66	51	104	14	July.
12.5	12.5	10.8	8.5	7.0	6.9	6.4	8.9	36	165	53	66	125	75	64	39	139	18	Aug.
14.5	13.0	10.1	7.7	7.6	7.8	7.2	9.1	36	117	87	69	81	58	41	25	207	36	Sept.
11.9	9.5	7.8	7.0	6.3	5.5	5.5	8.2	37	142	51	52	101	33	32	25	252	56	Oct.
11.3	10.1	10.3	9.9	8.7	9.5	9.7	10.4	54	75	56	112	79	10	11	18	331	28	Nov.
7.8	7.2	6.6	6.2	6.5	6.2	6.7	6.5	29	41	52	106	86	41	22	56	223	115	Dec.
12.5	11.6	10.2	9.0	8.4	8.2	7.8	9.6	.....	1,397	892	1,027	1,098	787	410	429	2,427	317	Year.

BOSTON, MASS.

[h_a = 181 ft.; local time, 16m fast.]

11.6	11.4	11.8	11.8	11.8	11.6	12.0	12.4	40	196	47	43	11	26	59	134	228	0	Jan.
15.5	15.2	15.0	15.0	14.6	14.3	14.0	15.0	58	62	38	63	52	29	63	177	212	0	Feb.
18.3	17.1	16.2	15.5	15.0	14.7	13.8	16.4	50	74	62	39	35	42	82	224	187	0	Mar.
12.7	12.1	10.7	10.2	9.8	9.1	9.3	11.5	40	49	100	169	66	27	53	126	131	0	Apr.
12.4	11.2	10.5	10.0	9.4	9.4	8.6	10.7	42	43	75	144	33	75	147	157	69	0	May.
11.6	11.0	10.1	9.8	9.7	9.7	9.4	10.5	38	39	60	87	26	52	166	180	111	0	June.
11.3	10.4	9.7	9.5	9.1	8.7	9.5	10.1	29	36	53	108	23	66	254	143	61	0	July.
8.8	8.0	7.8	8.0	7.8	7.9	7.8	8.3	35	54	53	135	38	95	150	127	92	0	Aug.
11.1	10.7	9.8	9.1	9.3	9.3	9.5	11.2	41	76	95	76	27	84	139	117	106	0	Sept.
10.9	10.8	10.6	10.7	10.4	10.6	10.7	11.6	50	138	129	20	28	66	102	178	81	1	Oct.
10.3	10.2	10.6	10.0	10.3	10.4	10.5	11.1	33	47	23	46	48	48	204	101	204	0	Nov.
11.6	11.9	11.5	11.6	11.5	11.6	11.5	12.6	40	77	34	6	19	29	219	169	191	0	Dec.
12.2	11.7	11.2	10.9	10.7	10.6	10.6	11.8	.....	892	768	935	407	637	1,637	1,833	1,674	1	Year.

BUFFALO, N. Y.

[h_a = 206 ft.; local time, 15m slow.]

9.9	9.7	9.2	9.3	8.5	8.0	9.4	9.3	48	18	44	156	77	19	58	143	208	20	Jan.
15.1	14.7	15.3	15.3	15.4	15.8	15.0	16.1	64	74	40	110	37	46	88	140	162	0	Feb.
20.3	19.3	17.7	17.6	17.4	16.9	16.5	17.8	54	84	67	70	24	59	132	222	85	0	Mar.
14.1	14.1	13.3	13.4	14.2	14.0	13.4	14.1	54	18	26	106	40	116	188	181	46	0	Apr.
15.6	14.6	14.1	14.5	14.2	13.8	13.2	14.6	53	22	68	99	32	81	226	193	22	0	May.
13.6	12.6	10.5	10.4	10.4	10.3	10.2	11.3	42	50	51	63	56	54	203	174	70	0	June.
13.1	11.2	10.5	10.4	10.9	11.4	11.1	12.2	46	76	38	28	23	86	191	255	48	0	July.
13.9	12.2	11.3	11.4	10.7	11.5	11.5	12.2	48	65	25	14	31	88	208	223	88	2	Aug.
14.4	13.0	13.5	14.2	13.4	12.8	12.5	13.3	57	64	77	92	46	90	162	151	38	0	Sept.
13.5	12.4	12.0	12.2	11.7	12.3	12.6	13.6	48	62	99	128	32	52	99	160	111	1	Oct.
20.5	19.5	20.1	19.7	20.5	20.1	18.2	19.1	72	38	24	61	36	93	181	204	84	0	Nov.
18.0	18.5	18.0	17.6	17.2	16.3	15.8	16.9	56	50	97	95	34	59	143	179	87	0	Dec.
15.2	14.3	13.8	13.8	13.7	13.6	13.3	14.2	.....	620	656	1,022	469	842	1,879	2,223	1,049	24	Year.

CHICAGO, ILL.

[h_a = 274 ft.; local time, 50m slow.]

16.4	17.0	17.4	17.4	17.2	16.6	16.0	15.8	44	106	50	47	62	154	92	147	85	0	Jan.
21.3	21.0	20.7	20.4	20.1	20.3	20.0	19.9	48	136	54	22	8	80	86	218	91	0	Feb.
18.8	18.3	17.4	16.2	15.9	15.9	16.0	18.4	57	174	48	40	74	162	52	127	67	0	Mar.
21.1	20.4	18.3	18.0	18.3	19.3	18.8	19.8	60	75	53	50	110	217	74	90	51	0	Apr.
19.9	19.0	17.8	17.8	16.7	16.3	17.1	18.5	62	44	68	30	111	172	135	142	42	0	May.
14.4	14.4	13.8	13.6	12.8	13.0	12.8	14.2	50	72	204	70	97	77	96	65	40	0	June.
17.2	16.4	15.4	14.8	13.7	14.2	14.8	14.9	36	52	220	65	67	70	104	136	29	0	July.
15.5	13.9	13.2	13.6	14.2	15.3	14.8	14.1	36	72	107	54	65	139	137	128	42	0	Aug.
17.1	16.1	15.8	16.0	16.1	17.0	16.2	16.5	42	136	146	35	28	120	90	85	78	0	Sept.
16.1	15.5	15.7	15.8	16.5	16.0	16.1	16.5	62	154	105	60	67	138	56	108	56	0	Oct.
19.8	20.3	19.8	19.7	19.1	19.3	19.0	19.5	53	56	28	29	37	166	94	222	89	0	Nov.
16.5	16.5	16.5	17.4	16.7	16.4	15.5	16.0	47	100	54	21	31	141	144	160	92	0	Dec.
17.8	17.4	16.8	16.7	16.4	16.6	16.4	17.0	.....	1,177	1,137	524	759	1,635	1,161	1,628	763	0	Year.

WIND—VELOCITY AND FREQUENCY—Continued.

CINCINNATI, OHIO.

[λ=39° 6′ N.; φ=84° 30′ W.] [Seventy-fifth Meridian Time.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	7.8	7.8	7.5	7.7	7.1	7.1	6.9	7.3	7.9	8.3	8.6	8.7	9.1	8.7	8.5	8.4	8.5
Feb	9.2	10.0	9.8	9.9	9.6	9.1	10.0	9.8	10.3	11.3	12.1	12.8	13.7	13.4	13.5	13.8	13.1
Mar	8.5	8.4	7.8	7.2	7.1	6.9	7.2	7.8	9.2	9.8	10.6	11.0	11.3	11.4	12.1	12.2	11.9
Apr	7.0	6.9	6.0	5.8	5.9	5.4	5.8	6.1	8.9	10.2	11.2	11.1	11.9	12.2	12.8	13.1	13.1
May	4.2	4.3	5.0	4.7	4.9	4.0	4.0	5.3	6.8	7.2	8.1	8.9	8.8	9.9	10.4	9.7	9.1
June	4.3	4.5	4.7	4.3	4.5	4.2	4.4	4.8	5.8	7.1	8.0	8.2	9.0	9.6	9.9	10.2	10.0
July	5.8	5.4	5.0	5.0	5.3	5.0	5.4	6.5	7.9	8.5	10.0	9.9	10.5	10.3	10.4	10.2	9.7
Aug	4.6	3.8	3.8	3.7	3.9	3.7	3.6	4.5	5.4	5.7	6.5	7.2	7.3	8.1	8.3	8.1	8.5
Sept	4.7	4.7	4.8	5.3	5.2	5.1	4.8	5.3	6.0	7.2	7.9	8.0	7.8	7.9	8.4	9.5	9.3
Oct	5.3	5.2	5.2	4.9	5.2	5.1	5.0	5.3	6.1	7.2	7.7	7.6	8.1	8.1	8.5	9.4	8.6
Nov	7.6	7.1	7.3	6.8	7.0	6.4	6.7	7.1	7.9	8.8	9.2	10.2	10.1	10.2	10.2	10.3	9.6
Dec	6.6	6.8	6.5	6.2	6.0	5.8	5.7	5.9	6.4	7.2	8.2	9.2	9.6	9.6	9.5	9.0	8.2
Year	6.3	6.2	6.1	6.0	6.0	5.7	5.8	6.3	7.4	8.2	9.0	9.4	9.8	10.0	10.2	10.3	10.0

CLEVELAND, OHIO.

[λ=41° 30′ N.; φ=81° 42′ W.]

Jan	13.7	13.1	13.0	12.7	11.7	11.4	11.9	11.8	12.4	13.2	13.6	14.1	14.6	14.7	14.7	14.6	14.1
Feb	16.4	17.1	16.7	16.3	15.6	16.2	17.9	16.7	16.9	17.2	17.7	17.3	17.8	18.2	18.2	17.3	16.8
Mar	15.6	15.7	15.2	15.3	14.7	14.4	14.9	14.5	15.3	15.9	16.5	17.0	17.6	18.7	18.7	18.2	18.4
Apr	12.4	12.8	13.2	13.5	13.9	14.4	15.2	14.9	15.0	15.2	15.3	16.0	16.6	16.7	15.7	15.9	15.3
May	12.3	11.8	10.5	10.2	10.5	10.9	10.5	10.9	12.5	15.3	15.8	16.6	16.0	16.7	15.7	14.7	13.4
June	7.3	7.6	8.0	8.1	7.9	8.3	8.9	10.4	10.0	11.0	11.4	11.5	11.9	11.9	12.3	11.8	11.4
July	11.1	11.3	11.7	10.8	10.5	10.5	10.3	10.7	12.8	12.2	12.3	13.1	13.8	13.8	13.3	12.5	11.9
Aug	9.7	9.6	9.2	9.2	9.3	8.9	9.7	9.9	9.9	10.8	11.5	12.5	12.9	13.8	14.5	13.1	12.7
Sept	12.3	12.1	11.5	11.3	10.6	10.6	10.8	10.9	11.5	11.9	12.6	13.3	13.5	14.4	14.7	13.6	12.9
Oct	14.1	14.3	14.2	13.6	13.6	13.6	13.7	13.8	13.4	13.0	13.3	13.5	14.8	14.8	14.3	14.1	12.5
Nov	18.1	18.0	18.0	18.2	18.1	18.1	18.4	18.5	17.9	17.5	17.2	18.1	19.1	18.9	18.0	17.4	17.3
Dec	15.5	14.7	14.3	14.5	14.3	13.6	13.4	12.9	12.5	13.1	13.6	13.7	15.0	15.2	15.6	15.1	14.8
Year	13.2	13.2	13.0	12.8	12.6	12.6	13.0	13.0	13.3	13.9	14.2	14.7	15.3	15.6	15.5	14.9	14.3

DETROIT, MICH.

[λ=42° 20′ N.; φ=83° 3′ W.]

Jan	9.5	9.6	9.5	9.2	9.8	9.9	9.8	9.8	9.5	10.1	11.0	12.2	12.4	12.4	11.9	11.5	11.1
Feb	12.1	12.6	11.6	12.2	12.6	12.5	12.2	12.9	12.8	13.8	14.1	14.3	14.6	14.5	14.7	14.1	14.4
Mar	10.0	10.6	10.4	10.3	10.1	10.5	10.4	11.0	11.4	12.6	13.4	13.7	14.0	14.5	14.5	14.8	14.0
Apr	9.7	9.5	9.1	9.6	10.1	9.8	10.1	10.4	11.7	12.7	12.7	13.1	13.2	13.4	13.4	13.9	14.0
May	8.9	8.7	8.9	8.6	9.0	9.0	10.1	11.7	11.6	11.8	13.6	14.0	14.2	14.7	14.6	14.1	13.5
June	6.7	6.9	7.2	7.2	6.5	6.3	6.1	6.2	7.1	7.8	8.8	9.1	9.4	9.9	9.7	9.9	9.9
July	7.4	7.7	8.5	8.4	8.0	7.6	7.0	7.4	8.2	8.3	9.3	9.8	10.0	10.2	10.6	10.1	9.6
Aug	6.7	7.3	7.2	7.5	7.0	6.5	6.5	7.2	7.9	8.6	9.1	9.5	9.5	9.7	9.7	9.6	9.5
Sept	7.6	8.1	7.9	8.1	7.8	8.1	8.1	8.1	9.1	9.7	10.1	10.3	10.4	10.7	11.3	11.1	10.8
Oct	7.8	7.9	8.0	8.0	7.9	7.9	8.0	8.5	9.5	10.3	10.8	10.9	11.0	11.1	11.3	11.4	10.8
Nov	11.7	12.0	11.5	11.4	11.8	11.8	11.0	11.2	12.0	13.2	14.0	14.9	14.6	14.7	14.6	14.6	14.1
Dec	9.0	9.0	8.9	8.2	8.2	8.2	7.9	8.2	8.6	9.6	10.3	10.5	10.9	10.8	11.2	10.9	10.3
Year	8.9	9.2	9.1	9.1	9.1	9.0	8.9	9.4	10.0	10.7	11.4	11.9	12.0	12.2	12.3	12.2	11.8

DODGE CITY, KANS.

[λ=37° 45′ N.; φ=100° W.]

Jan	8.5	9.2	9.5	9.9	9.8	8.9	9.2	10.0	9.5	9.3	11.1	11.2	10.7	11.4	11.4	11.5	11.0
Feb	6.8	7.6	8.9	8.0	7.6	8.1	9.3	8.7	8.8	10.9	13.0	15.1	15.5	15.7	16.0	16.0	16.0
Mar	11.6	11.7	10.6	10.2	9.6	9.2	9.1	8.9	8.6	11.2	13.3	14.9	16.6	16.4	16.9	16.8	17.4
Apr	15.4	15.3	15.9	16.4	16.0	14.8	12.6	12.2	14.7	17.0	18.8	19.0	19.1	20.4	20.6	21.4	21.0
May	13.9	13.6	13.8	12.8	12.5	12.7	11.7	11.7	13.7	16.6	17.3	17.8	18.1	18.6	18.6	18.7	18.5
June	13.0	11.8	10.4	9.9	10.3	10.0	9.1	9.4	12.3	14.2	13.7	13.0	12.7	13.0	13.5	13.3	14.0
July	8.9	9.9	9.5	8.7	8.1	8.1	7.5	7.9	9.9	12.0	12.9	12.6	12.7	12.9	13.7	13.7	14.5
Aug	9.6	9.4	9.1	9.0	8.8	8.1	7.5	7.1	9.3	11.4	12.2	11.7	12.3	12.1	12.7	13.9	13.5
Sept	8.8	9.2	8.7	8.3	8.0	7.9	7.8	8.5	9.1	11.6	12.9	12.6	12.1	11.4	11.5	11.5	12.6
Oct	8.2	7.4	7.4	7.6	8.0	7.5	7.9	7.9	7.7	9.1	11.5	12.2	12.5	12.8	12.9	12.9	12.4
Nov	10.0	9.5	9.3	8.9	9.4	9.4	8.9	8.3	8.9	10.2	11.4	12.2	12.3	12.7	13.0	13.7	13.5
Dec	8.4	8.0	8.4	8.7	8.6	8.9	8.8	8.8	8.8	8.9	10.2	11.3	11.3	12.0	11.8	12.4	11.4
Year	10.3	10.2	10.1	9.9	9.7	9.5	9.1	9.1	10.1	11.9	13.2	13.6	13.8	14.1	14.4	14.6	14.6

WIND—VELOCITY AND FREQUENCY—Continued.

CINCINNATI, OHIO.

[h_a = 157 ft.; local time, 38^m slow.] [Seventy-fifth Meridian Time.]

6^h	7^h	8^h	9^h	10^h	11^h	Mid.	Mean.	Max. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1896.
7.8	7.4	7.6	7.4	7.5	7.5	7.2	7.8	27	35	93	99	131	59	98	86	137	5	Jan.
11.7	10.7	10.4	10.2	10.0	9.7	9.4	11.0	40	46	74	34	42	104	152	118	124	0	Feb.
10.9	10.5	9.8	9.0	9.1	9.0	8.7	9.5	34	99	69	117	47	97	50	62	202	1	Mar.
12.1	10.3	9.3	8.0	7.9	7.9	7.9	9.0	37	33	38	80	145	118	126	77	99	3	Apr.
8.8	8.2	7.5	6.4	6.0	4.8	4.3	6.7	34	34	79	99	155	96	95	109	58	20	May
8.9	8.7	6.7	5.2	4.7	5.0	4.5	6.6	27	77	88	99	102	62	98	77	104	11	June.
9.2	8.1	7.4	6.4	6.1	5.7	5.8	7.5	43	43	54	60	125	146	193	61	61	2	July.
8.1	7.4	5.9	5.2	5.5	5.3	4.2	5.8	50	91	87	73	124	133	76	40	116	5	Aug.
8.5	7.3	6.5	5.3	5.1	5.0	5.1	6.4	34	79	126	144	122	64	77	58	46	3	Sept.
8.0	6.7	6.6	6.0	6.1	6.0	5.2	6.5	36	75	88	113	124	57	66	51	152	18	Oct.
8.6	8.4	9.0	8.9	8.3	8.2	7.7	8.4	33	37	26	37	192	163	76	96	93	0	Nov.
7.5	6.8	6.7	6.8	6.7	7.2	7.0	7.3	29	78	78	73	93	161	100	56	99	6	Dec.
9.2	8.4	7.8	7.1	6.9	6.8	6.4	7.7	.....	728	900	1,029	1,401	1,261	1,208	892	1,290	75	Year.

CLEVELAND, OHIO.

[h_a = 201 ft.; local time, 27^m slow.]

13.0	12.0	12.3	12.8	12.6	12.7	13.1	13.1	44	23	63	39	176	59	143	147	92	0	Jan.
16.1	16.6	16.7	16.8	16.8	17.1	16.6	17.0	61	72	72	11	104	125	107	145	60	0	Feb.
17.9	16.5	16.0	14.7	14.3	14.9	15.5	16.1	52	111	84	27	142	54	56	148	122	0	Mar.
14.0	12.5	12.3	12.4	11.6	11.9	12.1	14.1	56	32	72	29	220	68	70	127	103	0	Apr.
11.6	10.3	9.7	8.9	10.1	11.1	11.7	12.4	50	51	117	27	183	82	97	125	60	2	May.
11.6	10.5	8.7	7.9	7.2	7.5	7.1	9.6	41	99	101	49	186	69	35	98	81	2	June.
11.5	10.6	9.0	9.0	10.0	11.8	11.3	11.5	66	106	60	25	186	113	71	90	94	0	July.
12.4	10.1	8.5	8.6	8.5	9.2	9.3	10.6	58	54	66	47	237	102	76	86	78	0	Aug.
11.9	10.5	10.6	10.8	10.7	10.8	11.5	11.9	54	60	114	23	186	112	86	52	87	1	Sept.
11.4	12.3	12.4	12.4	12.1	13.0	13.1	13.4	49	60	76	60	130	118	108	70	122	0	Oct.
16.4	17.3	18.5	19.2	19.1	18.6	18.9	18.1	44	15	27	17	132	186	186	75	83	0	Nov.
14.5	15.4	16.2	16.2	16.0	15.9	15.8	14.7	48	57	86	12	116	162	162	78	71	0	Dec.
13.5	12.9	12.6	12.5	12.4	12.9	13.0	13.5	.....	740	938	366	1,998	1,248	1,195	1,241	1,053	5	Year.

DETROIT, MICH.

[h_a = 166 ft.; local time, 32^m slow.]

10.4	9.8	9.9	9.7	10.2	10.0	9.5	10.4	38	87	26	77	5	93	196	127	133	0	Jan.
13.2	12.8	12.9	12.5	12.8	13.1	12.8	13.2	49	36	132	35	32	9	203	138	111	0	Feb.
13.0	11.7	11.3	11.3	10.6	11.1	10.7	11.9	37	24	164	72	63	10	144	89	178	0	Mar.
12.5	11.2	10.1	10.2	9.5	9.9	9.8	11.2	43	13	61	111	89	37	224	53	132	0	Apr.
12.5	11.3	9.9	8.5	8.6	8.6	8.7	11.1	48	5	75	125	56	26	236	156	63	1	May.
9.0	8.3	6.6	6.5	7.2	8.0	7.4	7.8	50	71	158	100	42	73	107	111	51	3	June.
8.5	7.8	7.2	6.8	7.4	7.1	7.0	8.3	30	93	79	45	45	79	214	152	34	2	July.
9.0	8.0	6.9	6.9	6.8	7.0	7.1	7.9	37	101	67	53	55	89	207	104	67	0	Aug.
9.4	7.6	7.5	8.0	8.4	8.1	8.1	8.9	30	128	98	28	49	61	197	99	56	4	Sept.
8.8	8.0	7.9	8.2	8.5	8.7	8.5	9.1	36	105	115	63	48	50	172	98	91	3	Oct.
13.2	13.0	12.4	12.7	12.8	12.7	12.3	12.8	52	49	50	29	58	79	283	144	27	0	Nov.
9.5	9.2	9.2	9.4	9.4	9.2	9.1	9.4	34	80	84	15	26	70	248	144	75	2	Dec.
10.8	9.9	9.3	9.2	9.4	9.5	9.2	10.2	.....	794	1,109	754	568	676	2,432	1,414	1,021	16	Year.

DODGE CITY, KANS.

[h_a = 52 ft.; local time, 1^h 40^m slow.]

10.0	8.5	8.1	8.0	7.9	8.1	8.6	9.6	34	130	71	26	284	34	43	28	122	6	Jan.
14.7	12.1	7.7	7.0	6.7	6.2	7.3	10.6	37	149	60	16	90	54	57	63	202	6	Feb.
17.0	16.3	14.5	12.6	13.4	12.7	12.5	13.0	50	136	165	42	113	92	33	11	148	2	Mar.
19.9	20.0	18.1	15.3	14.2	15.4	14.7	17.0	59	23	75	32	199	205	50	11	121	3	Apr.
18.1	17.1	15.6	13.6	13.0	14.2	15.0	15.3	49	102	136	58	150	212	21	1	58	6	May.
14.7	14.4	15.1	15.3	13.2	13.0	12.5	12.6	47	35	144	54	338	101	22	6	18	1	June.
13.9	14.1	13.9	12.2	10.4	10.1	8.7	11.1	37	26	103	75	440	59	17	10	5	10	July.
14.6	14.8	12.5	11.2	11.0	11.3	10.9	11.0	32	70	108	61	259	166	23	25	28	4	Aug.
12.8	12.4	10.8	9.6	10.5	10.3	9.8	10.4	34	66	175	33	287	90	24	14	22	7	Sept.
11.5	10.4	9.7	9.4	9.6	9.5	9.1	9.8	36	90	150	53	254	45	26	19	96	10	Oct.
11.7	8.4	7.8	8.9	9.1	9.5	9.6	10.3	37	130	120	24	184	82	23	27	116	14	Nov.
9.5	7.5	7.1	6.9	7.7	8.5	8.6	9.3	40	122	30	5	100	188	52	116	128	2	Dec.
14.0	13.0	11.7	10.8	10.6	10.7	10.6	11.7	.....	1,080	1,338	481	2,697	1,328	393	331	1,065	71	Year.

WIND—VELOCITY AND FREQUENCY—Continued.

EASTPORT, ME.

[λ = 44° 54′ N.; φ = 66° 59′ W.] [Seventy-fifth Meridian Time.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	16.1	15.7	15.6	15.7	16.2	16.6	16.2	15.9	16.3	16.1	15.8	15.6	14.4	14.3	14.1	13.7	14.4
Feb	15.6	15.6	15.4	15.6	15.0	14.4	13.7	13.6	13.5	13.6	13.2	13.4	13.2	14.0	14.7	14.7	14.7
Mar	16.8	16.7	16.6	16.9	17.0	16.6	16.5	17.0	17.6	17.4	17.5	17.3	17.8	18.8	18.5	19.1	18.4
Apr	9.7	9.6	10.2	10.7	10.2	10.0	10.6	11.3	11.3	11.6	11.5	11.9	11.2	11.4	11.6	11.3	10.8
May	8.1	8.9	9.6	9.5	9.0	8.4	8.1	8.8	9.1	10.0	10.5	11.8	12.3	12.5	13.3	13.0	12.2
June	6.4	5.7	6.7	6.9	6.7	7.1	7.5	8.3	8.9	9.6	10.1	10.6	10.5	10.4	10.7	10.7	10.3
July	6.1	6.3	6.1	6.2	5.9	5.7	6.3	7.0	7.3	7.6	7.6	8.5	8.6	9.4	9.9	9.5	9.4
Aug	6.6	6.0	6.0	5.9	5.7	5.3	5.4	6.4	7.2	7.6	7.7	8.8	9.0	9.0	8.9	9.1	8.0
Sept	7.7	8.2	8.3	8.1	8.3	8.7	8.7	9.4	10.0	10.1	10.6	11.3	11.5	11.7	11.5	11.3	10.5
Oct	12.1	11.9	11.7	11.0	11.5	11.6	11.9	12.6	13.0	13.6	13.2	12.9	12.2	12.7	12.7	12.1	11.7
Nov	12.0	11.6	11.1	10.9	11.1	11.4	12.1	12.2	12.3	12.6	12.5	12.4	12.2	11.8	11.3	11.6	11.7
Dec	13.3	13.2	13.4	14.0	14.8	14.8	14.0	13.6	14.7	14.1	13.7	13.5	12.8	13.0	13.0	12.8	13.1
Year	10.9	10.8	10.9	11.0	11.0	10.9	10.9	11.3	11.8	12.0	12.0	12.3	12.1	12.4	12.5	12.4	12.1

GALVESTON, TEX.

[λ = 29° 18′ N.; φ = 94° 50′ W.]

Jan	11.0	10.5	10.4	10.5	10.2	10.0	10.5	10.4	10.0	9.9	11.0	10.4	11.2	11.2	11.5	11.6	12.1
Feb	10.2	10.4	10.5	10.2	11.0	11.4	11.4	12.1	11.7	12.3	12.9	13.0	13.7	14.2	14.6	14.4	14.4
Mar	11.4	12.3	12.3	11.5	11.8	12.1	11.8	11.6	11.3	12.1	12.2	12.1	13.0	13.4	13.2	13.2	12.6
Apr	12.2	11.9	12.1	11.7	11.9	11.5	11.2	11.4	11.9	12.8	13.7	13.6	13.8	13.4	13.6	13.7	13.2
May	11.6	11.5	11.1	11.9	11.2	10.7	10.8	10.8	11.6	12.2	12.6	12.2	12.8	13.4	13.6	13.4	13.4
June	9.4	8.9	10.0	9.8	9.6	8.7	8.4	8.4	9.3	9.6	9.6	9.6	10.7	11.2	11.5	12.3	12.7
July	9.4	9.2	8.9	8.9	8.2	7.4	6.9	6.6	7.7	7.6	8.7	8.5	9.7	10.2	10.7	11.5	11.9
Aug	8.3	8.2	8.5	7.9	7.7	7.4	7.2	7.1	7.5	8.1	8.5	8.5	9.3	10.3	10.7	10.7	10.5
Sept	10.1	10.2	9.4	9.0	8.8	8.9	8.9	9.2	10.0	10.3	10.9	10.5	11.1	10.9	11.2	11.3	11.9
Oct	8.9	8.8	9.1	8.6	9.4	9.4	10.0	10.2	10.5	11.1	10.5	10.0	10.3	9.9	9.6	8.5	7.9
Nov	13.2	13.0	12.9	12.7	13.2	12.9	12.8	12.9	13.2	12.6	12.7	12.4	13.5	14.2	13.9	13.0	13.5
Dec	11.3	11.5	10.9	10.8	10.5	10.2	10.1	10.3	10.6	10.1	10.7	10.7	11.0	11.2	11.0	10.3	10.1
Year	10.6	10.5	10.5	10.3	10.3	10.0	10.0	10.1	10.4	10.7	11.2	11.0	11.7	12.0	12.1	12.0	12.0

HAVRE, MONT.

[λ = 48° 34′ N.; φ = 109° 40′ W.]

Jan	9.2	9.6	9.6	9.5	9.5	9.7	9.1	10.1	10.3	9.4	9.0	9.3	9.0	8.6	8.5	9.1	8.9
Feb	12.1	12.4	12.8	12.4	12.9	13.7	14.0	13.7	13.8	13.9	13.4	14.2	14.4	16.0	15.5	14.9	13.8
Mar	8.1	8.3	8.8	9.0	9.5	9.2	8.1	9.1	9.3	8.8	9.3	10.6	11.7	12.6	12.4	12.4	13.2
Apr	7.3	7.7	6.9	7.7	7.4	6.7	7.6	7.7	8.2	9.4	10.9	11.8	11.1	12.1	11.5	11.7	11.3
May	6.5	6.3	7.5	7.4	7.4	7.6	7.3	8.3	10.3	11.7	12.3	12.0	12.2	13.0	12.9	13.6	14.0
June	5.2	5.6	5.0	5.3	5.9	5.8	5.4	5.2	6.2	6.5	6.7	6.2	7.2	7.3	7.6	7.7	7.5
July	4.9	4.2	4.7	4.7	4.8	4.2	4.0	4.0	4.2	5.5	7.5	7.9	8.4	8.5	8.7	9.0	8.8
Aug	6.1	6.6	6.3	5.9	6.2	6.4	6.6	6.3	7.1	9.0	10.2	10.3	10.8	10.7	10.9	10.5	11.1
Sept	5.4	5.7	6.4	6.2	6.0	6.0	6.5	6.2	6.2	6.5	8.7	9.4	10.3	10.2	11.1	11.4	11.0
Oct	5.6	6.3	5.5	5.7	5.5	5.5	5.0	4.8	4.5	4.8	5.7	6.5	6.7	7.0	7.9	8.0	7.8
Nov	6.5	6.5	6.7	7.1	7.5	7.1	6.8	7.0	7.0	7.0	7.2	7.8	7.3	7.7	7.7	7.3	6.9
Dec	7.6	8.5	9.5	9.9	9.0	9.9	10.9	11.3	12.5	11.6	10.6	10.2	11.0	11.4	10.5	10.5	10.3
Year	7.0	7.3	7.5	7.6	7.6	7.6	7.6	7.8	8.3	8.7	9.3	9.7	10.0	10.4	10.4	10.5	10.4

KANSAS CITY, MO.

[λ = 39° 5′ N.; φ = 94° 37′ W.]

Jan	6.8	6.7	6.9	6.5	6.9	7.1	7.3	8.0	8.4	8.5	9.2	9.4	9.0	8.5	8.2	8.8	9.0
Feb	9.2	9.1	8.8	8.4	8.7	8.7	8.3	7.7	8.0	9.4	9.7	9.8	9.9	9.7	10.1	11.0	10.8
Mar	9.8	9.8	9.9	10.0	9.5	9.1	8.7	8.8	9.1	9.7	10.1	10.5	10.8	10.9	10.6	11.1	11.1
Apr	11.7	10.9	10.4	10.3	10.8	10.3	10.7	10.3	11.8	12.4	13.0	13.0	13.8	14.1	13.7	13.4	13.8
May	7.1	7.3	6.9	7.0	7.4	7.2	7.5	8.2	9.6	10.5	10.6	11.3	12.2	12.5	12.8	13.2	12.9
June	5.0	4.8	5.4	5.5	5.2	4.7	4.8	5.0	5.7	7.0	7.7	7.6	8.4	8.0	8.1	8.3	8.4
July	6.1	6.0	6.3	5.5	5.6	6.2	5.8	6.0	6.8	7.3	7.9	8.5	8.9	8.6	8.4	8.7	8.7
Aug	6.6	6.8	7.4	6.6	6.4	6.2	5.7	6.0	7.0	7.6	8.5	8.5	9.0	9.4	9.0	9.4	9.3
Sept	6.8	6.8	6.9	7.1	7.0	6.9	6.9	6.8	7.3	7.9	9.0	9.5	10.2	10.2	10.6	10.2	9.5
Oct	7.8	7.5	7.5	7.3	6.8	6.7	7.1	7.2	6.7	7.6	8.3	9.2	9.0	9.1	9.2	9.2	9.0
Nov	10.8	11.1	11.5	10.8	10.7	10.3	10.6	10.5	10.9	11.8	12.1	12.2	12.4	12.2	12.2	12.3	11.7
Dec	7.2	6.7	6.8	7.0	7.2	7.0	7.1	7.4	7.8	8.1	8 2	7.8	9.0	9.2	8.9	8.9	8.6
Year	7.9	7.8	7.9	7.7	7.7	7.5	7.5	7.7	8.3	9.0	9.5	9.8	10.2	10.2	10.2	10.4	10.2

WIND—VELOCITY AND FREQUENCY—Continued.

EASTPORT, ME.

[h_a = 74 ft.; local time, 32m fast.] [Seventy-fifth Meridian Time.]

6h	7h	8h	9h	10h	11h	Mid.	Mean.	Max. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1896.
15.1	14.9	15.1	15.8	16.1	16.5	16.2	15.5	50	249	116	26	4	14	48	100	183	5	Jan.
16.2	15.1	17.3	17.6	17.3	17.4	17.1	15.1	60	133	74	61	42	56	56	190	82	1	Feb.
17.9	17.3	18.2	18.6	18.9	17.6	17.3	17.6	60	140	52	112	35	44	106	191	64	0	Mar.
10.2	10.1	10.4	10.8	10.8	10.7	10.6	10.8	48	183	85	100	24	90	77	84	69	8	Apr.
11.8	10.6	10.5	9.4	9.0	9.0	7.9	10.1	36	89	92	94	24	272	69	75	26	4	May.
9.1	7.9	7.2	7.4	7.2	7.6	6.9	8.3	29	76	62	47	25	186	143	102	66	12	June.
8.5	8.3	8.4	7.5	7.1	6.6	6.7	7.5	36	64	38	41	14	215	163	139	43	27	July.
7.4	7.0	7.0	7.4	7.0	6.1	6.8	7.1	27	60	48	40	44	298	82	93	55	24	Aug.
9.8	9.4	8.9	8.2	8.4	8.6	8.7	9.5	39	88	68	30	36	212	104	98	76	8	Sept.
11.7	11.9	12.2	12.1	12.7	12.6	12.2	12.2	58	148	146	30	19	151	44	136	66	4	Oct.
12.9	12.6	13.1	12.2	12.1	12.5	12.5	12.0	47	172	65	20	53	106	104	107	92	1	Nov.
13.7	14.7	15.3	15.5	14.7	13.9	13.7	13.9	56	152	30	5	14	54	108	197	180	3	Dec.
12.0	11.7	12.0	11.9	11.8	11.6	11.4	11.6	.....	1,555	876	606	333	1,699	1,103	1,513	1,001	98	Year.

GALVESTON, TEX.

[h_a = 96 ft.; local time, 1h 19m slow.]

12.0	11.5	12.1	11.7	11.7	11.7	11.1	11.0	35	133	35	163	74	91	123	32	92	0	Jan.
14.0	12.7	12.2	10.8	10.2	10.0	10.4	12.0	37	34	105	50	106	55	146	106	94	1	Feb.
12.6	12.6	12.3	12.7	12.2	11.8	11.6	12.2	44	70	44	46	275	200	27	6	75	0	Mar.
12.8	12.5	12.5	12.4	12.6	12.5	12.5	12.6	38	25	31	55	360	203	31	9	6	0	Apr.
13.1	12.6	12.2	12.0	12.1	11.9	11.6	12.1	33	0	0	15	309	342	76	1	2	0	May.
12.6	12.1	11.2	10.9	10.6	9.6	9.2	10.2	27	22	48	52	120	241	195	25	16	0	June.
11.5	11.2	10.7	9.4	8.9	9.4	9.4	9.3	26	10	14	20	137	363	154	28	18	0	July.
10.5	10.8	9.7	8.8	9.2	8.4	8.4	8.8	44	62	61	27	124	202	197	39	28	3	Aug.
10.8	10.5	10.5	10.8	10.2	10.3	9.8	10.2	34	61	76	66	217	202	64	26	6	2	Sept.
7.4	7.0	6.8	7.9	8.3	8.7	8.8	9.1	38	109	217	107	148	52	52	12	47	0	Oct.
12.9	12.9	13.3	13.7	14.2	13.9	13.9	13.2	39	61	154	94	244	106	54	0	6	0	Nov.
9.8	9.8	9.9	10.2	10.6	10.2	10.8	10.5	32	131	151	70	154	71	17	120	31	0	Dec.
11.7	11.4	11.1	10.9	10.9	10.7	10.6	10.9	.....	718	938	764	2,270	2,128	1,136	405	419	6	Year.

HAVRE, MONT.

[h_a = 33 ft.; local time, 2h 19m slow.]

7.9	7.6	8.2	8.0	8.4	9.9	10.2	9.1	46	42	133	129	3	1	144	141	129	23	Jan.
12.1	11.8	10.6	10.0	10.2	10.8	11.4	12.9	49	17	43	85	0	0	277	126	137	10	Feb.
11.8	11.1	10.2	8.8	9.2	10.0	8.7	10.0	44	53	53	151	30	12	164	106	113	62	Mar.
11.6	10.7	11.4	9.5	8.4	8.6	7.8	9.4	33	45	76	107	19	31	176	97	115	54	Apr.
13.5	12.7	10.7	9.6	7.7	6.4	6.5	9.9	42	53	56	60	60	9	194	157	124	32	May.
7.5	8.2	7.9	7.5	5.7	6.4	5.6	6.5	38	149	52	13	31	18	131	158	118	50	June
8.9	8.6	8.3	6.7	5.5	4.9	4.0	6.3	42	109	52	88	46	37	128	77	149	59	July.
11.1	11.7	11.4	10.4	8.1	8.0	7.2	8.7	42	84	148	49	5	16	169	109	131	33	Aug.
10.3	9.3	8.1	6.2	5.5	5.5	5.1	7.6	28	74	124	47	1	16	158	115	138	47	Sept.
7.6	6.6	4.5	4.2	4.2	4.4	4.5	5.8	25	40	114	102	23	2	161	113	89	98	Oct.
7.3	6.6	6.0	5.7	6.2	6.6	7.0	6.9	35	62	62	88	14	1	94	142	206	51	Nov.
9.7	9.2	9.0	8.7	7.7	7.6	7.7	9.8	44	60	90	64	11	7	215	150	98	50	Dec.
9.9	9.5	8.9	7.9	7.2	7.4	7.1	8.6	.....	788	1,001	983	243	149	2,011	1,492	1,547	570	Year.

KANSAS CITY, MO.

[h_a = 95 ft.; local time, 1h 18m slow.]

8.1	7.2	7.9	7.5	7.2	7.2	7.1	7.8	28	122	48	86	126	122	106	19	112	2	Jan.
10.6	9.8	8.8	8.7	9.3	9.6	9.4	9.3	29	124	84	42	70	70	124	32	150	0	Feb.
11.0	10.8	9.5	9.0	9.5	9.7	10.0	10.0	28	88	159	41	96	100	68	17	174	1	Mar.
12.6	11.5	10.2	9.8	9.3	9.8	10.5	11.6	36	11	57	51	207	205	116	10	63	0	Apr.
11.5	10.9	9.8	8.4	7.8	7.5	7.9	9.5	32	27	56	28	245	221	81	27	59	0	May.
8.3	8.5	7.6	5.7	4.9	5.4	5.1	6.5	32	55	161	46	139	114	66	17	67	55	June.
8.7	8.2	7.4	6.2	6.0	6.3	5.9	7.1	40	76	117	69	104	159	156	20	20	22	July.
8.5	7.9	6.6	5.6	5.9	5.9	5.9	7.3	29	50	104	51	181	186	92	26	51	3	Aug.
8.9	7.7	7.2	6.8	6.5	6.8	6.9	7.9	29	100	179	96	138	72	41	25	69	0	Sept.
8.1	6.9	6.5	7.3	7.3	7.7	8.0	7.8	31	78	98	36	133	99	134	20	142	4	Oct.
10.5	9.4	9.4	9.5	10.2	10.7	10.7	11.0	28	78	66	24	113	84	165	19	172	0	Nov.
7.8	7.2	7.4	7.4	7.8	7.6	8.1	7.7	28	82	84	10	126	105	148	49	134	6	Dec.
9.6	8.8	8.2	7.7	7.6	7.8	8.0	8.6	.....	892	1,215	580	1,676	1,536	1,296	283	1,213	93	Year.

WIND—VELOCITY AND FREQUENCY—Continued.

KEY WEST, FLA.

[λ = 24° 34′ N.; φ = 81° 49′ W.] [Seventy-fifth Meridian Time.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	10.4	10.7	10.6	10.5	10.4	10.3	9.7	10.0	9.9	10.5	11.3	11.5	11.5	11.2	11.0	11.1	11.0
Feb	12.3	12.4	12.0	12.4	12.9	13.2	12.7	13.0	13.4	13.4	13.9	14.2	14.2	13.1	12.8	13.3	13.0
Mar	10.0	10.5	10.7	10.6	10.1	10.4	10.0	10.4	11.1	11.6	11.7	11.9	12.0	12.4	12.3	12.6	12.1
Apr	11.2	10.8	11.2	11.1	10.7	10.5	10.1	11.2	12.1	12.4	13.2	12.8	12.6	12.3	12.8	12.5	12.2
May	9.0	9.1	9.0	8.8	8.9	8.5	8.3	9.3	10.4	10.6	10.8	11.0	10.9	11.0	10.7	10.6	10.4
June	7.6	7.8	8.1	7.6	7.9	7.7	7.9	8.9	9.3	9.4	9.8	9.6	9.3	9.3	9.2	9.0	9.2
July	9.4	8.9	8.6	7.9	8.4	8.6	7.9	9.3	10.4	10.6	11.5	11.7	11.7	11.8	11.9	11.5	12.1
Aug	6.5	5.9	6.0	6.3	6.8	6.4	6.1	7.0	8.1	8.5	8.6	8.0	8.1	8.0	7.8	8.2	7.9
Sept	9.0	8.6	8.6	8.6	8.6	8.9	8.8	9.3	10.2	10.2	10.6	10.5	11.0	10.8	10.3	10.3	9.6
Oct	8.8	9.4	9.2	9.4	9.5	9.4	8.7	9.5	10.6	10.9	11.4	10.5	9.5	9.5	9.9	9.7	9.1
Nov	12.1	12.3	12.5	12.2	12.2	12.1	12.1	12.3	12.4	13.3	13.9	14.0	14.2	14.3	14.9	14.3	14.0
Dec	11.0	11.1	11.0	11.2	11.1	11.6	11.4	11.6	13.0	12.5	12.4	12.6	13.1	13.1	12.8	11.5	12.7
Year	9.8	9.8	9.8	9.7	9.8	9.8	9.5	10.2	10.9	11.2	11.6	11.5	11.5	11.4	11.4	11.3	11.1

MARQUETTE, MICH.

[λ = 46° 34′ N.; φ = 87° 24′ W.]

Jan	10.4	10.5	9.6	9.5	9.6	9.6	10.0	10.1	10.5	10.7	10.9	11.0	11.4	12.0	11.7	10.9	10.3
Feb	11.3	10.6	10.4	10.3	10.1	10.0	10.2	10.4	9.9	9.3	10.1	10.8	11.6	12.0	12.0	11.5	11.3
Mar	10.7	11.9	12.7	12.5	12.5	12.5	13.1	13.2	12.9	12.2	13.2	13.8	15.2	15.2	14.6	14.4	13.3
Apr	9.1	10.2	9.7	9.7	9.9	9.2	9.0	10.1	11.1	11.9	12.4	13.7	13.1	12.7	12.7	13.3	13.0
May	8.4	9.2	8.1	7.5	7.5	8.4	8.6	9.5	11.4	12.8	12.7	13.4	13.7	13.5	12.8	12.1	12.0
June	7.2	7.3	7.2	6.6	6.8	7.3	6.8	6.9	7.2	8.5	9.4	9.7	9.8	10.4	10.3	9.2	8.7
July	7.5	7.5	8.4	8.8	8.1	8.6	8.0	8.3	8.1	8.9	9.5	10.0	10.4	10.4	10.1	9.8	9.0
Aug	9.7	9.6	9.5	9.7	9.4	9.6	9.2	9.7	9.8	10.9	11.1	11.3	11.5	11.0	10.7	10.9	10.0
Sept	10.6	11.4	11.2	11.3	11.7	11.1	11.1	12.6	12.9	12.0	12.2	12.8	13.6	13.9	13.9	13.6	12.6
Oct	10.4	10.1	9.8	9.6	9.4	9.2	9.5	9.5	9.4	10.0	11.1	11.5	11.7	12.0	11.1	10.4	10.3
Nov	11.6	10.7	10.5	11.1	10.8	10.4	9.9	10.5	10.4	10.5	11.4	11.7	12.6	12.4	11.9	12.0	11.0
Dec	9.7	10.1	10.2	9.9	10.1	11.5	11.1	11.4	11.1	12.2	12.1	11.4	10.3	10.8	10.0	9.4	8.6
Year	9.7	9.9	9.8	9.7	9.7	9.8	9.7	10.2	10.4	10.8	11.3	11.8	12.1	12.2	11.8	11.5	10.8

MEMPHIS, TENN.

[λ = 35° 9′ N.; φ = 90° 3′ W.]

Jan	9.7	9.4	9.4	9.8	9.8	9.2	9.6	9.3	9.3	9.4	9.3	9.4	10.1	9.6	9.3	8.5	8.9
Feb	10.7	11.6	11.6	11.3	11.1	11.4	11.0	11.2	11.0	11.4	11.7	11.6	12.0	12.2	11.4	11.8	11.3
Mar	12.0	11.9	12.2	11.5	11.2	11.2	11.7	11.8	11.9	12.8	12.7	12.6	12.3	12.4	11.9	12.6	11.9
Apr	10.4	10.1	9.8	9.4	9.4	9.0	8.4	9.4	10.0	10.5	10.8	11.0	12.2	12.1	13.0	12.7	12.6
May	8.5	8.2	8.3	7.4	8.1	7.6	7.5	8.0	8.9	9.5	9.7	9.5	9.9	10.4	10.2	10.5	11.0
June	7.5	7.2	7.5	7.2	7.1	7.0	6.9	6.9	8.3	8.7	8.0	8.5	8.4	8.9	9.6	10.2	9.4
July	8.1	8.1	7.6	7.3	7.9	8.3	7.5	7.0	8.0	8.3	8.6	8.9	8.9	9.4	9.8	10.5	9.9
Aug	6.6	7.2	7.0	6.7	6.6	6.9	6.9	7.2	7.4	7.3	7.3	8.2	7.9	8.2	8.5	8.4	8.5
Sept	8.7	8.6	8.1	8.5	8.2	8.1	7.8	8.2	7.9	8.6	8.4	8.2	9.1	9.6	9.5	9.2	9.6
Oct	8.0	7.7	8.2	8.0	7.6	7.7	7.2	7.1	7.5	7.7	8.1	8.1	8.4	9.1	9.8	9.8	10.1
Nov	11.3	11.3	10.3	11.0	10.5	10.5	10.4	11.1	11.9	11.8	12.1	12.2	12.8	13.0	11.9	12.1	11.6
Dec	9.0	9.3	9.7	10.0	10.0	9.6	9.4	9.5	9.1	9.5	9.5	9.3	9.2	8.9	8.9	8.7	8.5
Year	9.2	9.2	9.1	9.0	9.0	8.9	8.7	8.9	9.3	9.6	9.7	9.8	10.1	10.3	10.3	10.4	10.3

NEW ORLEANS, LA.

[λ = 29° 58′ N.; φ = 90° 4′ W.]

Jan	8.1	8.2	7.8	8.1	8.0	8.1	8.5	8.5	8.0	8.7	8.8	9.4	9.8	10.1	10.7	10.3	10.2
Feb	9.9	9.6	9.4	9.2	8.5	8.5	8.8	8.8	8.7	9.1	10.1	11.0	11.8	12.6	12.6	12.6	11.8
Mar	8.5	8.9	8.9	8.7	8.6	7.8	7.9	8.5	9.2	11.1	11.7	12.4	13.5	13.7	13.2	12.7	12.6
Apr	7.5	7.0	6.9	6.5	6.3	6.2	5.8	6.3	7.9	9.9	11.1	11.4	11.4	11.4	11.3	11.0	11.2
May	5.0	4.9	4.1	3.9	3.0	3.3	3.6	4.2	6.3	7.4	8.3	8.3	9.2	9.7	9.7	9.5	9.9
June	6.3	5.8	5.5	5.0	4.8	5.2	5.0	5.4	7.5	8.3	8.8	8.4	8.7	8.7	9.6	8.7	8.3
July	5.5	5.3	4.6	4.3	4.4	4.3	4.7	4.9	6.3	7.7	8.0	8.3	9.0	8.4	9.2	9.1	9.1
Aug	4.7	4.6	4.5	4.7	4.1	4.6	4.1	4.9	6.3	7.5	8.0	8.1	8.1	8.6	8.2	8.3	8.0
Sept	5.6	5.8	5.4	5.7	5.8	5.4	5.6	6.2	7.5	9.0	9.0	9.5	10.5	10.3	10.4	10.1	9.4
Oct	6.2	6.7	7.1	7.2	7.3	7.4	7.5	8.1	8.7	9.1	9.6	9.9	10.0	9.7	9.8	8.9	8.5
Nov	9.2	9.4	9.1	9.3	9.4	9.9	9.9	9.8	10.4	10.8	11.7	12.1	12.5	12.8	12.5	11.9	11.7
Dec	8.7	8.7	8.5	9.1	9.4	8.9	9.6	9.2	9.3	10.3	10.7	11.1	11.3	11.6	11.6	11.4	10.8
Year	7.1	7.1	6.8	6.8	6.6	6.6	6.8	7.1	8.0	9.1	9.6	10.0	10.5	10.6	10.7	10.4	10.1

WIND—VELOCITY AND FREQUENCY—Continued.

KEY WEST, FLA.

[h_a = 50 ft.; local time, 27^m slow.] [Seventy-fifth Meridian Time.]

6^h	7^h	8^h	9^h	10^h	11^h	Mid.	Mean.	Max. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm	1896.
10.9	10.1	10.4	10.8	10.8	10.1	10.1	10.6	37	170	290	106	49	49	44	7	28	0	Jan.
13.0	12.9	12.4	12.2	11.6	12.0	11.8	12.8	39	101	196	85	111	71	28	14	86	4	Feb.
12.1	11.2	11.5	11.6	11.8	11.0	10.7	11.3	44	125	195	137	124	57	21	13	70	1	Mar.
12.2	11.5	11.1	10.6	10.9	11.4	11.4	11.6	31	53	194	374	62	4	4	7	21	1	Apr.
10.5	10.3	9.7	9.4	9.1	9.4	9.1	9.8	28	36	104	356	221	14	3	1	8	0	May.
9.3	8.9	8.4	8.1	8.0	8.3	8.2	8.6	23	46	62	156	260	94	47	11	44	0	June.
11.1	10.4	10.3	9.9	9.3	9.3	9.3	10.1	37	3	36	381	244	61	14	5	0	0	July.
8.0	7.2	7.0	7.5	7.1	7.3	6.9	7.3	30	14	137	254	189	72	61	6	11	0	Aug.
9.8	9.8	9.8	10.2	9.6	10.1	9.6	9.7	33	35	192	172	106	94	27	24	69	1	Sept.
8.5	7.8	7.9	8.4	9.0	9.2	9.5	9.4	32	55	289	226	46	22	39	29	39	0	Oct.
12.8	12.6	13.3	14.0	13.1	13.1	12.8	13.1	37	8	286	300	92	11	14	5	4	0	Nov.
12.1	11.9	12.1	12.0	12.2	12.0	11.6	12.0	46	70	415	101	63	28	13	10	44	0	Dec.
10.9	10.4	10.3	10.4	10.2	10.3	10.1	10.5	.....	717	2,396	2,647	1,566	577	315	133	426	7	Year.

MARQUETTE, MICH.

[h_a = 95 ft.; local time, 49^m slow.]

9.2	9.3	9.9	9.9	9.9	10.0	10.6	10.3	40	40	39	20	78	132	31	108	285	11	Jan.
10.4	9.0	9.3	10.3	11.0	11.6	11.9	10.6	46	68	67	25	33	93	47	129	228	8	Feb.
12.6	11.9	10.9	11.0	11.7	12.0	11.9	12.8	52	110	48	2	84	82	91	71	247	9	Mar.
12.1	10.4	9.3	7.9	7.9	8.6	9.0	10.7	36	53	67	39	158	92	66	70	164	13	Apr.
10.0	8.2	6.8	6.3	6.7	7.1	8.3	9.8	52	94	68	65	116	76	105	33	166	21	May.
8.7	7.3	6.7	5.4	5.6	5.7	6.4	7.7	34	88	59	33	88	85	67	68	179	53	June.
7.9	6.6	6.0	4.7	6.3	7.6	8.3	8.3	27	94	118	28	20	57	100	104	184	40	July.
8.6	6.5	6.0	5.2	6.2	8.7	9.5	9.3	45	108	112	34	37	102	110	86	151	5	Aug.
11.5	9.4	9.5	10.5	11.0	11.1	11.0	11.8	43	78	51	17	61	111	136	110	151	3	Sept.
9.6	9.3	8.7	8.3	8.6	9.2	10.0	9.9	37	70	110	26	77	126	89	81	166	0	Oct.
11.1	10.7	11.5	12.3	13.0	12.5	12.0	11.4	44	47	14	39	44	112	106	196	159	2	Nov.
7.5	6.9	8.5	9.1	8.5	8.6	8.8	9.9	42	65	17	42	40	131	76	211	161	1	Dec.
9.9	8.8	8.6	8.4	8.9	9.4	9.8	10.2	.....	913	768	370	839	1,198	1,023	1,268	2,240	165	Year.

MEMPHIS, TENN.

[h_a = 154 ft.; local time, 1^h slow.]

8.5	8.6	8.9	9.3	9.0	9.2	9.1	9.3	30	71	118	91	98	103	84	67	112	0	Jan.
11.4	10.6	9.7	9.7	10.2	10.8	10.7	11.1	38	117	81	69	75	75	102	93	85	0	Feb.
12.1	11.7	11.0	12.3	13.0	12.7	12.4	12.1	36	93	165	70	113	80	37	76	110	0	Mar.
11.3	10.9	8.9	9.2	9.7	10.4	10.5	10.5	44	14	42	86	301	119	75	53	28	1	Apr.
9.0	8.2	7.2	6.9	7.7	7.8	7.6	8.6	42	14	93	89	158	179	122	53	33	3	May.
8.9	8.7	7.9	7.0	7.1	6.6	6.9	7.9	39	85	98	76	125	81	79	76	90	10	June
9.7	9.0	7.8	7.5	7.9	8.5	8.4	8.5	26	77	98	66	74	178	176	37	35	3	July.
9.3	8.5	7.4	7.5	7.1	6.8	6.8	7.5	42	163	72	54	59	156	86	70	80	4	Aug.
8.5	7.8	6.8	7.2	8.2	8.4	8.7	8.4	38	139	88	60	96	111	106	37	76	7	Sept.
9.1	7.9	7.3	7.5	7.9	8.4	8.1	8.2	36	121	114	68	70	82	78	63	143	5	Oct.
10.5	10.4	11.4	11.6	12.3	12.5	12.0	11.5	38	151	47	24	181	120	60	62	70	4	Nov.
8.5	8.7	9.5	9.6	10.3	10.0	9.5	9.3	30	66	78	78	103	162	85	47	121	6	Dec.
9.7	9.2	8.6	8.8	9.2	9.3	9.2	9.4	.....	1,112	1,095	832	1,452	1,446	1,087	734	984	42	Year.

NEW ORLEANS, LA.

[h_a = 120 ft.; local time, 1^h slow.]

9.6	8.7	8.2	8.1	8.1	7.8	7.8	8.7	30	130	124	54	105	74	70	50	134	2	Jan.
11.2	10.9	10.5	10.7	9.9	10.1	9.8	10.2	32	117	53	45	97	107	143	81	50	3	Feb.
11.9	11.4	9.7	9.2	8.9	9.2	9.2	10.3	32	85	105	58	188	128	67	17	94	2	Mar.
11.0	10.4	9.4	8.2	7.7	7.5	7.3	8.8	36	37	47	56	349	96	105	18	8	4	Apr.
10.1	9.5	8.3	7.1	7.0	6.4	5.7	6.8	25	16	70	29	317	183	61	19	17	33	May.
9.1	8.7	7.8	7.0	6.5	6.3	5.7	7.1	30	66	83	68	186	72	92	63	70	21	June.
8.8	8.8	8.0	6.8	6.3	6.5	5.8	6.8	35	78	86	43	211	89	134	39	50	13	July.
7.6	7.0	6.4	5.8	5.6	5.2	5.2	6.3	28	62	136	38	117	75	147	88	66	14	Aug.
8.7	7.8	7.4	7.0	6.6	6.2	6.0	7.5	30	78	215	86	216	35	29	9	34	18	Sept.
6.8	6.5	6.5	5.9	6.2	6.5	6.4	7.8	54	104	265	59	103	20	35	48	92	18	Oct.
11.0	10.1	9.7	10.0	10.0	10.2	9.5	10.5	32	114	256	127	135	23	16	14	34	1	Nov.
9.4	8.6	8.4	8.9	8.5	8.4	8.4	9.6	24	232	196	17	93	51	57	25	73	0	Dec.
9.6	9.0	8.4	7.9	7.6	7.5	7.2	8.4	.....	1,121	1,635	680	2,118	953	956	469	723	129	Year.

WIND—VELOCITY AND FREQUENCY—Continued.

NEW YORK, N. Y.

[λ=40° 43′ N.; φ=74° W.] [Seventy-fifth Meridian Time.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	14.6	14.3	13.8	13.9	13.2	13.6	13.8	14.6	15.3	16.1	16.5	16.3	16.6	15.9	15.9	16.2	15.4
Feb	20.7	19.0	19.4	20.1	18.9	18.8	19.8	19.7	20.3	21.5	21.4	21.4	22.3	21.9	20.8	21.7	21.9
Mar	19.3	19.4	18.0	18.5	17.9	18.4	18.6	19.0	20.0	20.3	20.5	21.3	22.2	22.5	22.1	22.2	22.3
Apr	12.7	11.4	10.0	9.9	10.4	11.3	12.1	12.3	11.9	11.7	12.9	14.2	14.8	15.1	15.7	16.3	16.4
May	10.8	10.8	10.7	10.5	11.2	11.5	11.1	11.3	11.2	12.0	12.6	13.5	14.1	15.6	15.8	14.9	16.0
June	10.2	10.2	10.1	9.6	8.7	8.3	9.0	8.9	9.1	9.3	10.6	11.5	12.2	12.9	12.9	13.4	13.8
July	11.2	11.0	10.9	10.1	9.5	9.6	9.9	10.5	11.0	10.9	12.4	12.9	13.4	13.3	13.8	14.6	14.0
Aug	9.3	8.4	9.0	9.5	9.1	8.7	9.0	8.7	9.3	9.3	9.5	10.3	11.1	11.2	11.5	11.7	13.0
Sept	15.4	13.8	13.1	12.3	11.9	11.5	13.0	12.7	12.5	12.7	13.0	13.1	13.5	14.3	14.2	13.6	13.9
Oct	12.8	12.6	12.0	11.8	12.6	12.8	13.5	13.3	14.2	14.3	14.6	15.2	15.1	15.7	16.2	16.7	16.0
Nov	14.6	13.7	12.7	12.8	13.0	13.1	13.5	13.9	15.2	15.2	15.5	15.6	16.4	16.3	15.8	15.8	15.0
Dec	14.7	14.6	14.9	14.8	14.3	14.5	14.7	14.2	14.7	15.4	14.9	15.5	15.2	15.2	14.2	14.3	14.5
Year	13.9	13.3	12.9	12.8	12.6	12.7	13.2	13.3	13.7	14.1	14.5	15.1	15.6	15.8	15.7	16.0	16.0

PHILADELPHIA, PA.

[λ=39° 57′ N.; φ=75° 9′ W.]

Jan	9.9	9.9	10.3	10.2	10.1	9.7	10.1	10.6	11.8	12.5	12.9	13.2	12.9	12.8	12.5	12.2	11.6
Feb	13.1	12.8	12.3	12.6	13.4	13.6	13.9	13.8	14.1	14.1	14.2	14.9	16.2	16.2	16.2	15.2	14.7
Mar	13.1	12.6	12.4	12.7	12.5	12.2	12.0	13.5	14.6	14.7	15.5	15.3	16.2	16.4	16.6	16.7	15.9
Apr	8.9	8.6	8.4	8.2	7.7	7.7	8.3	9.9	11.2	10.9	11.1	11.5	11.8	12.2	12.5	12.4	13.1
May	7.8	7.9	7.9	8.5	7.5	8.0	8.2	9.2	10.1	10.9	11.5	11.6	11.8	12.4	12.7	12.5	12.0
June	7.5	7.5	7.1	6.7	6.8	7.3	7.5	8.9	8.6	9.6	10.0	10.2	10.3	11.0	11.0	11.1	10.8
July	9.0	8.5	7.7	7.8	7.6	7.4	7.9	9.0	10.0	10.8	11.5	11.6	11.6	12.0	12.1	12.0	12.4
Aug	6.8	7.0	7.0	7.4	7.4	7.2	7.3	8.3	8.4	8.6	8.6	8.4	9.5	9.6	9.5	9.9	10.3
Sept	8.8	8.7	8.4	8.2	8.4	8.5	8.4	10.2	10.6	10.6	11.5	11.2	12.2	12.1	12.3	11.5	11.1
Oct	9.1	8.9	9.1	8.9	8.8	8.7	8.8	10.4	11.3	12.1	12.6	12.5	12.4	12.5	12.2	12.1	11.4
Nov	8.9	9.4	8.9	8.1	8.5	8.6	8.8	9.6	9.7	10.8	11.4	11.5	11.9	12.3	12.0	11.2	10.5
Dec	8.8	9.8	9.4	9.6	8.7	8.5	8.9	9.6	10.2	10.7	11.0	10.9	11.5	11.4	11.5	10.9	10.1
Year	9.3	9.3	9.1	9.1	9.0	9.0	9.2	10.2	10.9	11.4	11.8	11.9	12.4	12.6	12.6	12.3	12.0

PITTSBURG, PA.

[λ=40° 32′ N.; φ=80° 2′ W.]

Jan	6.4	6.2	6.2	6.2	6.0	6.3	6.2	6.2	6.5	7.2	7.7	7.7	7.9	7.6	7.9	7.8	7.6
Feb	9.0	8.8	9.2	8.8	9.0	9.1	9.3	9.2	8.9	9.8	9.8	10.3	10.8	10.4	10.8	10.7	10.0
Mar	6.9	7.2	7.1	6.9	7.2	6.9	7.1	7.3	8.1	8.2	8.3	8.4	9.0	9.7	9.6	9.7	9.5
Apr	4.7	4.8	4.7	4.8	5.0	5.2	5.7	6.0	7.1	8.2	8.7	8.2	8.5	9.2	8.8	9.3	8.6
May	4.5	4.5	4.5	4.1	4.1	4.2	4.4	5.5	6.2	6.9	7.0	6.9	7.6	8.2	8.5	8.7	8.6
June	3.1	2.6	2.8	3.0	2.9	3.1	3.5	4.2	4.9	5.7	6.1	6.7	6.9	7.4	8.0	7.8	7.7
July	4.5	4.2	4.5	4.4	4.0	3.8	4.4	4.9	5.8	6.7	7.3	7.1	6.7	7.5	7.7	7.5	7.6
Aug	3.3	3.4	3.4	3.0	3.4	2.9	3.4	3.8	4.4	5.5	5.6	6.0	5.8	6.7	6.6	6.5	6.3
Sept	3.4	3.3	3.5	4.0	3.9	3.5	3.9	4.2	4.9	5.4	6.0	6.3	6.7	7.2	7.1	6.9	6.6
Oct	4.2	4.5	4.6	3.9	4.0	3.9	4.0	4.7	5.4	5.9	6.7	7.2	7.5	7.4	6.8	7.0	6.6
Nov	6.0	5.9	5.6	6.1	6.3	6.4	6.5	6.6	6.8	7.6	8.3	8.4	8.4	8.1	8.7	8.0	7.8
Dec	5.5	6.0	6.3	5.8	6.1	5.8	5.8	6.0	6.5	6.6	7.2	7.4	7.1	7.4	7.5	7.2	7.0
Year	5.1	5.1	5.2	5.1	5.2	5.1	5.4	5.7	6.3	7.0	7.4	7.6	7.7	8.1	8.2	8.1	7.8

PORTLAND, OREG.

[λ=45° 32′ N.; φ=122° 43′ W.]

Jan	6.8	7.2	7.0	7.3	7.2	7.3	7.5	7.0	7.0	8.1	8.2	6.5	8.0	7.9	7.9	8.7	9.0
Feb	9.0	8.8	8.7	7.7	8.8	8.6	9.0	8.8	8.9	10.2	9.6	9.1	10.6	10.6	11.3	11.6	11.0
Mar	9.0	9.2	9.7	8.8	8.5	8.8	9.0	8.6	8.3	8.7	9.7	10.2	10.7	10.2	10.6	11.7	13.0
Apr	8.2	7.6	8.4	7.5	7.5	8.0	8.5	8.5	8.4	8.7	9.0	9.8	10.8	11.2	11.2	12.1	12.7
May	9.5	8.7	8.8	8.9	8.2	8.0	7.6	8.4	8.5	8.7	9.0	9.3	8.7	9.1	9.7	10.0	9.7
June	8.1	8.2	7.0	5.8	6.0	5.6	6.6	6.6	6.5	6.8	8.1	8.3	8.7	8.1	8.3	8.7	9.0
July	9.8	8.3	6.1	4.0	3.7	3.1	3.2	3.6	3.3	3.6	4.7	6.0	6.9	6.8	6.8	6.7	7.0
Aug	6.9	5.6	5.9	5.8	5.8	5.3	5.0	5.6	5.6	6.5	6.1	6.1	6.9	6.5	6.1	7.1	7.4
Sept	7.5	6.9	6.5	6.7	6.7	7.0	6.8	5.8	5.5	5.6	6.4	7.0	7.8	7.6	7.8	9.0	9.5
Oct	6.0	6.4	6.2	6.4	6.7	6.4	6.4	6.5	6.3	6.2	5.7	5.9	6.1	6.5	6.9	7.6	7.4
Nov	13.0	13.3	13.5	14.3	13.4	13.0	12.6	11.2	10.5	10.7	10.4	11.2	12.1	12.2	12.9	12.8	13.2
Dec	8.5	8.4	8.4	8.9	8.6	8.9	8.9	8.5	8.7	8.4	8.5	8.4	9.4	9.9	9.6	9.6	9.0
Year	8.5	8.2	8.0	7.7	7.6	7.5	7.6	7.4	7.3	7.7	8.0	8.2	8.9	8.9	9.1	9.6	9.8

WIND.—VELOCITY AND FREQUENCY—Continued.

NEW YORK, N. Y.

[h_a=326 ft.; local time, 4^m fast.] [Seventy-fifth Meridian Time.]

6^h	7^h	8^h	9^h	10^h	11^h	Mid.	Mean.	Max. vel.	N.	NE.	E	SE.	S.	SW.	W.	NW.	Calm.	1896.
14.9	15.0	14.6	14.3	15.0	14.1	13.6	14.9	48	109	143	36	8	35	66	111	236	0	Jan.
21.3	21.3	20.4	21.1	21.3	21.5	20.0	20.7	65	46	115	49	40	24	105	179	139	0	Feb.
22.4	21.3	20.6	20.3	19.2	18.0	18.6	20.1	72	53	67	45	32	52	49	158	289	0	Mar.
15.6	14.9	14.8	15.1	13.7	12.7	12.4	13.3	52	43	112	59	94	69	98	108	138	0	Apr.
14.6	14.6	13.7	14.1	14.0	13.3	11.3	12.9	52	28	108	60	124	55	175	102	92	0	May.
13.1	12.2	11.1	11.4	11.4	10.4	10.1	10.8	40	27	55	71	55	121	164	56	168	4	June.
12.6	11.6	11.1	12.4	12.9	11.8	11.5	11.8	50	20	41	37	52	149	233	78	134	0	July.
12.2	11.3	10.4	10.2	10.2	10.0	9.7	10.1	50	67	51	42	94	92	155	66	176	0	Aug.
14.6	14.6	14.9	14.6	14.8	15.3	15.6	13.7	56	68	79	38	67	147	123	48	148	1	Sept.
15.0	15.4	15.7	14.8	13.7	13.0	12.8	14.2	45	114	129	30	17	84	96	78	197	0	Oct.
14.8	14.7	14.1	14.0	13.9	13.5	13.8	14.5	52	53	59	63	44	62	173	100	166	0	Nov.
13.9	13.8	13.9	13.8	13.3	14.1	14.1	14.5	54	121	39	21	9	42	202	117	194	0	Dec.
15.4	15.1	14.6	14.7	14.4	14.0	13.6	14.3	.....	749	997	551	636	931	1,639	1,201	2,076	4	Year.

PHILADELPHIA, PA.

[h_a=184 ft.; local time, .0^m.]

10.2	9.6	10.0	10.1	9.7	9.6	9.5	10.9	34	132	129	73	23	30	66	79	213	0	Jan.
13.7	12.9	13.3	13.3	13.2	12.3	12.1	13.8	39	123	93	51	34	38	70	142	146	0	Feb.
15.2	13.2	12.4	12.7	12.2	12.7	13.1	13.9	50	70	87	46	23	78	57	106	276	0	Mar.
12.4	11.0	11.0	10.3	9.5	9.6	9.2	10.3	36	75	68	91	65	58	136	80	145	1	Apr.
11.1	10.3	9.4	9.0	8.4	8.2	8.6	9.8	36	53	70	110	54	74	152	107	126	0	May.
10.2	9.4	9.2	8.5	8.3	8.0	7.6	8.9	32	101	35	68	36	96	186	67	131	0	June.
11.8	11.0	9.7	9.2	9.5	9.6	9.4	10.0	53	78	11	30	31	117	234	143	100	0	July.
9.6	8.8	8.5	7.9	7.0	7.2	6.6	8.2	32	166	41	43	66	76	168	71	110	3	Aug.
10.5	9.4	9.7	9.2	8.4	8.9	9.1	9.9	42	117	75	61	50	112	149	57	99	0	Sept.
9.7	8.9	9.4	9.4	8.9	8.8	8.7	10.2	38	186	96	34	16	58	97	86	166	4	Oct.
9.5	9.3	9.5	9.2	8.9	9.1	9.0	9.9	36	133	49	38	34	61	198	79	128	0	Nov.
9.2	8.8	9.2	9.4	9.3	8.7	8.4	9.8	36	156	37	23	12	36	161	140	179	0	Dec.
11.1	10.2	10.1	9.8	9.4	9.4	9.3	10.5	.....	1,390	792	666	444	834	1,674	1,158	1,817	9	Year.

PITTSBURG, PA.

[h_a=123 ft.; local time, 20^m slow.]

6.9	6.9	6.6	6.6	6.8	6.6	6.3	6.9	24	34	39	36	132	31	130	174	163	4	Jan.
9.5	9.2	8.8	9.2	8.3	8.3	8.1	9.4	36	50	34	15	90	123	122	146	115	2	Feb.
9.1	8.2	7.9	8.0	7.4	7.4	6.8	8.0	24	73	33	36	113	54	93	163	179	0	Mar.
7.7	6.8	6.2	5.0	5.3	5.5	5.5	6.6	21	59	36	27	120	82	110	148	104	35	Apr.
7.9	6.9	6.1	5.8	5.5	4.6	4.4	6.1	27	40	50	26	148	64	103	170	135	9	May
6.3	6.3	4.7	4.2	3.4	3.3	3.1	4.9	24	112	41	31	75	73	98	121	147	22	June.
6.5	6.2	5.7	5.2	4.6	4.8	4.6	5.7	25	53	26	16	70	122	235	99	102	20	July.
5.9	5.0	4.3	3.9	4.1	3.9	3.4	4.6	20	117	59	18	43	76	140	153	116	21	Aug.
6.0	4.9	4.6	4.1	3.5	3.8	3.8	4.9	24	64	27	79	69	112	125	110	111	23	Sept.
6.2	5.2	5.3	5.4	5.0	4.6	4.5	5.4	23	63	29	75	69	71	115	180	125	18	Oct.
7.5	6.9	6.9	6.7	6.8	6.6	6.2	7.0	26	36	27	17	130	111	189	119	77	13	Nov.
6.5	6.5	6.5	6.2	6.2	5.7	5.4	6.4	20	24	25	43	114	126	103	205	98	6	Dec.
7.2	6.6	6.1	5.9	5.6	5.4	5.2	6.3	.....	726	427	418	1,173	1,043	1,563	1,789	1,473	172	Year.

PORTLAND, OREG.

[h_a=213 ft.; local time, 3^h 11^m slow.]

9.6	9.3	9.0	8.2	8.4	7.7	6.3	7.8	42	30	44	71	178	122	53	34	179	32	Jan.
10.7	10.7	9.7	9.8	9.8	9.4	9.3	9.7	38	19	14	44	154	211	83	35	122	14	Feb.
12.8	12.4	11.7	10.9	10.3	9.3	9.0	10.0	38	39	86	36	87	113	76	40	247	20	Mar.
12.3	11.7	11.6	10.8	10.4	9.5	8.9	9.7	36	25	13	38	150	185	88	43	161	16	Apr.
9.4	10.0	9.7	9.9	10.3	9.6	10.1	9.2	38	20	7	11	146	172	101	76	200	12	May.
8.6	9.0	9.1	9.4	9.0	8.1	8.6	7.8	29	54	22	13	71	74	72	18	378	18	June.
7.3	7.9	8.7	8.7	9.0	10.3	10.9	6.5	26	70	4	16	30	24	13	6	516	67	July.
7.6	8.3	8.7	7.6	7.8	7.8	8.0	6.7	25	65	2	16	63	118	32	12	403	32	Aug.
9.5	9.7	9.3	9.6	9.6	8.8	8.9	7.7	26	66	4	24	57	69	26	12	438	24	Sept.
7.7	7.6	7.9	6.2	6.6	6.0	6.2	6.5	37	51	5	31	88	100	23	22	370	55	Oct.
12.7	12.1	10.8	11.1	10.6	12.6	13.0	12.2	49	43	66	111	124	164	54	28	112	13	Nov.
8.6	8.1	7.5	7.4	8.3	8.1	8.5	8.6	42	41	15	55	210	209	37	21	140	16	Dec.
9.7	9.7	9.4	9.1	9.2	8.9	9.0	8.5	.....	522	282	470	1,360	1,561	658	346	3,266	319	Year.

WIND—VELOCITY AND FREQUENCY—Continued.

ST. LOUIS, MO.

[λ = 38° 38′ N.; φ = 90° 12′ W.] [Seventy-fifth Meridian Time.]

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	10.2	10.2	10.2	9.6	9.1	8.7	8.9	9.5	10.1	11.0	10.8	11.2	11.1	11.0	11.2	11.2	11.5
Feb	12.0	12.1	12.3	12.3	12.5	12.6	12.3	12.1	12.4	12.8	13.3	13.4	13.4	14.4	14.6	14.3	13.4
Mar	10.3	10.0	10.1	10.6	10.9	11.1	11.5	11.8	12.7	13.0	13.9	13.8	14.4	14.6	14.5	14.5	13.8
Apr	12.5	12.4	12.1	12.0	11.6	12.1	11.9	12.7	14.0	15.0	15.5	15.6	15.9	16.6	16.8	16.7	17.4
May	9.7	10.1	9.7	8.9	8.5	7.8	8.1	8.5	8.9	9.9	10.5	11.3	11.9	12.3	12.8	13.1	13.9
June	6.9	7.2	7.0	6.8	6.6	6.9	7.3	7.8	8.5	8.6	8.9	9.2	9.5	9.8	9.5	9.9	9.9
July	8.2	8.1	8.1	7.8	7.1	7.5	7.7	8.4	9.6	10.1	10.9	11.2	11.0	10.5	10.9	10.9	10.4
Aug	8.8	8.4	8.8	8.1	7.6	7.3	7.8	7.3	7.1	8.0	9.4	9.7	10.5	10.5	10.2	10.9	10.6
Sept	8.5	8.3	7.9	8.6	9.1	9.0	9.0	9.8	9.8	10.0	10.7	11.0	10.9	10.7	11.1	11.6	11.1
Oct	9.1	9.5	9.3	9.3	9.3	9.6	9.4	8.9	9.3	9.9	10.8	10.9	11.5	11.8	12.1	12.2	12.3
Nov	12.2	12.6	12.1	11.9	11.8	12.2	12.5	12.9	13.3	13.8	14.3	14.5	14.3	14.7	14.6	14.3	14.4
Dec	10.2	9.8	9.2	9.3	9.4	9.5	9.6	9.7	10.2	10.5	10.9	10.9	10.9	10.9	11.2	10.9	10.5
Year	9.9	9.9	9.7	9.6	9.5	9.5	9.7	10.0	10.5	11.0	11.7	11.9	12.1	12.3	12.5	12.5	12.4

ST. PAUL, MINN.

[λ = 44° 58′ N.; φ = 93° 3′ W.]

Jan	7.2	7.4	6.8	7.4	7.2	7.0	6.8	7.2	7.3	7.6	8.1	8.5	8.7	9.1	9.2	8.7	8.5
Feb	7.8	7.3	7.4	7.6	7.6	7.8	8.0	8.2	8.2	9.2	9.7	10.1	10.2	11.4	10.8	11.0	10.7
Mar	8.2	8.1	7.6	8.2	8.3	8.0	7.6	7.7	8.1	9.1	9.2	10.0	10.9	11.2	11.7	11.9	11.3
Apr	7.2	6.5	7.9	8.3	7.9	8.2	7.2	7.7	9.4	10.0	10.7	11.6	11.7	12.2	11.9	11.5	10.5
May	6.8	7.2	6.9	6.6	7.4	6.8	6.3	7.4	8.4	9.3	10.3	10.5	11.2	11.8	12.1	12.3	12.0
June	3.7	3.8	3.8	3.8	4.2	4.0	4.5	4.9	5.8	6.9	8.2	8.8	9.3	10.1	10.4	10.0	9.4
July	4.2	4.2	4.5	4.8	4.7	4.4	4.4	4.6	5.5	6.3	6.9	7.9	7.5	8.3	8.6	8.5	8.2
Aug	4.5	3.7	3.7	4.6	4.5	4.5	4.0	4.8	5.5	6.1	7.6	8.8	9.0	9.8	10.2	10.1	10.0
Sept	5.4	5.2	5.4	5.8	5.6	5.5	5.8	6.3	6.6	7.5	8.2	9.2	9.7	10.1	10.3	10.1	9.8
Oct	5.0	4.8	5.1	5.0	5.3	5.3	5.1	5.0	5.5	6.2	7.6	8.3	8.8	9.4	9.9	10.3	9.5
Nov	7.4	7.3	6.9	7.2	7.3	7.5	7.2	7.4	7.4	7.7	8.0	8.2	8.8	9.6	9.5	9.5	9.3
Dec	6.5	6.0	5.7	5.7	5.8	5.7	5.7	5.6	5.7	5.8	6.1	6.3	7.3	7.5	7.4	7.2	7.1
Year	6.2	6.0	6.0	6.2	6.3	6.2	6.0	6.4	7.0	7.6	8.4	9.0	9.4	10.0	10.2	10.1	9.7

SALT LAKE CITY, UTAH.

[λ = 40° 46′ N.; φ = 111° 54′ W.]

Jan	5.6	5.1	5.1	5.5	5.6	5.5	5.8	5.1	4.6	5.2	4.8	5.4	6.9	7.9	7.4	7.5	7.3
Feb	3.7	3.4	3.2	3.9	4.0	4.2	3.9	4.3	3.9	4.0	4.1	4.2	5.3	7.3	7.6	7.9	8.1
Mar	5.8	5.4	4.8	4.2	4.1	4.5	4.1	3.7	3.7	3.6	4.2	4.9	7.3	8.3	9.2	8.9	9.6
Apr	5.5	5.8	5.3	4.7	4.7	5.1	4.9	5.0	5.0	5.4	7.8	9.2	11.8	12.5	13.2	13.0	12.2
May	5.1	5.5	4.8	3.7	4.4	4.5	4.5	4.6	4.3	4.4	5.5	7.0	8.3	8.8	9.2	11.0	11.2
June	5.3	5.5	5.3	4.9	4.4	4.6	4.5	4.1	3.8	4.1	4.8	5.9	6.8	7.9	8.7	9.5	9.6
July	4.4	5.4	4.2	4.1	4.2	4.0	3.7	4.6	4.0	3.8	4.0	4.8	6.2	7.2	7.8	8.1	7.7
Aug	4.3	4.8	4.8	4.0	4.2	4.2	4.3	3.8	3.3	3.4	3.7	5.3	7.2	8.1	8.5	8.1	8.5
Sept	5.7	5.7	5.9	5.8	5.4	5.4	4.9	5.1	4.7	4.4	4.4	6.0	8.8	9.8	10.1	10.6	10.6
Oct	4.4	4.5	4.0	4.0	4.0	4.4	4.3	4.7	4.3	4.0	4.2	4.6	5.8	7.7	9.4	10.8	10.2
Nov	5.4	4.8	4.9	5.1	5.2	5.3	6.0	5.7	5.1	4.8	5.0	4.7	6.6	7.8	9.2	9.8	9.3
Dec	4.1	4.0	3.8	4.1	3.8	4.0	4.4	3.7	3.5	4.0	3.9	3.8	3.7	4.9	5.6	6.2	6.7
Year	4.9	5.0	4.7	4.5	4.5	4.6	4.6	4.5	4.2	4.3	4.7	5.5	7.1	8.2	8.8	9.3	9.2

SAN DIEGO, CAL.

[λ = 32° 43′ N.; φ = 117° 10′ W.]

Jan	3.0	2.4	2.8	2.5	2.9	3.5	2.8	2.9	2.5	2.5	3.2	2.7	2.8	3.8	5.1	6.6	6.9
Feb	2.8	2.9	3.1	3.0	3.4	3.2	2.9	3.0	3.1	3.3	2.7	2.2	2.7	4.3	6.3	8.2	8.6
Mar	4.0	3.9	3.8	3.6	4.3	3.9	3.6	4.0	4.3	3.3	3.6	4.1	5.6	6.3	8.1	8.9	9.7
Apr	3.7	3.9	3.9	4.0	4.1	4.1	4.2	3.9	4.2	4.2	4.4	5.2	7.4	9.3	11.0	11.5	11.4
May	3.4	3.3	3.4	3.6	3.5	3.6	3.6	3.4	3.6	3.7	4.5	5.6	7.7	9.0	10.3	10.6	10.4
June	2.7	2.5	2.2	2.2	2.2	2.5	3.0	2.6	2.5	3.1	4.0	5.7	7.6	8.9	9.9	10.2	9.8
July	3.1	2.4	2.1	2.0	2.3	2.4	2.5	2.1	2.4	2.6	3.3	5.0	6.8	8.5	9.6	9.9	10.0
Aug	2.0	1.8	1.8	2.0	2.0	1.9	2.0	1.8	2.1	2.4	3.3	4.8	7.2	8.7	9.8	10.1	9.7
Sept	2.0	2.2	2.3	2.4	2.0	2.2	2.2	2.6	2.8	2.5	2.8	3.9	6.5	8.3	9.7	10.7	10.3
Oct	2.4	2.1	2.4	1.9	2.3	2.3	2.6	2.8	2.8	3.3	2.5	2.9	4.7	6.7	7.9	8.7	8.7
Nov	3.4	3.5	3.6	3.7	3.8	3.9	3.4	4.0	3.9	4.1	3.2	3.0	3.8	5.3	7.1	8.3	8.4
Dec	2.4	2.4	2.3	2.7	2.7	3.0	3.1	3.1	2.9	2.9	2.7	2.4	2.4	3.3	5.1	6.2	6.8
Year	2.9	2.8	2.8	2.8	3.0	3.0	3.0	3.0	3.1	3.2	3.4	4.0	5.4	6.9	8.3	9.2	9.2

WIND—VELOCITY AND FREQUENCY—Continued.

ST. LOUIS, MO.

[h_a = 210 ft.; local time, 1h 1m slow.] [Seventy-fifth Meridian Time.]

6h	7h	8h	9h	10h	11h	Mid.	Mean.	Max. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1896.
11.0	10.8	11.3	11.3	11.2	11.1	10 6	10.5	32	39	106	52	144	120	56	100	125	3	Jan.
12.6	12.5	11.6	12.3	11.9	11.6	11.4	12.7	42	82	41	8	52	90	122	109	191	1	Feb.
13.2	12.7	11.4	10.4	10.1	10.9	10.2	12.1	48	76	119	54	135	63	56	68	174	0	Mar.
16.7	15.8	14.1	13.0	12.9	12.8	12.0	14 1	39	42	25	44	180	234	85	57	53	0	Apr.
14.0	13.5	11.3	9.9	9.5	10.1	10.3	10.6	80	20	43	26	207	249	118	51	28	0	May.
9.7	9.3	7.9	7.6	7.4	7.1	6.9	8.2	52	62	93	48	90	172	76	73	108	0	June.
10.5	9.9	9.3	8.0	8.0	8.0	8.3	9.2	41	73	71	23	110	182	164	60	58	4	July.
10.2	9.5	8.5	8.0	8.3	8.2	8.7	8.9	45	94	95	46	74	208	122	34	65	6	Aug.
11.0	10.2	10.0	9.2	8.9	8.7	9.2	9.8	31	122	92	40	126	127	48	64	97	3	Sept.
11.4	10.0	10.0	10.4	10.5	10.2	9.3	10.3	46	99	62	33	154	103	52	111	130	0	Oct.
13.3	12.2	13.1	12.7	12.9	13.2	12.8	13.2	36	75	29	11	114	231	45	83	132	0	Nov.
9.8	9.8	10.4	10.0	10.5	10.2	9.9	10.2	30	111	31	34	127	197	85	86	74	0	Dec.
12.0	11.4	10.7	10.2	10.2	10.2	10.0	10.8	.....	894	806	417	1,512	1,975	1,030	896	1,236	18	Year.

ST. PAUL, MINN.

[h_a = 124 ft.; local time, 1h 12m slow.]

8.3	7.7	7.6	7.4	7.1	7.7	7.6	7.8	29	45	27	48	230	40	37	96	216	5	Jan.
9.9	9.1	8.5	8.5	8.0	8.1	8.2	8.9	42	24	37	49	113	28	63	98	272	13	Feb.
11.3	10.1	9.4	9.2	8.8	9.0	9.0	9.3	38	64	53	39	132	65	72	113	204	2	Mar.
9.9	8.6	8.0	7.6	7.2	7.2	6.7	9.0	37	29	42	67	196	67	68	63	158	30	Apr.
11.7	10.5	9.6	8.0	7.3	7.4	7.5	9.0	36	25	30	34	188	115	124	111	117	0	May.
8.9	7.9	7.0	5.3	5.0	4.7	4.7	6.5	32	34	30	35	184	88	105	70	123	51	June.
8.1	7.6	7.1	6.2	5.3	4.8	4.5	6.1	28	43	36	34	144	111	103	55	182	36	July.
9.5	8.1	7.0	5.3	5.5	5.0	4.3	6.5	60	19	27	35	147	109	107	79	184	38	Aug.
9.7	8.1	6.9	6.4	6.7	6.3	5.8	7.3	29	37	20	25	191	78	97	81	179	12	Sept.
8.4	6.9	6.8	6.7	6.2	5.6	5.6	6.8	26	33	34	25	190	67	96	100	166	33	Oct.
8.5	8.1	8.4	8.1	8.7	8.1	7.6	8.1	29	23	54	58	85	48	99	183	163	7	Nov.
6.3	6.0	6.2	6.3	6.2	6.3	6.8	6.3	23	18	24	40	188	112	125	97	124	17	Dec.
9.2	8.2	7.7	7.1	6.8	6.7	6.5	7.6	.....	393	413	489	1,988	927	1,095	1,147	2,088	244	Year.

SALT LAKE CITY, UTAH.

[h_a = 90 ft.; local time, 2h 27m slow.]

7.2	5.8	5.5	5.3	4.4	4.1	5.3	5.7	36	11	29	57	304	121	52	78	84	8	Jan.
8.1	7.9	7.4	5.3	4.6	4.0	3.9	5.2	48	58	73	32	161	76	70	97	124	7	Feb.
9.1	8.6	7.0	5.4	4.9	4.8	5.1	5.9	38	88	50	54	156	65	55	83	170	22	Mar.
12.2	12.2	10.9	8.1	5.6	5.2	5.1	7.9	37	38	42	53	172	103	58	71	168	15	Apr.
10.8	9.4	7.8	7.1	5.8	6.0	6.3	6.7	48	73	73	49	136	67	32	67	243	2	May.
9.4	7.8	6.6	6.5	6.9	6.3	5.4	6.2	30	61	77	88	161	62	35	47	188	1	June.
7.5	7.2	6.9	6 3	6.3	5.2	4.9	5.5	34	65	62	93	204	106	34	45	129	5	July.
8.2	7.8	7.5	5.9	5.3	5.1	5.0	5.6	26	51	51	77	246	141	31	29	110	7	Aug.
10.6	9.7	8.2	6.7	6.2	6.0	6.1	6.9	44	37	70	102	196	73	39	44	159	0	Sept.
9.5	7.9	5.8	4.7	4.1	4.3	5.1	5.7	34	43	65	63	247	60	31	76	160	0	Oct.
7.3	5.2	4.4	4.2	4.2	4.2	4.6	5.8	39	25	48	74	226	129	50	72	96	1	Nov.
5.9	5.0	4.3	3.9	3.7	3.7	3.9	4.4	26	30	34	95	255	74	52	104	99	1	Dec.
8.8	7.9	6.9	5.8	5.2	4.9	5.1	6.0	.....	580	676	838	2,463	1,076	538	813	1,730	70	Year.

SAN DIEGO, CAL.

[h_a = 70 ft.; local time, 2h 49m slow.]

6.7	6.5	6.0	3.7	2.8	2.5	2.8	3.8	24	25	188	53	58	21	31	122	160	86	Jan.
9.0	8.8	7.4	4.9	3.6	2.5	3.0	4.4	16	38	201	57	27	5	70	66	170	61	Feb.
9.6	9.3	8.8	7.2	5.3	4.4	3.8	5.6	35	49	123	35	47	19	54	158	216	43	Mar.
11.6	11.1	9.8	8.0	6.3	4.6	4.3	6.5	26	33	102	38	24	28	71	181	207	37	Apr.
10.6	10.1	9.0	7.7	6.0	4.6	4.1	6.1	20	27	51	8	26	53	125	182	244	29	May.
9.3	8.8	8.1	6.8	5.1	4.5	3.4	5.3	17	17	3	3	16	38	279	162	169	33	June.
9.4	9.0	8.0	6.9	5.7	4.7	3.6	5.2	17	16	16	1	0	0	164	248	249	49	July.
9.6	8.8	8.3	6.6	5.1	3.8	2.9	4.9	16	51	17	0	5	4	177	159	226	105	Aug.
9.8	8.6	7.7	5.8	4.0	2.9	2.6	4.9	18	80	48	8	20	28	80	165	217	74	Sept.
8.2	8.0	6.6	4.7	2.8	2.8	2.3	4.3	26	64	92	10	11	55	84	106	204	117	Oct.
8.4	7.7	6.2	3.7	3.2	3.0	3.2	4.6	29	84	147	38	38	27	63	103	157	62	Nov.
6.7	6.1	4.6	3.1	2.8	2.5	2.4	3.5	25	41	242	77	20	13	38	45	175	94	Dec.
9.1	8.6	7.5	5.8	4.4	3.6	3.2	4.9	.....	525	1,230	330	292	291	1,236	1,698	2,393	789	Year.

WIND—VELOCITY AND FREQUENCY—Continued.

SAN FRANCISCO, CAL.

[λ = 37° 48′ N.; φ = 122° 26′ W.] [Seventy-fifth Meridian Time.

1896.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan.	8.0	8.3	8.9	9.0	9.0	9.5	9.3	9.1	9.5	9.1	9.2	9.5	9.8	9.8	9.8	10.0	10.4
Feb.	6.4	6.7	5.9	5.3	5.0	4.8	5.0	4.6	4.6	4.8	5.6	6.0	6.2	6.3	6.2	6.6	8.7
Mar.	8.2	7.5	6.9	6.6	6.6	6.0	5.9	6.2	6.2	6.6	6.5	6.6	6 8	7.7	8.8	9.7	10.8
Apr.	9.6	9.3	7.9	8.1	8.2	8.5	7.6	7.1	7.1	7.1	8.6	8.6	9.9	11.1	12.8	16.6	17.9
May	10.5	9.6	9.0	7.8	7.5	7.6	7.1	8.2	7.7	8.0	8.8	9.5	10.9	13.0	15.0	17.3	18.8
June	12.9	12.2	11.4	10.5	9.9	9.0	8.0	7.5	6.9	7.3	8.1	8.5	10.3	13.7	16.8	19.2	22.8
July	13.9	12.4	11.1	10.3	9.8	9.0	8.6	8.4	8.1	8.5	9.0	8.9	10.2	12.3	14.9	18.3	20.9
Aug	12.8	11.6	10.6	9.6	9.6	8.3	9.0	9.4	8.4	8.1	9.0	8.9	9.9	11.8	14.7	19.2	20.9
Sept	11.1	10.2	8.5	7.7	6.9	6.5	6.6	6.3	5.7	6.1	6.5	7.3	7.3	9.4	11.6	14.3	16.5
Oct.	8.9	7.8	7.0	7.0	6.9	6.2	5.7	5.8	5.5	5.7	5.5	5.4	5.5	6.9	9.5	12.1	14.6
Nov	6.6	6.8	6.7	7.1	7.3	7.1	6.8	6.6	6.9	6.9	6.8	6.9	6.9	7.1	7.9	8.8	10.3
Dec.	7.1	7.0	6.3	6.0	6.2	5.8	6.1	6.9	7.5	7.6	7.4	6.9	7.6	8.2	8.0	9.0	9.4
Year	9.7	9.1	8.4	7.9	7.7	7.4	7.1	7.2	7.0	7.2	7.6	7.8	8.4	9.8	11.3	13.4	15.2

SANTA FE, N. MEX.

[λ = 35° 41′ N.; φ = 105° 57′ W.]

Jan.	4.9	4.6	4.9	4.8	4.5	4.9	5.2	5.1	5.6	6.0	6.4	7.8	8.9	8.9	9.1	9.0	9.1
Feb.	5.3	5.0	4.9	5.9	5.8	5.9	5.8	5.5	5.3	6.8	8.2	9.3	10.9	11.1	11.1	10.7	10.8
Mar.	5.7	5.2	4.6	4.7	4.9	4.7	5.3	5.0	5.1	5.9	8.0	10.4	11.4	11.7	12.1	13.3	13.9
Apr.	6.6	6.7	5.9	4.8	4.8	5.2	5.2	5.3	5.5	6.1	8.4	10.7	11.6	13.7	15.2	16.2	16.5
May	5.7	5.7	5.8	5.5	5.2	5.0	5.1	5.5	5.3	6.8	8.6	9.8	10.5	11.0	12.8	14.0	15.6
June	7.7	6.9	6.1	5.6	5.4	4.6	4.3	3.9	3.7	4.4	6.2	7.3	8.2	9.4	10.0	10.1	10.8
July	5.2	4.9	4.3	3.7	2.9	2.9	2.8	2.9	2.7	3.5	4.7	5.0	6.0	6.4	7.7	8.4	8.7
Aug	6.2	5.6	4.9	4.2	3.8	4.0	3.9	4.0	3.3	4.0	5.5	6.4	6.5	7.0	6.9	7.4	8.1
Sept	6.1	5.8	5.6	5.2	4.7	4.3	4.0	3.6	3.4	4.1	5.1	5.8	7.5	8.4	8.9	9.5	8.5
Oct.	5.5	4.9	4.7	4.8	5.1	4.8	3.8	3.7	3.5	4.2	5.8	6.9	7.5	7.6	7.9	7.6	7.6
Nov	5.1	5.4	5.2	5.9	5.8	4.9	5.3	5.4	5.5	5.0	6.7	7.4	8.9	9.7	9.8	10.3	9.5
Dec.	5.0	5.1	5.2	5.5	5.1	4.7	5.1	5.4	6.2	5.8	6.1	7.0	7.5	7.5	8.3	8.5	8.0
Year	5.8	5.5	5.2	5.0	4.8	4.7	4.6	4.6	4.6	5.2	6.6	7.8	8.8	9.4	10.0	10.4	10.6

SAVANNAH, GA.

[λ = 32° 5′ N.; φ = 81° 5′ W.]

Jan.	6.1	6.1	6.2	6.6	6.8	6.6	7.3	6.8	6.4	7.5	8.5	8.6	9.2	8.9	8.7	9.1	8.6
Feb.	9.1	8.8	8.2	7.6	7.7	8.7	8.9	8.9	9.1	10.4	11.9	12.8	13.0	13.4	13.3	13.5	12.7
Mar.	9.5	8.3	8.1	7.5	7.4	7.3	7.5	7.6	9.0	9.5	9.9	11.2	11.8	11.7	12.2	13.2	13.2
Apr.	7.7	6.9	7.0	6.2	6.7	6.6	6.5	7.5	9.5	10.2	10.3	10.3	10.7	12.0	12.7	13.6	12.8
May	6.5	6.0	5.6	5.5	5.3	5.3	6.4	6.8	6.8	6.5	5.9	6.5	7.6	9.0	10.3	10.7	9.8
June	5.3	4.7	4.7	4.8	5.0	4.9	5.1	5.8	6.3	6.4	6.7	6.5	7.2	8.1	9.0	9.4	8.6
July	4.9	4.9	4.9	4.6	4.8	5.0	5.1	6.2	6.8	7.0	6.8	6.9	8.5	9.3	10.5	10.2	10.0
Aug.	5.5	5.2	4.7	4.6	4.5	4.5	4.5	4.9	6.1	6.3	6.6	7.3	7.3	8.8	9.1	9.7	9.2
Sept	4.5	4.3	4.3	4.7	4.9	4.7	4.8	5.2	6.5	7.7	8.2	8.7	10.6	9.4	10.1	10.1	9.8
Oct	7.3	7.2	6.9	6.8	7.1	7.1	7.5	7.5	7.6	8.3	8.6	9.0	9.2	9.8	10.2	10.1	9.6
Nov.	5.9	5.8	6.3	6.6	7.0	6.8	6.6	7.1	7.0	7.1	8.5	8.7	9.4	9.7	9.9	9.7	8.7
Dec.	7.9	7.9	8.2	7.9	8.0	8.0	8.0	7.9	8.2	8.8	9.0	9.2	9.3	9.3	9.4	9.4	8.6
Year	6.7	6.3	6.3	6.1	6.3	6.3	6.5	6.8	7.4	8.0	8.4	8.8	9.5	10.0	10.4	10.7	10.1

WASHINGTON, D. C.

[λ = 38° 54′ N.; φ = 77° 3′ W.]

Jan.	7.1	7.0	6.6	6.0	6.0	6.7	6.2	6.0	6.5	8.3	9.7	9.5	9.9	9.5	9.4	8.5	8.1
Feb.	8.4	8.7	8.5	8.6	8.2	8.8	8.8	9.0	10.1	11.2	12.2	11.7	12.4	11.8	12.3	11.6	11.4
Mar.	9.4	9.4	9.5	9.5	9.1	8.4	8.1	9.6	11.5	13.0	13.3	13.2	14.2	14.1	14.3	13.6	14.1
Apr.	5.7	5.0	4.6	5.3	5.5	5.6	5.7	6.6	7.6	8.3	9.6	9.8	10.3	10.9	11.1	10.7	10.0
May.	4.7	4.6	4.3	5.0	4.8	4.4	4.7	6.1	7.2	7.4	7.6	8.1	8.3	8.2	8.0	7.8	7.1
June	3.9	4.0	4.3	3.9	3.8	3.7	4.6	5.3	6.1	6.5	6.3	6.8	7.4	6.9	7.1	7.1	7.4
July	3.6	3.8	3.9	3.8	3.8	3.7	3.9	4.3	5.9	7.3	7.5	7.3	8.3	8.7	8.0	7.7	7.6
Aug.	3.7	4.0	3.3	3.2	3.3	2.5	3.3	4.2	5.2	6.1	6.7	6.9	7.2	7.4	7.6	7.5	7.4
Sept	4.7	5.2	4.4	4.3	4.1	4.2	4.4	5.0	6.7	7.2	7.2	7.4	8.1	8.3	8.4	8.6	7.7
Oct.	5.0	4.5	4.5	4.4	4.3	4.9	5.8	6.4	7.3	9.0	9.4	9.5	10.0	10.2	9.8	9.4	8.2
Nov.	4.9	4.6	4.8	5.0	4.6	5.4	4.8	5.7	6.9	8.1	9.1	9.4	10.0	10.5	10.3	9.4	7.9
Dec.	5.9	5.6	5.4	5.3	4.8	5.3	5.7	5.9	6.2	8.4	8.8	9.8	9.7	9.4	9.6	8.6	6.9
Year	5.6	5.5	5.3	5.4	5.2	5.3	5.5	6.2	7.3	8.4	8.9	9.1	9.6	9.7	9.7	9.2	8.6

WIND—VELOCITY AND FREQUENCY—Continued.

SAN FRANCISCO, CAL.

[h_a = 167 ft.; local time 3h 10m slow.] [Seventy-fifth Meridian Time.]

6h	7h	8h	9h	10h	11h	Mid.	Mean.	Max. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1896.
10.7	11.5	10.5	9.3	9.5	8.6	8.7	9.5	47	139	42	16	142	147	99	56	100	2	Jan.
10.0	11.0	11.8	11.0	10.0	9.2	7.5	7.0	34	192	53	19	42	22	47	207	112	2	Feb.
12.2	12.8	12.5	12.5	11.2	8.8	7.1	8.4	35	92	31	20	59	64	126	231	111	9	Mar.
18.3	17.4	17.9	17.2	16.1	13.7	11.7	11.6	36	30	13	5	71	46	155	306	92	4	Apr.
18.9	19.7	19.4	18.6	16.6	14.2	12.7	12.4	41	35	13	5	29	21	191	378	70	1	May.
23.5	24.0	23.9	23.0	20.7	18.2	14.6	14.3	42	6	6	6	16	16	264	396	6	4	June.
22.3	22.2	23.5	23.3	20.1	18.0	15.2	14.1	38	1	2	3	5	6	274	451	3	0	July.
21.7	20.9	22.1	22.2	20.5	18.6	16.5	13.9	36	2	2	2	8	9	320	391	10	0	Aug.
18.0	18.8	19.0	17.9	14.6	12.5	11.6	10.9	33	11	7	3	44	16	196	424	10	9	Sept.
16.6	17.7	18.3	17.0	13.2	11.2	10.2	9.6	35	45	16	5	29	44	191	358	39	17	Oct.
11.1	10.6	10.9	10.4	9.0	7.5	7.1	7.9	33	136	58	20	62	75	57	208	102	2	Nov.
9.1	9.2	9.3	9.5	8.8	8.0	7.5	7.7	36	210	28	30	128	66	28	100	154	0	Dec.
16.0	16.3	16.6	16.0	14.2	12.4	10.9	10.6	.....	899	271	133	634	532	1,949	3,507	809	50	Year.

SANTA FE, N. MEX.

[h_a = 50 ft.; local time. 2h 4m slow.]

8.6	7.4	5.5	5.2	4.9	4.9	4.8	6.3	26	84	265	38	107	34	72	16	80	47	Jan.
9.8	9.6	6.8	4.8	5.2	6.3	6.6	7.4	38	85	207	37	110	29	69	20	123	15	Feb.
14.3	13.4	13.0	9.9	7.2	6.6	6.3	8.4	40	49	135	17	84	56	140	44	194	23	Mar.
16.1	14.8	15.0	11.1	7.5	7.0	6.6	9.4	50	26	69	24	162	74	233	26	89	16	Apr.
15.7	14.6	13.1	10.9	7.8	6.5	6.0	8.9	39	28	79	22	161	48	259	31	110	7	May.
9.8	9.9	10.1	9.6	7.9	7.9	8.2	7.4	31	35	102	50	177	50	189	24	89	5	June.
9.4	10.1	9.6	7.9	6.4	6.5	5.5	5.8	34	32	86	72	177	81	158	26	66	46	July.
9.5	9.1	9.0	8.1	7.0	6.8	6.8	6.2	32	22	44	72	220	97	181	44	43	21	Aug.
8.0	7.8	7.8	6.1	6.1	6.2	5.7	6.2	25	43	61	57	196	83	125	51	72	32	Sept.
7.5	6.1	4.9	5.0	4.7	4.8	5.0	5.6	27	84	123	51	167	59	113	46	66	36	Oct.
9.3	7.7	5.6	4.9	5.0	5.1	5.4	6.6	33	86	172	24	116	50	96	44	88	45	Nov.
7.4	5.0	3.3	4.2	4.0	4.5	5.1	5.8	24	100	259	34	118	28	57	25	61	61	Dec.
10.4	9.6	8.6	7.3	6.1	6.1	6.0	7.0	.....	674	1,604	498	1,795	688	1,692	398	1,081	354	Year.

SAVANNAH, GA.

[h_a = 86 ft.; local time. 24m slow.]

7.9	6.9	6.8	7.2	6.6	6.4	6.2	7.3	36	77	150	67	69	28	79	86	170	19	Jan.
10.1	8.6	8.8	8.9	8.4	8.4	8.1	10.0	40	50	25	15	45	107	166	135	142	11	Feb.
12.3	10.1	8.7	8.8	8.8	9.0	9.5	9.7	32	56	64	102	28	166	65	129	129	6	Mar.
12.1	11.0	9.5	8.4	8.1	8.2	7.9	9.3	36	22	90	105	98	198	105	42	57	4	Apr.
10.0	8.7	8.0	7.7	7.0	6.5	6.3	7.3	22	50	57	38	105	266	136	39	41	12	May.
9.1	8.8	7.4	6.3	5.9	5.1	4.9	6.5	27	87	56	66	93	186	130	51	41	9	June.
10.1	8.7	7.2	6.2	6.5	6.4	5.4	7.0	29	21	22	29	157	262	154	61	28	10	July.
8.5	7.5	6.6	6.0	5.6	5.5	5.2	6.4	32	77	120	54	100	170	124	49	47	2	Aug.
8.8	7.0	6.4	6.0	5.5	5.4	5.0	6.8	75	118	141	151	58	101	35	77	21	17	Sept.
8.5	7.6	7.8	7.3	7.3	7.2	7.5	8.0	27	238	104	90	32	70	85	60	65	0	Oct.
7.4	6.7	7.1	6.8	6.5	6.4	6.9	7.4	27	152	158	115	65	104	32	22	69	3	Nov.
7.2	7.1	7.6	7.8	7.4	7.5	8.0	8.2	27	218	133	33	54	17	46	66	173	3	Dec.
9.3	8.2	7.7	7.3	7.0	6.8	6.7	7.8	.....	1,166	1,120	866	904	1,676	1,156	818	983	95	Year.

WASHINGTON, D. C.

[h_a = 76 ft.; local time, 8m slow.]

7.5	6.6	6.6	6.1	6.3	6.5	7.0	7.4	34	92	96	26	82	84	42	97	205	21	Jan.
10.1	9.5	9.1	9.0	8.7	9.0	9.2	9.9	42	80	72	39	55	100	64	95	189	2	Feb.
12.3	10.6	9.9	9.5	8.6	9.4	8.6	11.0	44	73	72	28	46	113	22	79	291	19	Mar.
9.5	8.5	7.0	6.2	6.4	6.0	5.7	7.6	36	67	79	66	93	122	42	49	163	39	Apr.
6.5	5.9	5.9	5.3	4.5	4.6	4.4	6.1	54	43	95	66	67	166	71	97	122	18	May.
5.7	5.5	4.5	3.6	3.4	3.5	4.0	5.2	26	97	66	48	65	182	78	73	98	13	June.
6.8	5.8	5.0	3.9	4.0	4.2	4.0	5.5	26	80	28	14	49	231	143	72	89	38	July.
6.5	5.3	4.0	3.9	4.2	3.7	3.7	5.0	24	168	73	26	37	124	78	98	127	12	Aug.
6.6	5.6	5.2	4.5	4.9	5.3	5.6	6.0	66	103	57	54	63	188	72	40	122	21	Sept.
6.5	5.5	5.3	5.4	5.4	5.2	4.9	6.7	28	150	89	18	35	153	26	54	202	18	Oct.
6.2	5.5	5.4	5.6	5.4	5.6	5.5	6.7	30	142	50	34	48	238	71	15	89	32	Nov.
6.0	5.3	5.5	5.1	5.7	5.6	6.1	6.7	34	162	78	21	21	189	62	38	150	25	Dec.
7.5	6.6	6.1	5.7	5.6	5.7	5.7	7.0	.....	1,257	853	439	661	1,889	772	808	1,847	258	Year.

Blank page retained for pagination

MONTHLY MEAN VALUES FOR THE LUSTRUM 1891-1895.

By A. J. HENRY, *Chief of Division.*

Following the tables of hourly, monthly, and seasonal data for 1896, and concluding Part II of this report, are tables giving the mean pressure, temperature, and velocity of the wind for each hour of the day for the five-year period 1891-1895. The mean values have been computed from the data as published in Part II of preceding volumes, except that all means of atmospheric pressure have been reduced to the elevation that obtained on December 31, 1895. The elevation of the barometer cistern above sea level, the correction to reduce to standard gravity, and the geographic coordinates for each station are given in the tables.

The changes that were made in the elevations of the anemometers and thermometers during the five years 1891-1895 are shown in the table below.

CHANGES IN ELEVATIONS OF THERMOMETERS AND ANEMOMETERS, 1891-1895, INCLUSIVE.

Stations.	Ground above sea level.	Instruments above ground Jan. 1, 1891.		Changes.		
		Thermometer.	Anemometer.	Date.	Thermometer to—	Anemometer to—
	Feet.	*Feet.*	*Feet.*		*Feet.*	*Feet.*
Bismarck	1,670	16	46	July 1, 1891	59	69
				June 1, 1894	16	29
Boston	16	115	182			
Buffalo	606	103	108	Oct. 7, 1895	118	123
Chicago	597	241	272	Oct. 15, 1892		274
Cincinnati	553	153	157			
Cleveland	649	97	103	Apr. 30, 1892	122	130
Detroit	599	158	158	July 31, 1891		161
Dodge City	2,485	44	52			
Eastport	38	51	58	Oct. 14, 1893	69	74
Galveston	5	85	96			
Havre	2,477	15	33			
Kansas City	896	78	95			
Key West	22	42	50			
Marquette	641	67	95			
Memphis	242	108	116	July 1, 1895	140	154
New Orleans	9	112	120			
New York	68	183	200	Mar. 15, 1895	298	326
Philadelphia	42	168	184			
Pittsburg	756	130	138	June 1, 1892	115	123
				Sept. 22, 1892	116	
Portland, Oreg.	43	84	91	Oct. 5, 1892	200	209
				July 15, 1894	203	213
St. Louis	469	110	212	Oct. 28, 1892		210
St. Paul	759	114	124			
Salt Lake City	4,282	90	89	July 31, 1891	83	90
San Diego	36	73	85	May 1, 1895	59	70
San Francisco	26	110	109	Nov. 1, 1892	161	167
Santa Fe	6,966	35	36	Dec. 31, 1891	59	60
				Feb. 28, 1893	47	50
Savannah	56	65	68	Apr. 8, 1892	63	86
Washington	80	59	67	Oct. 16, 1894		76

It will be seen from the foregoing that the position of one or more of the instruments at 17 of the 28 stations was changed during the five years, 1891–1895. In 13 cases a transfer from one building to another was made, but in the remaining cases the changes involved either an increase in the elevation of the instrument or a removal to a more advantageous position on the roof of the same building.

The changes of greatest magnitude were those which took place in New York City and Portland, Oreg., both removals increasing the elevation of the instruments about 115 feet over and above their former positions.

The thermometers at the New York station are now 298 feet above the street; the anemometer is 326 feet above the same level.

While instrumental readings at these altitudes show the state of the atmosphere with sufficient fidelity for the purpose of weather forecasting, it is not so certain that they furnish the class of information desired by the general public.

There are now 10 Weather Bureau stations at which temperature observations are made at heights ranging from 150 to 298 feet above the street. The variance between the temperatures so reported and those of the street has been noticed and commented upon at various times, but no plan has yet been devised whereby the true air temperature at some uniform elevation above the street can be reported coincidently with the preparation of the daily weather telegram.

In order to connect two series of temperature observations in cases of a change of 100 feet or more in elevation, two methods may be followed. First, we may apply a correction to the monthly and annual means, based upon the adiabatic rate of decrease of temperature with altitude—viz, 1° C. per 100 meters, or, in English measure, 1° F. for each 182.3 feet. Such a correction in the case of both New York and Portland would amount to about 0.6° on the average of all seasons. Second, we may ascertain by direct comparison with records of adjacent stations the probable effect of the increased elevation, and apply a correction accordingly. The method of comparison that most commends itself is based on the assumption that simultaneous variations of temperature from the mean value are nearly constant over considerable areas; thus, we may assume that the monthly mean temperature as deduced from observations made in Central Park, about 6 miles north of the Weather Bureau office in New York City, and at the latter respectively, will vary from the normal by about the same amount and the differences will be of the same sign.

The approximate value of the lowering of temperature at the New York office based on the assumption just stated, and determined independently by (A) comparison with observations made at Central Park about 6 miles north, and Newark, N. J., about 8 miles southwest, and (B) Philadelphia, Pa., 85 miles southwest, are given below. Similar results for Portland, Oreg., based on comparisons between the observed mean temperatures of that city and Astoria, Oreg., about 70 miles northwest, have also been added.

The large reduction of temperature at the New York station is still to be accounted for.

DECREASE OF TEMPERATURE WITH INCREASE OF ELEVATION, PORTLAND AND NEW YORK.

		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.	Increase of elevation.
		°	°	°	°	°	°	°	°	°	°	°	°	°	*Feet.*
New York	A	2.1	2.0	2.1	3.2	3.0	2.5	3.0	2.5	2.2	2.2	2.2	1.9	2.4	115
	B	1.1	1.6	2.2	2.2	1.9	1.5	1.8	2.5	2.0	1.2	1.3	1.2	1.4	
Portland		0.3	1.1	1.0	1.7	2.6	1.3	1.1	1.5	1.5	0.5	0.0	0.0	1.0	116

From the above values it will be an easy matter to determine the proportionate correction that should be applied to the lustrum means of the New York and Portland stations.

As a result of the increase in the elevation of the anemometers at the stations above named, the numerical values of wind velocity have been considerably augmented, especially at Portland.

The average annual wind movement at that place for the seven years 1886–1892, a period during which the anemometer remained at a constant elevation of 91 feet above ground (26 feet above the roof) was 47,770 miles. The instrument was placed on the tower of the Oregonian

Building, 208 feet above ground and about 90 feet above the roof of the building, in October, 1892. The average annual movement for the four years 1893-1896 was 75,695 miles, an increase of 58 per cent over the previous location.

The anemometer at the New York station had an elevation of 200 feet above ground (34 feet above the roof) from April, 1889, to March 15, 1895. The average annual movement at this elevation was 96,815 miles. The mean of the two years April, 1896–May, 1897, at an elevation of 326 feet above the street (75 feet above the roof of the main building), is 120,750 miles, an increase over the mean for the previous location of about 24 per cent.

As affording material for a study of the increase in wind velocity with elevation, the annual wind movements at Sandy Hook, N. J., Central Park Observatory, and the Weather Bureau office in New York City, respectively, are given in the table below. A few fragmentary observations bearing upon the same subject made in Washington and at Buffalo, N. Y., have also been added.

ANNUAL WIND MOVEMENT 1872–1896.

[New York City, (a) Weather Bureau, (b) Central Park Observatory; (c) Sandy Hook, N. J.]

Year.	Elevation above—					Annual movement.		
	Ground.			Roof.				
	(a)	(b)	(c)	(a)	(b)	(a)	(b)	(c)
	Feet.		*Feet.*	*Feet.*	*Feet.*	*Miles.*	*Miles.*	*Miles.*
1872	142.3	.....	.....	19.3	.....	90,519	65,132	.....
1873	142.3	.....	14.6	19.3	.....	87,921	63,439	.....
1874	142.3	.....	39.5	19.3	.....	88,361	60,434	110,360
1875	161.8	.....	39.5	19.3	.....	85,546	57,244	114,179
1876	161.8	.....	39.5	19.3	.....	93,235	62,205	134,356
1877	161.8	.....	39.5	19.3	.....	90,754	55,500	123,932
1878	161.8	.....	40.7	19.3	.....	87,168	54,988	130,613
1879	161.8	.....	40.7	19.3	.....	76,308	53,339	125,847
1880	161.8	81	40.7	19.3	20	74,642	60,569	124,278
1881	161.8	81	40.7	19.3	20	78,778	65,143	108,471
1882	161.8	81	40.7	19.3	20	76,661	68,070	122,601
1883	161.8	81	93.5	19.3	20	62,700	66,987	128,933
1884	161.8	81	93.5	19.3	20	79,275	63,637	139,149
1885	161.8	81	93.5	19.3	20	87,935	65,192	144,879
1886	161.8	81	93.5	19.3	20	83,713	63,544	144,431
1887	170.5	81	.....	19.3	20	72,362	63,859	.....
1888	170.5	81	.....	19.3	20	91,868	67,784	.....
1889	200.1	81	.....	34.4	20	94,054	65,052	.....
1890	200.1	81	.....	34.4	20	98,784	62,879	.....
1891	200.1	81	.....	34.4	20	100,792	61,196	.....
1892	200.1	81	.....	34.4	20	95,046	64,370	.....
1893	200.1	81	.....	34.4	20	95,277	58,525	.....
1894	200.1	81	.....	34.4	20	90,177	55,452	.....
1895	326.0	81	.....	74.9	20	110,861	57,528	.....
1896	326.0	81	.....	74.9	20	125,289	59,808	.....

COMPARATIVE ANEMOMETER READINGS AT WASHINGTON, D. C.

[Anemometer *a* 17 feet above the roof; anemometer *b* 37 feet above the roof.]

Month.	Miles.		Ratio $\frac{b}{a}$	Month.	Miles.		Ratio $\frac{b}{a}$
	a	*b*			*a*	*b*	
1893.				**1894.**			
March	3,351	3,598	1.07	October †	4,929	5,358	1.09
April	5,869	6,274	1.07	November	5,585	5,810	1.05
May 1 to 10*	1,711	1,819	1.06	December	4,632	4,812	1.04
May 11 to June 10	4,610	5,175	1.12	**1895.**			
June 11-30	2,663	2,838	1.07	January	5,021	5,054	1.06
July	4,033	4,432	1.10	February	6,226	6,685	1.07
August	2,964	3,329	1.12	March	6,890	7,205	1.05
September	3,635	4,141	1.14	April	6,258	6,562	1.05
October	4,473	4,793	1.08	May	4,966	5,378	1.08
November	4,818	5,105	1.06	June	3,913	4,253	1.09
December	4,806	5,105	1.06	July	3,655	4,027	1.10
1894.				August	3,806	4,057	1.07
January	3,878	4,337	1.12	September	3,860	4,105	1.06
February	4,146	4,431	1.05	October	5,282	5,539	1.05
March	5,212	5,709	1.09	November	4,524	4,761	1.05
April	6,283	6,587	1.08	December	5,201	5,517	1.06
May	4,706	5,259	1.12	**1896.**			
June	3,896	4,407	1.13	January	5,513	5,805	1.05
July	3,781	4,220	1.12	February	6,912	7,264	1.05
August	3,219	3,658	1.14	March	8,158	8,597	1.05
September	4,066	4,632	1.14				

* The instruments were interchanged May 10 and returned to their former positions June 10.

† Elevation of *a* raised 9 feet.

BUFFALO, N. Y.

[Anemometer *a*, old position, Board of Trade Building, 123 feet above ground; anemometer *b*, new position, Guaranty Building, 206 feet above ground.]

Month.	Miles.		Ratio $\frac{b}{a}$	Month.	Miles.		Ratio $\frac{b}{a}$
	a	*b*			*a*	*b*	
1896.				**1896.**			
April	5,925	8,359	1.41	July	7,579	9,073	1.20
May	6,700	9,001	1.34	August	5,444	6,640	1.22
June	3,970	5,370	1.35	September	1,742	2,308	1.32

Prof. Cleveland Abbe, commenting upon the lustrum averages of wind velocity, in the June, 1897, Monthly Weather Review, remarks as follows:

* * * * * * * * * *

Tables 3 and 6 give the hourly and monthly mean velocity of the wind. In the first of these tables, for instance, the figures 8.5 for Bismarck indicate the average movement of the wind, 8.5 miles, during the hour from midnight to 1 o'clock, or, in general, during the hour ending with the moment of standard time inscribed at the head of the table. In this respect this table differs from Nos. 1 and 2, which give the pressure and temperature, respectively, at the exact moments of standard time inscribed at the head of the table.

As the anemometers, like the thermometers, are placed as high as possible above ground, their records need a reduction to some standard elevation before they can become strictly comparable. But such a reduction will vary according to the nature of the surface beneath the anemometer, and even with the time of day and the season of the year. On the average of the year we may expect that the higher anemometers will show the greater velocities. The heights of the anemometers above ground are shown in the seventh column of Table 7, but, as most of these are located in cities, the ground from which the measurements are made is far below the average roofs of the surrounding buildings. Even in the smaller towns, the open country, and the prairie, the anemometer may be considered as being slightly affected by trees, buildings, and inevitable irregularities in the surface of the ground. As a crude approximation, we will assume that the velocity increases as the 0.4 power of one-half the altitude above ground. Under this assumption the standard velocity for 20 feet is given by the formula

$$\frac{v}{V}=\left(\frac{40}{H}\right)^{0.4}$$

The exponent 0.5 would be appropriate for smaller altitudes, and 0.3 for much larger ones, but 0.4 is appropriate for values of H between 40 and 400 feet, and gives us the following table of factors by which the upper velocity V is to be multiplied in order to obtain the velocity at 20 feet:

H	Factor.	H	Factor.
Feet.		*Feet.*	
40	1.000	240	0.488
80	0.758	280	0.459
120	0.644	320	0.435
160	0.574	360	0.415
200	0.525	400	0.398

The special factors for our stations are given in Table 7.

Using these factors we obtain the reduced velocities given in the last column of Table 3. Crude as this reduction is, it serves to reduce to a fair degree of uniformity the records of coastal and interior stations, and brings out, for instance, with considerable prominence, the strong winds at Havre, Dodge City, and Bismarck.

Using the factors computed by Professor Abbe, we have reduced the means of the observed velocities to a uniform elevation of 20 feet above ground. The reduced velocities are given in the tables under an appropriate heading.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME).

BISMARCK, N. DAK.

[λ=46° 47′ N.; φ=100° 39′ W.]

1891-95	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan.*	28.214	.211	.210	.214	.215	.211	.210	.212	.218	.225	.228	.231	.222
Feb	28.243	.242	.241	.240	.236	.238	.242	.244	.250	.254	.256	.256	.251
Mar	28.210	.209	.208	.204	.199	.199	.201	.207	.209	.212	.210	.205	.197
Apr	28.164	.164	.160	.158	.157	.159	.165	.170	.173	.171	.169	.168	.160
May	28.184	.183	.181	.179	.182	.185	.192	.196	.197	.195	.191	.188	.179
June	28.126	.126	.125	.124	.126	.132	.137	.138	.141	.139	.135	.132	.128
July	28.207	.207	.207	.209	.212	.218	.223	.226	.227	.225	.221	.219	.213
Aug	28.205	.206	.207	.208	.210	.214	.221	.226	.227	.225	.221	.216	.204
Sept	28.145	.146	.146	.147	.151	.153	.159	.166	.167	.167	.164	.158	.144
Oct	28.184	.183	.187	.186	.189	.193	.199	.200	.208	.213	.210	.206	.194
Nov	28.201	.198	.196	.196	.192	.192	.194	.197	.202	.207	.206	.204	.192
Dec	28.166	.160	.159	.162	.161	.159	.160	.162	.165	.172	.176	.178	.164
Year	28.187	.186	.186	.186	.186	.188	.192	.195	.199	.200	.199	.197	.187

* Mean for four years.

BOSTON, MASS.

[λ=42° 21′ N.; φ=71° 4′ W.]

Jan	29.872	.879	.878	.872	.870	.875	.883	.893	.898	.897	.882	.859	.843
Feb	29.908	.907	.900	.899	.899	.904	.913	.922	.919	.917	.911	.894	.877
Mar	29.872	.867	.863	.865	.870	.878	.888	.893	.891	.887	.878	.871	.856
Apr	29.875	.870	.867	.867	.874	.884	.892	.892	.892	.888	.879	.868	.860
May	29.842	.841	.839	.841	.850	.856	.862	.863	.859	.856	.849	.838	.829
June	29.855	.853	.853	.856	.866	.873	.879	.880	.877	.875	.869	.863	.853
July	29.839	.836	.836	.840	.848	.854	.860	.863	.860	.858	.854	.847	.838
Aug	29.848	.846	.845	.847	.856	.862	.867	.868	.867	.865	.857	.850	.841
Sept	29.952	.947	.949	.951	.959	.969	.974	.979	.979	.973	.965	.955	.941
Oct	29.880	.874	.872	.875	.879	.883	.893	.899	.896	.891	.880	.866	.852
Nov	29.951	.953	.948	.950	.952	.958	.966	.975	.974	.970	.955	.939	.928
Dec	29.928	.934	.930	.925	.928	.936	.945	.954	.961	.962	.943	.924	.910
Year	29.885	.884	.882	.882	.888	.894	.902	.907	.906	.903	.894	.881	.869

BUFFALO, N. Y.

[λ=42° 53′ N.; φ=78° 53′ W.]

Jan	29.230	.232	.236	.230	.225	.227	.235	.243	.255	.260	.257	.242	.222
Feb	29.286	.282	.279	.276	.278	.281	.294	.303	.310	.311	.311	.305	.291
Mar	29.280	.276	.268	.266	.270	.274	.282	.289	.292	.294	.290	.286	.274
Apr	29.262	.256	.253	.252	.257	.267	.278	.282	.283	.284	.281	.273	.267
May	29.216	.211	.211	.211	.217	.226	.233	.238	.238	.238	.237	.231	.223
June	29.241	.238	.237	.241	.249	.258	.267	.271	.271	.270	.267	.261	.253
July	29.261	.257	.254	.256	.262	.268	.276	.280	.280	.281	.278	.272	.264
Aug	29.247	.243	.242	.243	.248	.256	.265	.270	.271	.273	.270	.266	.259
Sept	29.321	.318	.318	.320	.327	.336	.344	.345	.349	.349	.344	.337	.327
Oct	29.263	.259	.256	.258	.263	.270	.279	.287	.289	.288	.284	.274	.260
Nov	29.286	.287	.286	.284	.288	.292	.301	.311	.316	.318	.315	.301	.287
Dec	29.299	.301	.306	.300	.297	.299	.309	.314	.321	.328	.323	.305	.289
Year	29.266	.263	.262	.261	.265	.271	.280	.286	.290	.291	.288	.279	.268

CHICAGO, ILL.

[λ=41° 53′ N.; φ=87° 37′ W.]

Jan	29.129	.127	.133	.134	.128	.127	.133	.141	.150	.157	.159	.150	.128
Feb	29.180	.178	.179	.175	.175	.178	.182	.191	.195	.197	.198	.196	.180
Mar	29.140	.139	.133	.128	.128	.132	.138	.145	.147	.151	.151	.148	.138
Apr	29.101	.096	.092	.091	.092	.098	.108	.117	.118	.122	.124	.119	.112
May	29.096	.090	.089	.091	.093	.102	.110	.116	.121	.121	.123	.119	.110
June	29.096	.093	.096	.098	.105	.114	.123	.130	.133	.132	.131	.127	.120
July	29.148	.146	.145	.147	.154	.159	.167	.173	.177	.177	.178	.175	.169
Aug	29.130	.127	.127	.127	.130	.138	.147	.154	.157	.160	.161	.156	.148
Sept	29.172	.170	.170	.172	.175	.181	.192	.198	.202	.204	.202	.197	.186
Oct	29.150	.150	.147	.146	.150	.153	.158	.165	.169	.170	.169	.164	.150
Nov	29.167	.165	.168	.163	.161	.164	.165	.173	.179	.181	.180	.173	.158
Dec	29.162	.159	.163	.161	.154	.153	.159	.164	.169	.177	.180	.170	.151
Year	29.139	.137	.137	.136	.137	.142	.148	.156	.160	.162	.163	.158	.146

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME).

BISMARCK, N. DAK.

[H = 1,681 ft.; gravity correction, 0; local time, 1h 42m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891-95.
.204	.192	.193	.198	.205	.212	.217	.219	.219	.220	.222	.214	.....	.....	Jan.
.241	.225	.219	.221	.224	.228	.233	.237	.238	.238	.237	.239	.....	.....	Feb.
.189	.177	.172	.171	.174	.180	.188	.194	.201	.206	.206	.197	.....	.....	Mar.
.150	.143	.136	.130	.130	.134	.138	.149	.160	.165	.167	.156	.....	.....	Apr.
.172	.165	.158	.151	.148	.147	.148	.157	.169	.177	.180	.175	.....	.....	May.
.121	.113	.107	.102	.097	.095	.097	.103	.113	.123	.126	.121	.....	.....	June.
.205	.196	.189	.181	.174	.172	.171	.178	.191	.201	.206	.203	.....	.....	July.
.192	.181	.170	.161	.155	.151	.153	.167	.182	.190	.195	.195	.....	.....	Aug.
.128	.113	.103	.098	.096	.098	.103	.118	.128	.137	.142	.137	.....	.....	Sept.
.177	.164	.159	.159	.161	.167	.175	.181	.185	.188	.190	.186	.....	.....	Oct.
.179	.169	.167	.174	.182	.192	.196	.198	.200	.201	.201	.193	.....	.....	Nov.
.149	.138	.136	.144	.152	.159	.162	.163	.162	.159	.160	.159	.....	.....	Dec.
.176	.165	.159	.158	.158	.161	.165	.172	.179	.184	.186	.181	.....	.....	Year.

BOSTON, MASS.

[H = 125 ft.; gravity correction, —.01; local time, 16m fast.

.843	.850	.854	.862	.871	.877	.878	.880	.880	.876	.871	.873	.....	.....	Jan.
.869	.871	.876	.886	.897	.904	.905	.910	.910	.908	.908	.901	.....	.....	Feb.
.847	.842	.842	.848	.855	.864	.870	.875	.876	.876	.874	.869	.....	.....	Mar.
.852	.843	.843	.848	.853	.866	.879	.885	.885	.885	.885	.872	.....	.....	Apr.
.820	.811	.810	.811	.815	.824	.835	.846	.845	.846	.844	.839	.....	.....	May.
.845	.836	.832	.831	.833	.840	.847	.856	.859	.859	.857	.856	.....	.....	June.
.832	.824	.821	.819	.823	.830	.837	.846	.845	.844	.841	.842	.....	.....	July.
.832	.826	.824	.823	.827	.836	.846	.852	.854	.855	.855	.848	.....	.....	Aug.
.931	.924	.923	.926	.930	.941	.947	.953	.954	.954	.953	.951	.....	.....	Sept.
.847	.845	.847	.856	.865	.872	.877	.883	.884	.882	.881	.874	.....	.....	Oct.
.924	.929	.934	.944	.951	.957	.959	.962	.962	.963	.961	.953	.....	.....	Nov.
.905	.911	.916	.922	.928	.932	.933	.933	.934	.934	.929	.931	.....	.....	Dec.
.862	.859	.860	.865	.871	.879	.884	.890	.891	.890	.888	.884	.....	.....	Year.

BUFFALO, N. Y.

[H = 690 ft.; gravity correction, 0; local time, 15m slow.]

.213	.217	.222	.227	.233	.239	.242	.241	.239	.238	.233	.235	.....	.....	Jan.
.279	.276	.276	.279	.283	.288	.291	.293	.293	.293	.292	.290	.....	.....	Feb.
.261	.256	.254	.255	.262	.268	.275	.280	.280	.278	.275	.274	.....	.....	Mar.
.258	.250	.246	.250	.253	.258	.268	.275	.275	.276	.275	.266	.....	.....	Apr.
.218	.210	.205	.202	.202	.205	.210	.219	.221	.218	.216	.219	.....	.....	May.
.245	.236	.230	.225	.225	.228	.233	.243	.248	.249	.247	.247	.....	.....	June.
.257	.249	.242	.239	.238	.241	.244	.255	.260	.262	.260	.260	.....	.....	July.
.251	.242	.238	.235	.234	.239	.245	.254	.255	.255	.257	.252	.....	.....	Aug.
.317	.308	.303	.303	.303	.309	.317	.321	.323	.324	.323	.325	.....	.....	Sept.
.251	.246	.245	.247	.252	.256	.260	.263	.263	.261	.259	.264	.....	.....	Oct.
.280	.280	.283	.286	.291	.296	.297	.297	.298	.296	.296	.295	.....	.....	Nov.
.281	.282	.286	.291	.297	.303	.306	.304	.303	.304	.301	.302	.....	.....	Dec.
.259	.254	.252	.253	.256	.261	.266	.270	.272	.271	.270	.269	.....	.....	Year.

CHICAGO, ILL.

[H = 824 ft.; gravity correction, —.01; local time, 50m slow.]

.111	.108	.113	.118	.123	.130	.136	.138	.139	.138	.137	.133	.....	.....	Jan.
.166	.156	.156	.157	.163	.171	.175	.177	.182	.184	.183	.178	.....	.....	Feb.
.126	.114	.109	.107	.110	.116	.120	.127	.132	.135	.133	.131	.....	.....	Mar.
.106	.096	.088	.086	.086	.088	.095	.105	.110	.110	.110	.103	.....	.....	Apr.
.102	.094	.085	.080	.078	.078	.080	.089	.096	.098	.097	.098	.....	.....	May.
.109	.098	.090	.082	.079	.080	.082	.090	.098	.103	.103	.105	.....	.....	June.
.160	.150	.142	.136	.131	.132	.133	.139	.146	.147	.148	.153	.....	.....	July.
.138	.127	.119	.115	.111	.111	.116	.127	.132	.134	.136	.135	.....	.....	Aug.
.173	.160	.153	.148	.148	.149	.156	.164	.168	.171	.172	.174	.....	.....	Sept.
.136	.129	.127	.127	.132	.139	.142	.147	.149	.149	.146	.148	.....	.....	Oct.
.146	.143	.146	.151	.160	.167	.170	.172	.174	.175	.175	.166	.....	.....	Nov.
.138	.134	.138	.143	.148	.154	.158	.160	.162	.163	.163	.158	.....	.....	Dec.
.134	.126	.122	.121	.122	.126	.130	.136	.141	.142	.142	.140	.....	.....	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

CINCINNATI, OHIO.

[λ=39° 6′ N.; φ=84° 30′ W.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	29.403	.404	.410	.407	.403	.405	.414	.421	.434	.441	.442	.426	.400
Feb	29.441	.440	.440	.438	.440	.448	.455	.462	.473	.475	.475	.467	.446
Mar	29.390	.388	.383	.380	.383	.390	.400	.411	.416	.417	.414	.407	.393
Apr	29.347	.343	.341	.341	.342	.353	.367	.377	.377	.378	.375	.367	.357
May	29.338	.327	.327	.328	.335	.346	.348	.362	.363	.363	.361	.354	.343
June	29.336	.332	.332	.335	.345	.357	.367	.372	.372	.371	.368	.362	.349
July	29.379	.376	.375	.378	.386	.395	.405	.410	.412	.410	.408	.401	.390
Aug	29.345	.343	.343	.344	.350	.363	.372	.377	.380	.380	.377	.367	.354
Sept	29.423	.420	.420	.423	.430	.439	.451	.457	.463	.464	.459	.447	.431
Oct	29.412	.413	.412	.414	.421	.429	.438	.446	.454	.453	.448	.435	.415
Nov	29.447	.446	.450	.449	.451	.456	.462	.471	.481	.482	.481	.468	.446
Dec	29.459	.457	.461	.461	.458	.462	.472	.478	.488	.495	.495	.480	.456
Year	29.393	.391	.391	.392	.395	.404	.413	.420	.426	.427	.425	.415	.398

CLEVELAND, OHIO.

[λ=41° 30′ N.; φ=81° 42′ W.]

Jan	29.216	.219	.226	.226	.223	.225	.228	.234	.241	.248	.247	.232	.213
Feb	29.270	.269	.270	.271	.276	.282	.287	.292	.298	.298	.297	.291	.275
Mar	29.250	.250	.246	.245	.247	.252	.258	.261	.263	.263	.260	.254	.244
Apr	29.220	.216	.214	.216	.220	.230	.241	.246	.246	.246	.243	.237	.229
May	29.183	.180	.180	.182	.188	.200	.211	.217	.217	.216	.212	.207	.199
June	29.201	.198	.198	.204	.213	.225	.236	.243	.243	.242	.239	.235	.225
July	29.232	.231	.232	.235	.242	.252	.261	.268	.270	.269	.267	.262	.254
Aug	29.208	.206	.206	.210	.215	.227	.238	.247	.250	.251	.250	.244	.236
Sept	29.278	.278	.277	.281	.287	.298	.309	.317	.320	.321	.319	.309	.297
Oct	29.238	.239	.239	.241	.248	.255	.261	.271	.276	.272	.268	.259	.242
Nov	29.261	.264	.268	.269	.274	.278	.284	.291	.296	.296	.291	.275	.258
Dec	29.281	.284	.291	.291	.290	.291	.296	.298	.303	.309	.307	.289	.269
Year	29.236	.236	.237	.239	.244	.251	.259	.265	.269	.269	.267	.258	.245

DETROIT, MICH.

[λ=42° 20′ N.; φ=83° 3′ W.]

Jan	29.216	.217	.222	.218	.214	.213	.219	.227	.237	.243	.243	.230	.210
Feb	29.271	.270	.268	.266	.269	.275	.279	.288	.295	.297	.295	.290	.273
Mar	29.254	.253	.248	.246	.248	.251	.259	.264	.266	.268	.265	.257	.248
Apr	29.229	.225	.222	.222	.224	.230	.240	.245	.246	.246	.244	.238	.230
May	29.196	.190	.187	.188	.193	.203	.213	.217	.218	.218	.215	.210	.202
June	29.212	.211	.209	.212	.220	.229	.237	.244	.245	.242	.239	.233	.224
July	29.245	.243	.243	.244	.251	.257	.265	.272	.273	.271	.268	.263	.254
Aug	29.228	.225	.224	.225	.230	.237	.247	.253	.256	.256	.254	.248	.238
Sept	29.291	.291	.289	.290	.293	.301	.311	.316	.321	.322	.318	.310	.298
Oct	29.248	.249	.246	.246	.249	.255	.262	.269	.273	.272	.268	.260	.245
Nov	29.264	.262	.265	.263	.266	.268	.274	.282	.287	.289	.288	.276	.260
Dec	29.275	.274	.280	.279	.274	.274	.279	.284	.289	.295	.293	.279	.261
Year	29.244	.242	.242	.242	.244	.249	.257	.263	.267	.268	.266	.258	.245

DODGE CITY, KANS.

[λ=37° 45′ N.; φ=100° W.]

Jan	27.422	.418	.416	.418	.415	.410	.407	.416	.427	.440	.452	.458	.441
Feb	27.434	.431	.429	.425	.419	.418	.419	.426	.438	.449	.458	.462	.456
Mar	27.375	.365	.365	.357	.352	.352	.359	.368	.379	.388	.393	.393	.383
Apr	27.318	.316	.309	.306	.308	.313	.324	.336	.347	.349	.352	.351	.339
May	27.348	.346	.344	.344	.345	.348	.358	.370	.378	.381	.380	.379	.371
June	27.353	.353	.352	.351	.350	.354	.361	.370	.378	.381	.377	.376	.369
July	27.435	.432	.429	.426	.426	.430	.438	.446	.453	.456	.453	.451	.445
Aug	27.435	.433	.430	.429	.429	.431	.440	.447	.454	.457	.458	.455	.445
Sept	27.415	.414	.411	.409	.409	.412	.419	.427	.435	.440	.444	.439	.427
Oct	27.445	.446	.447	.442	.441	.446	.453	.459	.470	.481	.481	.479	.469
Nov	27.443	.440	.435	.436	.434	.435	.440	.446	.461	.472	.478	.479	.462
Dec	27.435	.429	.423	.425	.421	.417	.414	.421	.432	.441	.453	.458	.440
Year	27.405	.402	.399	.397	.396	.397	.403	.411	.421	.428	.432	.432	.421

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

CINCINNATI, OHIO.

[H = 628 ft.; gravity correction, —.02; local time, 38m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891–95.
.384	.379	.382	.387	.392	.399	.403	.406	.408	.408	.406	.407	.....	.....	Jan.
.427	.419	.416	.420	.426	.435	.439	.444	.447	.447	.445	.444	.....	.....	Feb.
.373	.361	.354	.354	.358	.364	.373	.381	.384	.387	.387	.386	.....	.....	Mar.
.346	.332	.325	.323	.322	.324	.332	.345	.349	.352	.353	.349	.....	.....	Apr.
.331	.319	.309	.305	.303	.307	.311	.323	.331	.334	.335	.333	.....	.....	May.
.336	.323	.313	.306	.305	.312	.315	.326	.336	.340	.340	.340	.....	.....	June.
.376	.363	.354	.347	.344	.346	.352	.363	.372	.375	.378	.379	.....	.....	July.
.340	.324	.314	.308	.306	.311	.319	.336	.343	.347	.350	.345	.....	.....	Aug.
.413	.398	.390	.387	.387	.392	.399	.410	.417	.421	.422	.423	.....	.....	Sept.
.396	.385	.379	.378	.382	.390	.397	.403	.408	.409	.408	.414	.....	.....	Oct.
.432	.423	.422	.425	.432	.440	.443	.448	.451	.451	.451	.450	.....	.....	Nov.
.439	.433	.435	.441	.447	.454	.458	.460	.462	.463	.462	.462	.....	.....	Dec.
.383	.372	.366	.365	.367	.373	.378	.387	.392	.394	.395	.394*	.....	.....	Year.

CLEVELAND, OHIO.

[H = 740 ft.; gravity correction, —.01; local time, 27m slow.]

.199	.199	.203	.208	.214	.219	.222	.218	.215	.214	.215	.221	.....	.....	Jan.
.257	.247	.247	.250	.255	.262	.262	.263	.267	.269	.272	.272	.....	.....	Feb.
.228	.220	.217	.217	.220	.226	.232	.237	.240	.241	.242	.242	.....	.....	Mar.
.221	.212	.205	.204	.207	.211	.218	.222	.225	.225	.227	.224	.....	.....	Apr.
.191	.183	.175	.172	.169	.171	.175	.180	.184	.183	.183	.190	.....	.....	May.
.214	.204	.196	.191	.189	.190	.194	.199	.206	.205	.204	.212	.....	.....	June.
.244	.235	.228	.221	.217	.219	.223	.227	.232	.232	.231	.241	.....	.....	July.
.225	.216	.207	.203	.201	.202	.207	.211	.213	.212	.214	.221	.....	.....	Aug.
.282	.271	.264	.263	.264	.267	.275	.278	.278	.279	.277	.287	.....	.....	Sept.
.227	.221	.219	.221	.226	.233	.236	.237	.237	.235	.231	.243	.....	.....	Oct.
.247	.243	.246	.250	.257	.264	.267	.267	.267	.268	.267	.269	.....	.....	Nov.
.257	.255	.259	.264	.272	.279	.281	.278	.278	.277	278	.282	.....	.....	Dec.
.233	.226	.222	.222	.224	.229	.233	.235	.237	.237	.237	.242	.....	.....	Year.

DETROIT, MICH.

[H = 724 ft.; gravity correction, —.01; local time, 32m slow.]

.198	.197	.204	.209	.215	.220	.223	.223	.223	.221	.218	.219	.....	.....	Jan.
.258	.250	.250	.254	.260	.269	.273	.275	.276	.274	.274	.273	.....	.....	Feb.
.234	.226	.223	.221	.225	.232	.240	.246	.249	.249	.247	.247	.....	.....	Mar.
.223	.214	.209	.209	.210	.215	.224	.234	.238	.240	.239	.229	.....	.....	Apr.
.194	.184	.176	.174	.172	.175	.180	.189	.195	.197	.199	.195	.....	.....	May.
.214	.204	.197	.190	.189	.193	.197	.207	.214	.216	.217	.217	.....	.....	June.
.245	.234	.227	.222	.218	.220	.224	.235	.242	.243	.246	.246	.....	.....	July.
.229	.217	.210	.206	.203	.206	.213	.224	.229	.233	.235	.230	.....	.....	Aug.
.285	.275	.267	.264	.265	.270	.278	.286	.289	.292	.292	.292	.....	.....	Sept.
.234	.227	.225	.226	.231	.237	.242	.245	.248	.246	.244	.248	.....	.....	Oct.
.249	.246	.247	.253	.260	.266	.270	.272	.273	.271	.272	.268	.....	.....	Nov.
.250	.247	.251	.256	.264	.270	.275	.276	.274	.275	.274	.273	.....	.....	Dec.
.234	.227	.224	.224	.226	.231	.237	.243	.246	.246	.246	.245	.....	.....	Year.

DODGE CITY, KANS.

[H = 2,504 ft.; gravity correction, —.02; local time, 1h 40m slow.]

.414	.395	.390	.393	.396	.402	.410	.418	.424	.428	.428	.418	.....	.....	Jan.
.437	.414	.402	.399	.401	.406	.413	.420	.426	.430	.433	.427	.....	.....	Feb.
.367	.343	.328	.319	.314	.319	.327	.338	.348	.355	.358	.356	.....	.....	Mar.
.324	.310	.295	.283	.278	.278	.279	.289	.306	.316	.319	.314	.....	.....	Apr.
.358	.343	.329	.315	.307	.300	.300	.311	.325	.341	.346	.345	.....	.....	May.
.359	.346	.334	.320	.310	.304	.308	.319	.333	.352	.357	.348	.....	.....	June.
.434	.421	.408	.392	.382	.377	.380	.393	.406	.423	.431	.424	.....	.....	July.
.433	.419	.404	.392	.383	.379	.384	.397	.415	.428	.433	.425	.....	.....	Aug.
.411	.391	.376	.366	.362	.363	.368	.384	.398	.405	.408	.406	.....	.....	Sept.
.445	.425	.415	.409	.407	.412	.421	.430	.438	.447	.449	.444	.....	.....	Oct.
.438	.419	.409	.408	.410	.417	.427	.435	.440	.445	.446	.440	.....	.....	Nov.
.414	.396	.389	.394	.399	.408	.417	.426	.432	.435	.437	.423	.....	.....	Dec.
.403	.385	.373	.366	.362	.364	.370	.380	.391	.400	.404	.398	.....	.....	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

EASTPORT, ME.

[λ=44° 54′ N.; φ=66° 59′ W.]

1891-95.	1h a.m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p.m.
Jan	29.867	.872	.872	.869	.872	.880	.892	.902	.912	.911	.896	.877	.863
Feb	29.879	.880	.878	.879	.882	.882	.891	.899	.906	.904	.894	.880	.865
Mar	29.853	.847	.844	.845	.851	.858	.866	.875	.882	.879	.870	.858	.844
Apr	29.868	.865	.865	.867	.871	.882	.889	.895	.900	.898	.890	.881	.870
May	29.869	.865	.863	.864	.873	.880	.885	.888	.888	.887	.882	.875	.868
June ...	29.879	.876	.875	.878	.885	.892	.900	.902	.901	.899	.895	.888	.880
July	29.844	.840	.839	.841	.847	.853	.858	.860	.861	.861	.856	.851	.845
Aug	29.855	.853	.852	.854	.861	.869	.875	.878	.880	.880	.877	.871	.866
Sept....	29.944	.942	.943	.947	.954	.962	.968	.974	.976	.972	.964	.956	.946
Oct....	29.870	.868	.867	.869	.872	.878	.887	.892	.890	.886	.876	.864	.855
Nov	29.953	.952	.948	.948	.949	.955	.966	.973	.977	.976	.962	.950	.940
Dec	29.898	.901	.899	.898	.902	.910	.923	.934	.945	.942	.925	.908	.897
Year....	29.882	.880	.879	.880	.885	.892	.900	.906	.910	.908	.899	.888	*.878

GALVESTON, TEX.

[λ=29° 18′ N.; φ=94° 50′ W.]

Jan	30.096	.090	.088	.086	.082	.082	.090	.104	.116	.134	.143	.137	.113
Feb	30.099	.097	.092	.088	.085	.090	.099	.110	.120	.132	.137	.135	.119
Mar	30.053	.051	.043	.037	.034	.040	.052	.063	.075	.084	.089	.088	.076
Apr	29.977	.972	.965	.961	.961	.966	.980	.996	.004	.013	.018	.016	.007
May	29.952	.945	.936	.934	.938	.944	.955	.967	.976	.982	.984	.983	.975
June ...	29.975	.969	.964	.963	.966	.973	.979	.991	.002	.006	.010	.010	.005
July	30.028	.024	.018	.018	.021	.028	.036	.046	.056	.059	.063	.063	.058
Aug	29.978	.976	.972	.971	.972	.979	.989	.999	.010	.016	.022	.020	.010
Sept....	29.987	.984	.979	.976	.979	.986	.994	.002	.013	.022	.025	.022	.012
Oct....	30.030	.028	.025	.022	.025	.034	.044	.052	.067	.076	.078	.073	.056
Nov	30.116	.113	.108	.106	.106	.110	.120	.132	.147	.158	.162	.154	.134
Dec	30.142	.138	.136	.135	.134	.134	.143	.154	.167	.182	.188	.181	.158
Year....	30.036	.032	.027	.025	.025	.030	.040	.051	.063	.072	.077	.074	.060

*Mean for four years.

HAVRE, MONT.

[λ=48° 34′ N.; φ=109° 40′ W.]

Jan	27.349	.345	.340	.337	.339	.335	.329	.328	.338	.352	.364	.373	.372
Feb	27.367	.367	.362	.358	.352	.347	.345	.347	.351	.359	.366	.371	.374
Mar	27.310	.308	.304	.300	.292	.287	.288	.288	.294	.305	.315	.322	.324
Apr	27.304	.303	.302	297	.295	.296	.299	.302	.308	.313	.317	.319	.313
May	27.320	.322	.322	.322	.324	.326	.330	.332	.336	.337	.335	.332	.325
June ...	27.294	.294	.294	.294	.294	.298	.304	.308	.310	.310	.308	.304	.298
July	27.351	.355	.359	.360	.364	.368	.374	.379	.383	.383	.380	.374	.368
Aug	27.357	.359	.363	.364	.367	.370	.376	.382	.388	.393	.392	.388	.378
Sept....	27.305	.305	.307	.308	.308	.308	.310	.314	.318	.322	.324	.323	.315
Oct....	27.362	.363	.367	.366	.365	.363	.364	.364	.364	.369	.375	.378	.373
Nov	27.335	.337	.336	.334	.335	.330	.330	.329	.331	.338	.345	.350	.349
Dec	27.298	.293	.288	.286	.288	.282	.278	.276	.283	.293	.304	.313	.313
Year....	27.329	.329	.329	.327	.327	.326	.327	.329	.334	.340	.344	.346	.342

KEY WEST, FLA.

[λ=24° 34′ N.; φ=81° 49′ W.]

Jan	30.112	.104	.098	.094	.092	.098	.109	.126	.144	.154	.150	.133	.107
Feb	30.126	.117	.106	.102	.103	.110	.124	.138	.151	.160	.160	.146	.126
Mar	30.096	.084	.074	.070	.073	.082	.095	.110	.120	.125	.126	.117	.100
Apr	30.068	.056	.046	.043	.046	.056	.072	.082	.089	.094	.092	.084	.073
May	30.015	.005	.997	.995	.998	.008	.022	.030	.036	.038	.038	.031	.021
June ...	30.018	.008	.001	.000	.003	.013	.026	.037	.042	.044	.044	.040	.030
July	30.084	.072	.064	.062	.064	.070	.083	.092	.097	.100	.101	.098	.089
Aug	30.019	.009	.001	.997	.999	.006	.020	.030	.038	.043	.044	.039	.028
Sept....	29.981	.970	.960	.957	.961	.969	.983	.994	.002	.007	.005	.998	.985
Oct....	29.950	.940	.932	.929	.933	.942	.956	.969	.979	.984	.979	.966	.948
Nov	30.072	.064	.055	.053	055	.063	.077	.091	.104	.110	.104	.088	.067
Dec	30.128	.120	.113	.109	.108	.113	.127	.143	.158	.166	.161	.143	.118
Year....	30.056	.046	.037	.034	.036	.044	.058	.070	.080	.085	.084	.074	.058

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

EASTPORT, ME.

[H = 76 ft.; gravity correction, 0; local time, 32m fast.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891–95.
.860	.861	.862	.865	.866	.868	.870	.870	.870	.867	.864	.875	.....	.....	Jan.
.857	.855	.855	.862	.868	.873	.875	.882	.881	.882	.881	.879	.....	.....	Feb.
.835	.827	.826	.830	.835	.845	.850	.857	.857	.853	.852	.852	.....	.....	Mar.
.860	.851	.852	.853	.856	.867	.875	.881	.882	.882	.881	.874	.....	.....	Apr.
.861	.855	.850	.849	.853	.859	.866	.873	.874	.873	.872	.869	.....	.....	May.
.874	.868	.864	.860	.863	.866	.873	.879	.881	.882	.881	.881	.....	.....	June.
.840	.835	.832	.831	.833	.836	.840	.846	.847	.848	.846	.845	.....	.....	July.
.861	.855	.853	.850	.851	.855	.859	.862	.862	.861	.861	.863	.....	.....	Aug.
.937	.933	.932	.933	.936	.941	.944	.946	.945	.945	.945	.949	.....	.....	Sept.
.850	.848	.851	.856	.861	.866	.870	.875	.876	.874	.874	.870	.....	.....	Oct.
.938	.938	.940	.947	.951	.953	.956	.960	.959	.959	.958	.954	.....	.....	Nov.
.894	.897	.899	.904	.909	.910	.909	.907	.904	.900	.897	.909	.....	.....	Dec.
.872	.869	.868	.870	.874	.878	.882	.886	.886	.886	.884	.885	.....	.....	Year.

GALVESTON, TEX.*

[H = 42 ft.; gravity correction, — .04; local time, 1h 19m slow.]

.085	.068	.060	.059	.063	.068	.077	.086	.094	.098	.097	.092	.....	.....	Jan.
.094	.076	.065	.062	.064	.071	.079	.087	.097	.100	.101	.096	.....	.....	Feb.
.057	.038	.022	.013	.012	.015	.019	.028	.041	.046	.047	.047	.....	.....	Mar.
.991	.979	.962	.950	.948	.948	.951	.960	.974	.979	.978	.978	.....	.....	Apr.
.965	.953	.938	.928	.922	.919	.924	.933	.945	.952	.953	.950	.....	.....	May.
.994	.984	.972	.964	.956	.954	.958	.965	.974	.981	.984	.979	.....	.....	June.
.048	.035	.022	.011	.003	.002	.004	.010	.019	.028	.030	.030	.....	.....	July.
.998	.984	.968	.958	.951	.950	.953	.964	.974	.980	.981	.982	.....	.....	Aug.
.996	.979	.966	.960	.960	.962	.966	.978	.988	.991	.989	.988	.....	.....	Sept.
.034	.017	.007	.004	.004	.011	.019	.029	.036	.038	.036	.035	.....	.....	Oct.
.109	.094	.087	.086	.088	.095	.106	.114	.122	.124	.122	.118	.....	.....	Nov.
.128	.114	.108	.108	.110	.118	.130	.138	.147	.152	.153	.142	.....	.....	Dec.
.042	.027	.015	.009	.007	.009	.016	.024	.034	.039	.039	.036	.....	.....	Year.

* Mean for four years.

HAVRE, MONT.

[H = 2,477 ft.; gravity correction, +.01; local time, 2h 19m slow.]

.361	.346	.336	.335	.336	.334	.333	.341	.347	.351	.354	.345	.....	.....	Jan.
.368	.354	.340	.336	.334	.332	.331	.341	.349	.354	.361	.353	.....	.....	Feb.
.319	.311	.301	.293	.289	.288	.285	.292	.300	.307	.310	.301	.....	.....	Mar.
.303	.293	.284	.277	.271	.270	.270	.276	.289	.299	.303	.296	.....	.....	Apr.
.313	.306	.298	.290	.287	.284	.280	.287	.294	.306	.313	.313	.....	.....	May.
.291	.283	.276	.271	.267	.265	.262	.268	.274	.287	.294	.289	.....	.....	June.
.360	.351	.343	.335	.324	.318	.313	.316	.323	.338	.346	.353	.....	.....	July.
.366	.355	.345	.335	.325	.321	.319	.324	.335	.347	.352	.358	.....	.....	Aug.
.305	.294	.284	.277	.272	.272	.274	.280	.289	.296	.299	.301	.....	.....	Sept.
.362	.349	.340	.335	.332	.331	.334	.341	.347	.354	.358	.357	.....	.....	Oct.
.336	.323	.312	.308	.308	.307	.308	.316	.321	.326	.332	.328	.....	.....	Nov.
.300	.285	.275	.273	.274	.276	.275	.281	.285	.288	.289	.288	.....	.....	Dec.
.332	.321	.311	.305	.302	.300	.299	.305	.313	.321	.326	.324	.....	.....	Year.

KEY WEST, FLA.

[H = 22 ft.; gravity correction, —.05; local time, 27m slow.]

.088	.079	.077	.081	.088	.098	.110	.117	.123	.123	.118	.110	.....	.....	Jan.
.106	.093	.086	.087	.094	.103	.116	.125	.130	.132	.129	.120	.....	.....	Feb.
.083	.068	.057	.055	.061	.072	.084	.095	.104	.105	.102	.090	.....	.....	Mar.
.058	.041	.027	.025	.029	.041	.056	.068	.075	.078	.074	.062	.....	.....	Apr.
.007	.990	.976	.971	.974	.967	.001	.012	.020	.023	.020	.009	.....	.....	May.
.018	.003	.991	.987	.991	.003	.017	.025	.032	.034	.030	.018	.....	.....	June.
.079	.064	.050	.045	.050	.062	.075	.083	.090	.093	.090	.078	.....	.....	July.
.014	.000	.985	.983	.986	.997	.012	.023	.029	.030	.026	.015	.....	.....	Aug.
.968	.950	.939	.940	.948	.962	.978	.988	.992	.991	.986	.976	.....	.....	Sept.
.931	.921	.916	.919	.929	.940	.955	.965	.969	.968	.962	.949	.....	.....	Oct.
.049	.041	.037	.041	.051	.063	.076	.084	.088	.089	.082	.071	.....	.....	Nov.
.100	.093	.090	.094	.103	.114	.127	.135	.141	.140	.135	.124	.....	.....	Dec.
.042	.029	.019	.019	.025	.035	.051	.060	.066	.067	.063	.052	.....	.....	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

MARQUETTE, MICH.*

[λ = 46° 34′ N.; φ = 87° 24′ W.]

1891-95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	29.124	.124	.130	.130	.126	.124	.128	.132	.134	.140	.145	.142	.126
Feb	29.219	.220	.221	.216	.217	.219	.221	.223	.224	.227	.230	.229	.220
Mar	29.174	.174	.172	.166	.168	.171	.178	.182	.182	.184	.186	.184	.178
Apr	29.184	.180	.176	.174	.175	.180	.187	.194	.192	.196	.201	.203	.200
May	29.125	.120	.118	.119	.121	.125	.132	.137	.136	.135	.134	.134	.129
June ...	29.130	.129	.130	.132	.137	.144	.148	.152	.156	.156	.155	.153	.147
July	29.164	.160	.159	.162	.167	.172	.178	.182	.185	.184	.182	.180	.176
Aug	29.175	.175	.174	.174	.177	.183	.191	.194	.194	.196	.198	.194	.189
Sept	29.154	.156	.154	.155	.157	.162	.167	.169	.170	.171	.169	.164	.156
Oct	29.120	.121	.120	.120	.124	.128	.132	.136	.138	.138	.135	.134	.124
Nov	29.168	.166	.168	.163	.163	.163	.168	.172	.176	.180	.182	.177	.167
Dec	29.160	.156	.159	.156	.150	.148	.150	.152	.152	.156	.163	.158	.146
Year	29.158	.157	.157	.156	.157	.159	.165	.169	.170	.172	.173	.171	.163

* For four years—1892-1895.

MEMPHIS, TENN.

[λ = 35° 9′ N.; φ = 90° 3′ W.]

Jan	29.715	.713	.715	.717	.713	.714	.723	.733	.744	.755	.761	.753	.729
Feb	29.726	.724	.723	.722	.722	.729	.737	.750	.760	.769	.775	.775	.758
Mar	29.661	.661	.659	.656	.660	.667	.681	.692	.704	.710	.711	.705	.691
Apr	29.601	.599	.597	.597	.601	.607	.622	.635	.644	.649	.651	.646	.632
May	29.597	.589	.585	.587	.592	.604	.617	.629	.634	.636	.638	.634	.622
June ...	29.582	.578	.578	.579	.586	.596	.610	.622	.629	.630	.629	.624	.612
July	29.628	.624	.622	.624	.630	.639	.651	.661	.669	.671	.672	.669	.657
Aug	29.596	.592	.590	.591	.595	.605	.617	.628	.636	.640	.642	.637	.623
Sept	29.653	.651	.649	.650	.655	.663	.677	.687	.696	.703	.704	.698	.683
Oct	29.687	.688	.688	.688	.693	.701	.710	.723	.735	.741	.742	.734	.714
Nov	29.732	.730	.730	.731	.731	.737	.745	.756	.770	.777	.780	.772	.749
Dec	29.748	.744	.747	.749	.747	.748	.756	.767	.779	.793	.799	.790	.765
Year ...	29.660	.658	.657	.658	.660	.668	.679	.690	.700	.706	.709	.703	.686

NEW ORLEANS, LA.

[λ = 29° 58′ N.; φ = 90° 4′ W.]

Jan	30.084	.082	.078	.077	.074	.076	.085	.097	.113	.126	.127	.114	.089
Feb	30.080	.075	.068	.065	.064	.068	.078	.088	.101	.110	.113	.107	.088
Mar	30.035	.032	.025	.021	.023	.033	.046	.059	.071	.081	.083	.078	.060
Apr	29.995	.988	.983	.981	.984	.993	.007	.018	.028	.034	.036	.030	.019
May	29.970	.963	.959	.959	.964	.975	.987	.994	.001	.002	.001	.995	.982
June ...	29.950	.945	.941	.943	.949	.960	.970	.977	.983	.982	.981	.978	.968
July	30.005	.001	.998	.000	.006	.016	.026	.035	.038	.039	.037	.034	.024
Aug	29.956	.951	.947	.948	.952	.962	.974	.983	.989	.991	.992	.986	.975
Sept	29.967	.963	.959	.959	.964	.973	.984	.994	.003	.008	.005	.998	.980
Oct.	30.014	.009	.006	.005	.010	.018	.028	.037	.052	.058	.057	.049	.028
Nov	30.100	.097	.094	.094	.096	.102	.111	.121	.137	.146	.146	.135	.111
Dec	30.126	.122	.121	.119	.119	.122	.131	.141	.156	.168	.168	.156	.130
Year	30.024	.019	.015	.014	.017	.025	.036	.045	.056	.062	.062	.055	.038

NEW YORK, N. Y.

[λ = 40° 43′ N.; φ = 74° W.]

Jan	29.717	.718	.715	.708	.705	.709	.717	.727	.737	.740	.726	.707	.688
Feb	29.759	.757	.750	.746	.749	.752	.759	.768	.773	.774	.771	.759	.741
Mar	29.721	.718	.711	.710	.715	.723	.733	.737	.738	.737	.731	.722	.706
Apr	29.708	.704	.700	.698	.701	.710	.721	.724	.723	.723	.715	.706	.695
May	29.662	.658	.656	.655	.660	.670	.677	.681	.678	.676	.670	.662	.652
June ...	29.678	.676	.674	.675	.682	.691	.698	.702	.701	.700	.696	.690	.681
July	29.676	.673	.671	.672	.679	.686	.694	.699	.697	.697	.694	.687	.678
Aug	29.668	.665	.663	.662	.665	.671	.678	.683	.685	.685	.679	.673	.664
Sept	29.776	.772	.770	.771	.776	.785	.793	.799	.800	.797	.790	.781	.768
Oct.	29.716	.713	.709	.708	.711	.715	.723	.730	.729	.725	.716	.705	.690
Nov	29.785	.785	.781	.780	.782	.787	.796	.804	.806	.806	.794	.778	.765
Dec	29.784	.786	.786	.782	.780	.784	.793	.801	.807	.810	.796	.779	.762
Year	29.721	.719	.716	.714	.717	.724	.732	.738	.740	.739	.732	.721	.708

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

MARQUETTE, MICH.

[H = 734 ft.; gravity correction, —.02; local time, 49m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891-95.
.114	.113	.120	.128	.130	.133	.134	.134	.134	.131	.130	.130	.....	.....	Jan.
.205	.197	.198	.202	.204	.209	.212	.212	.212	.215	.216	.215	.....	.....	Feb.
.170	.161	.159	.159	.161	.164	.167	.170	.169	.171	.169	.172	.....	.....	Mar.
.199	.198	.195	.194	.192	.192	.195	.200	.201	.198	.196	.192	.....	.....	Apr.
.125	.122	.121	.122	.120	.120	.121	.126	.130	.132	.130	.126	.....	.....	May.
.141	.136	.133	.130	.128	.126	.126	.130	.136	.135	.136	.138	.....	.....	June.
.171	.166	.162	.160	.158	.158	.157	.161	.165	.166	.167	.168	.....	.....	July.
.184	.177	.174	.172	.170	.170	.171	.178	.180	.180	.179	.181	.....	.....	Aug.
.147	.140	.138	.138	.141	.143	.149	.155	.157	.157	.154	.155	.....	.....	Sept.
.112	.105	.104	.108	.112	.118	.119	.121	.121	.120	.116	.122	.....	.....	Oct.
.160	.157	.164	.168	.174	.180	.179	.179	.180	.180	.179	.172	.....	.....	Nov.
.139	.138	.146	.154	.160	.162	.162	.162	.162	.162	.160	.154	.....	.....	Dec.
.156	.151	.151	.153	.154	.156	.158	.161	.162	.162	.161	.160	.....	.....	Year.

MEMPHIS, TENN.

[H = 399 ft.; gravity correction, —.03; local time, 1h slow.]

.704	.692	.690	.692	.696	.704	.710	.715	.719	.720	.720	.719	.....	.....	Jan.
.732	.715	.706	.702	.703	.709	.715	.721	.726	.727	.727	.732	.....	.....	Feb.
.669	.648	.634	.628	.625	.629	.634	.643	.650	.652	.655	.664	.....	.....	Mar.
.621	.602	.587	.578	.573	.572	.574	.588	.598	.602	.604	.608	.....	.....	Apr.
.611	.596	.581	.572	.565	.563	.570	.581	.592	.596	.597	.600	.....	.....	May.
.597	.581	.570	.561	.557	.557	.560	.571	.584	.588	.588	.590	.....	.....	June.
.643	.629	.619	.611	.606	.609	.613	.619	.627	.629	.630	.635	.....	.....	July.
.609	.591	.577	.571	.567	.569	.576	.589	.599	.602	.603	.602	.....	.....	Aug.
.667	.649	.637	.630	.628	.629	.634	.646	.652	.655	.654	.660	.....	.....	Sept.
.691	.675	.665	.661	.662	.667	.673	.681	.685	.688	.687	.695	.....	.....	Oct.
.724	.710	.704	.705	.708	.717	.723	.731	.734	.735	.736	.736	.....	.....	Nov.
.741	.727	.722	.723	.723	.729	.737	.740	.744	.748	.749	.750	.....	.....	Dec.
.667	.651	.641	.636	.634	.638	.643	.652	.659	.662	.662	.666	.....	.....	Year.

NEW ORLEANS, LA.

[H = 54 ft.; gravity correction, —.04; local time, 1h slow.]

.065	.052	.048	.051	.055	.064	.072	.082	.087	.090	.082	.082	.....	.....	Jan.
.067	.050	.042	.042	.049	.057	.066	.074	.082	.084	.084	.075	.....	.....	Feb.
.039	.018	.006	.998	.999	.004	.013	.022	.033	.036	.033	.035	.....	.....	Mar.
.005	.988	.975	.968	.964	.967	.971	.986	.994	.000	.999	.996	.....	.....	Apr.
.970	.958	.944	.936	.933	.937	.942	.955	.966	.971	.971	.968	.....	.....	May.
.957	.945	.935	.927	.924	.928	.934	.944	.953	.958	.958	.954	.....	.....	June.
.013	.000	.991	.984	.981	.984	.988	.996	.006	.010	.009	.009	.....	.....	July.
.961	.945	.934	.928	.925	.928	.934	.946	.957	.959	.959	.958	.....	.....	Aug.
.964	.948	.938	.935	.938	.943	.952	.964	.971	.973	.971	.969	.....	.....	Sept.
.007	.992	.985	.982	.986	.995	.003	.013	.022	.024	.022	.017	.....	.....	Oct.
.085	.072	.066	.064	.069	.079	.089	.099	.107	.109	.107	.101	.....	.....	Nov.
.105	.092	.088	.089	.094	.102	.113	.124	.130	.134	.131	.124	.....	.....	Dec.
.020	.005	.996	.992	.993	.999	.006	.017	.026	.029	.027	.024	.....	.....	Year.

NEW YORK, N. Y.

[H = 314 ft.; gravity correction, —.01; local time, 4m fast.]

.682	.683	.688	.695	.703	.712	.718	.720	.721	.720	.716	.711	.....	.....	Jan.
.728	.726	.727	.733	.741	.747	.752	.755	.758	.758	.757	.752	.....	.....	Feb.
.691	.683	.679	.683	.687	.695	.704	.711	.717	.721	.722	.712	.....	.....	Mar.
.684	.673	.672	.674	.676	.684	.697	.707	.711	.714	.716	.702	.....	.....	Apr.
.642	.632	.628	.627	.627	.634	.642	.654	.659	.662	.663	.655	.....	.....	May.
.671	.663	.656	.652	.654	.658	.665	.676	.681	.683	.683	.679	.....	.....	June.
.669	.660	.653	.650	.651	.655	.661	.671	.675	.679	.678	.675	.....	.....	July.
.655	.647	.643	.643	.645	.652	.661	.670	.674	.676	.676	.666	.....	.....	Aug.
.757	.749	.745	.746	.749	.757	.766	.773	.777	.779	.779	.773	.....	.....	Sept.
.680	.676	.677	.682	.690	.698	.706	.713	.716	.716	.715	.707	.....	.....	Oct.
.756	.755	.760	.767	.774	.781	.787	.792	.796	.798	.797	.784	.....	.....	Nov.
.755	.756	.761	.767	.775	.781	.786	.788	.790	.791	.788	.783	.....	.....	Dec.
.698	.692	.691	.693	.698	.704	.712	.719	.723	.725	.724	.717	.....	.....	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

PHILADELPHIA, PA.

[λ=39° 57′ N., φ=75° 9′ W.]

1891-95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	29.936	.939	.940	.935	.933	.936	.947	.959	.971	.974	.963	.941	.920
Feb	29.981	.979	.974	.973	.975	.981	.991	.001	.007	.010	.007	.993	.973
Mar	29.937	.935	.931	.933	.940	.953	.960	.965	.968	.967	.959	.948	.929
Apr	29.922	.916	.916	.916	.923	.934	.944	.947	.949	.948	.939	.928	.917
May	29.871	.867	.868	.868	.876	.886	.894	.899	.899	.897	.890	.880	.867
June	29.887	.884	.884	.886	.893	.902	.910	.915	.914	.913	.907	.899	.887
July	29.891	.887	.887	.890	.896	.904	.912	.918	.915	.914	.910	.902	.892
Aug	29.875	.871	.867	.867	.872	.880	.889	.894	.898	.900	.895	.887	.876
Sept	29.986	.983	.981	983	.989	.998	.007	.014	.018	.016	.008	.998	.983
Oct	29.934	.930	.924	.926	.931	.935	.946	.958	.959	.957	.950	.933	.915
Nov	30.004	.003	.003	.002	.006	.011	.021	.032	.037	.036	.024	.005	.989
Dec	30.011	.015	.016	.013	.013	.018	.027	.036	.046	.050	.039	.018	.001
Year	29.936	.934	.933	.933	.937	.944	.954	.962	.965	.965	.958	.944	.929

PITTSBURG, PA.

[λ=40° 32′ N.; φ=80° 2′ W.]

Jan.*	29.135	.138	.142	.142	.137	.139	.143	.147	.152	.156	.152	.138	.118
Feb	29.177	.177	.176	.175	.178	.182	.189	.197	.201	.200	.199	.190	.175
Mar	29.157	.156	.152	.151	.152	.156	.161	.165	.167	.164	.159	.151	.138
Apr	29.136	.132	.130	.130	.133	.141	.150	.154	.153	.152	.147	.136	.126
May	29.105	.102	.101	.101	.106	.115	.124	.129	.128	.124	.117	.107	.098
June	29.126	.126	.124	.126	.133	.141	.150	.156	.156	.152	.147	.138	.127
July	29.152	.150	.150	.153	.160	.168	.175	.180	.177	.173	.168	.159	.148
Aug	29.123	.121	.121	.124	.130	.138	.147	.155	.156	.154	.149	.140	.128
Sept	29.207	.206	.205	.208	.213	.222	.233	.239	.242	.239	.230	.218	.204
Oct	29.166	.166	.165	.169	.174	.181	.189	.197	.199	.194	.186	.174	.154
Nov	29.197	.199	.203	.202	.205	.210	.217	.224	.226	.227	.223	.210	.192
Dec	29.214	.215	.219	.218	.216	.218	.223	.229	.234	.239	.236	.220	.201
Year	29.158	.157	.157	.158	.161	.168	.175	.181	.183	.181	.176	.165	.151

* Mean for four years.

PORTLAND, OREG.

[λ=45° 32′ N.; φ=122° 43′ W.]

Jan	29.934	.936	.936	.935	.939	.942	.938	.932	.930	.934	.940	.951	.961
Feb	29.899	.901	.902	.901	.902	.899	.898	.897	.895	.896	.901	.909	.916
Mar	29.850	.854	.855	.856	.858	.855	.853	.852	.853	.856	.862	.866	.870
Apr	29.902	.904	.906	.904	.901	.899	.897	.897	.901	.905	.908	.911	.915
May	29.868	.870	.873	.871	.872	.872	.872	.874	.878	.884	.886	.884	.882
June	29.891	.895	.897	.898	.899	.900	.902	.905	.909	.912	.914	.911	.905
July	29.887	.892	.898	.901	.903	.907	.911	.915	.921	.925	.926	.923	.919
Aug	29.842	.848	.855	.858	.860	.864	.867	.871	.881	.886	.889	.887	.883
Sept	29.842	.842	.844	.845	.844	.843	.843	.845	.852	.859	.864	.869	.868
Oct	29.901	.902	.905	.906	.907	.906	.906	.907	.909	.915	.922	.927	.928
Nov	29.958	.958	.957	.955	.953	.951	.946	.944	.947	.952	.959	.968	.975
Dec	29.927	.930	.930	.927	.931	.932	.926	.924	.924	.926	.931	.941	.950
Year	29.892	.894	.896	.896	.897	.898	.897	.897	.900	.904	.908	.912	.914

ST. LOUIS, MO.

[λ=38° 38′ N.; φ=90° 12′ W.]

Jan	29.484	.483	.487	.488	.485	.483	.489	.496	.505	.513	.518	.511	.486
Feb	29.515	.514	.514	.510	.512	.516	.521	.527	.535	.540	.545	.543	.528
Mar	29.411	.439	.434	.428	.427	.432	.441	.452	.459	.463	.464	.461	.450
Apr	29.373	.369	.364	.364	.368	.373	.386	.398	.401	.407	.409	.404	.392
May	29.377	.374	.373	.374	.379	.386	.398	.404	.406	.406	.405	.402	.392
June	29.369	.367	.364	.367	.373	.384	.396	.408	.412	.409	.407	.402	.392
July	29.429	.426	.424	.426	.432	.441	.451	.461	.466	.465	.465	.462	.452
Aug	29.403	.399	.400	.402	.407	.415	.427	.436	.441	.444	.445	.440	.429
Sept	29.460	.461	.462	.463	.471	.479	.491	.499	.503	.507	.505	.497	.480
Oct	29.474	.476	.476	.476	.482	.490	.497	.507	.517	.519	.517	.510	.491
Nov	29.501	.499	.500	.499	.497	.501	.506	.516	.525	.533	.534	.531	.511
Dec	29.503	.499	.502	.502	.497	.496	.503	.512	.520	.527	.534	.525	.504
Year	29.444	.442	.442	.442	.444	.450	.459	.468	.474	.478	.479	.474	.459

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

PHILADELPHIA, PA.

[H = 117 ft.; gravity correction, —.01.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891–95.
.914	.915	.919	.926	.935	.944	.948	.949	.948	.943	.938	.940	.....	.....	Jan.
.959	.952	.953	.958	.964	.974	.979	.982	.983	.982	.981	.979	.....	.....	Feb.
.915	.906	.900	.902	.908	.917	.926	.933	.937	.938	.937	.935	.....	.....	Mar.
.904	.892	.887	.888	.890	.898	.912	.923	.926	.929	.930	.920	.....	.....	Apr.
.856	.844	.839	.837	.838	.845	.855	.868	.872	.873	.873	.869	.....	.....	May.
.878	.866	.861	.856	.860	.866	.871	.885	.890	.892	.891	.887	.....	.....	June.
.882	.871	.863	.859	.862	.867	.873	.883	.890	.892	.891	.889	.....	.....	July.
.867	.855	.849	.848	.849	.856	.869	.879	.882	.884	.884	.875	.....	.....	Aug.
.970	.959	.956	.956	.960	.970	.979	.986	.989	.990	.989	.986	.....	.....	Sept.
.905	.900	.899	.903	.912	.922	.929	.935	.936	.935	.934	.930	.....	.....	Oct.
.979	.979	.982	.988	.998	.006	.013	.018	.018	.016	.013	.008	.....	.....	Nov.
.992	.990	.993	.998	.005	.013	.017	.018	.019	.020	.015	.016	.....	.....	Dec.
.918	.911	.908	.910	.915	.923	.931	.938	.941	.941	.940	.936	.....	.....	Year.

PITTSBURG, PA.

[H = 842 ft.; gravity correction, —.01; local time, 20m slow.]

.107	.106	.112	.118	.126	.134	.139	.139	.140	.138	.135	.134	.....	.....	Jan.
.158	.152	.152	.154	.160	.168	.174	.176	.176	.177	.177	.176	.....	.....	Feb.
.122	.115	.111	.113	.120	.128	.137	.144	.147	.150	.151	.144	.....	.....	Mar.
.115	.106	.100	.101	.106	.113	.125	.135	.138	.140	.141	.131	.....	.....	Apr.
.087	.075	.068	.067	.070	.078	.089	.096	.101	.104	.104	.100	.....	.....	May.
.114	.103	.095	.091	.092	.099	.108	.116	.122	.126	.127	.125	.....	.....	June.
.136	.125	.118	.114	.115	.119	.128	.137	.142	.146	.148	.147	.....	.....	July.
.114	.102	.091	.091	.092	.097	.106	.115	.120	.125	.128	.124	.....	.....	Aug.
.189	.177	.171	.171	.176	.183	.193	.198	.203	.205	.207	.206	.....	.....	Sept.
.140	.135	.131	.134	.142	.148	.154	.159	.162	.161	.161	.164	.....	.....	Oct.
.180	.176	.178	.182	.186	.191	.198	.201	.202	.202	.202	.202	.....	.....	Nov.
.189	.187	.189	.194	.200	.207	.210	.210	.212	.215	.214	.213	.....	.....	Dec.
.138	.130	.127	.128	.132	.139	.147	.152	.155	.157	.158	.156	.....	.....	Year.

PORTLAND, OREG.

[H = 157 ft.; gravity correction, 0; local time, 3h 11m slow.]

.961	.950	.935	.926	.923	.921	.918	.920	.923	.926	.929	.935	.....	.....	Jan.
.922	.916	.905	.892	.885	.880	.877	.879	.884	.887	.892	.897	.....	.....	Feb.
.870	.863	.853	.839	.832	.826	.820	.822	.827	.836	.843	.849	.....	.....	Mar.
.913	.905	.899	.891	.884	.879	.876	.877	.881	.892	.903	.898	.....	.....	Apr.
.877	.868	.861	.852	.842	.834	.829	.828	.835	.845	.859	.863	.....	.....	May.
.900	.893	.887	.878	.871	.865	.860	.860	.866	.873	.886	.891	.....	.....	June.
.912	.901	.892	.880	.867	.855	.848	.848	.854	.862	.877	.893	.....	.....	July.
.873	.861	.851	.838	.825	.813	.808	.806	.811	.821	.834	.852	.....	.....	Aug.
.862	.855	.845	.835	.827	.821	.817	.819	.826	.834	.839	.843	.....	.....	Sept.
.925	.915	.904	.894	.888	.882	.879	.884	.890	.896	.902	.904	.....	.....	Oct.
.976	.966	.956	.947	.945	.943	.940	.942	.944	.945	.947	.953	.....	.....	Nov.
.948	.933	.921	.912	.912	.913	.913	.920	.921	.928	.931	.927	.....	.....	Dec.
.912	.902	.892	.882	.875	.869	.865	.867	.872	.879	.887	.892	.....	.....	Year.

ST. LOUIS, MO.

[H = 571 ft.; gravity correction, —.02; local time, 1h 1m slow.]

.465	.456	.459	.462	.469	.476	.480	.485	.489	.492	.489	.485	.....	.....	Jan.
.509	.494	.491	.490	.493	.499	.506	.510	.513	.516	.517	.515	.....	.....	Feb.
.431	.415	.405	.399	.399	.402	.408	.420	.427	.431	.431	.432	.....	.....	Mar.
.381	.367	.355	.349	.347	.347	.350	.366	.373	.376	.376	.374	.....	.....	Apr.
.381	.370	.358	.350	.347	.345	.349	.360	.371	.374	.377	.377	.....	.....	May.
.380	.367	.356	.347	.340	.341	.345	.353	.364	.373	.375	.375	.....	.....	June.
.440	.429	.418	.408	.401	.400	.402	.409	.421	.427	.428	.432	.....	.....	July.
.416	.400	.387	.379	.374	.373	.377	.390	.400	.405	.408	.408	.....	.....	Aug.
.462	.444	.431	.425	.423	.425	.431	.443	.450	.455	.457	.444	.....	.....	Sept.
.469	.454	.447	.444	.445	.450	.456	.462	.468	.472	.471	.478	.....	.....	Oct.
.493	.480	.477	.479	.484	.492	.496	.500	.504	.505	.504	.503	.....	.....	Nov.
.484	.472	.472	.476	.481	.489	.495	.498	.500	.502	.503	.500	.....	.....	Dec.
.443	.429	.421	.417	.417	.420	.425	.433	.440	.444	.445	.444	.....	.....	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

ST. PAUL, MINN.

[λ = 44° 58′ N.; φ = 93° 3′ W.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	29.134	.133	.137	.141	.139	.134	.134	.136	.142	.151	.159	.159	.140
Feb	29.170	.168	.168	.165	.163	.163	.164	.163	.170	.175	.177	.177	.168
Mar	29.113	.114	.114	.111	.110	.111	.117	.121	.125	.126	.125	.121	.114
Apr	29.046	.046	.043	.046	.048	.054	.063	.072	.075	.075	.073	.070	.061
May	29.055	.053	.051	.053	.056	.063	.071	.077	.078	.075	.071	.066	.058
June ...	29.041	.040	.041	.041	.045	.052	.059	.064	.063	.063	.060	.055	.046
July	29.100	.101	.100	.102	.107	.114	.122	.127	.131	.128	.125	.121	.115
Aug	29.093	.092	.093	.094	.097	.102	.110	.117	.120	.122	.121	.114	.105
Sept....	29.076	.077	.075	.076	.079	.084	.091	.099	.100	.101	.098	.093	.079
Oct.....	29.075	.077	.077	.076	.077	.080	.083	.087	.094	.097	.094	.091	.079
Nov	29.126	.125	.126	.128	.126	.128	.129	.133	.138	.141	.144	.141	.126
Dec	29.093	.089	.091	.096	.091	.088	.089	.094	.097	.104	.112	.111	.096
Year....	29.094	.093	.093	.094	.095	.098	.103	.108	.111	.113	.113	.110	.099

SALT LAKE CITY, UTAH.

[λ = 40° 46′ N.; φ = 111° 54′ W.]

Jan	25.730	.729	.724	.723	.727	.723	.717	.716	.719	.725	.733	.743	.746
Feb	25.665	.667	.665	.664	.662	.659	.658	.659	.661	.668	.677	.684	.686
Mar	25.600	.600	.599	.599	.594	.591	.593	.597	.604	.611	.616	.619	.617
Apr	25.621	.621	.621	.617	.617	.617	.619	.625	.634	.642	.645	.648	.645
May	25.592	.593	.592	.591	.592	.595	.599	.607	.616	.621	.622	.623	.619
June ...	25.594	.596	.596	.597	.600	.604	.611	.620	.628	.635	.638	.636	.632
July	25.648	.651	.653	.656	.660	.665	.673	.684	.694	.701	.704	.703	.699
Aug	25.655	.660	.662	.663	.666	.670	.676	.686	.698	.706	.709	.710	.704
Sept....	25.639	.640	.643	.645	.645	.648	.652	.659	.668	.674	.679	.683	.677
Oct.....	25.719	.719	.720	.723	.722	.723	.729	.734	.740	.749	.756	.758	.753
Nov	25.749	.751	.748	.748	.748	.745	.746	.747	.750	.757	.767	.771	.769
Dec	25.735	.736	.731	.729	.733	.731	.727	.729	.734	.740	.750	.761	.763
Year....	25.662	.664	.663	.663	.664	.664	.667	.672	.679	.686	.691	.695	.692

SAN DIEGO, CAL.

[λ = 32° 43′ N.; φ = 117° 10′ W.]

Jan	30.021	.020	.015	.012	.011	.007	.001	.999	.006	.015	.028	.040	.049
Feb	30.014	.014	.012	.008	.001	.994	.989	.990	.997	.006	.019	.027	.032
Mar	29.982	.980	.978	.974	.965	.957	.955	.958	.967	.978	.989	.995	.000
Apr	29.983	.981	.976	.967	.959	.954	.953	.955	.969	.979	.985	.990	.993
May	29.922	.918	.914	.905	.897	.893	.892	.897	.908	.916	.923	.925	.926
June ...	29.877	.874	.868	.861	.853	.849	.851	.856	.866	.876	.884	.885	.886
July	29.884	.883	.880	.874	.868	.866	.867	.872	.881	.892	.899	.900	.900
Aug	29.871	.869	.865	.859	.851	.848	.846	.849	.858	.867	.876	.881	.881
Sept....	29.862	.861	.858	.854	.849	.846	.846	.848	.861	.871	.879	.883	.880
Oct.....	29.921	.919	.917	.915	.906	.903	.904	.910	.916	.929	.939	.943	.940
Nov	29.995	.995	.991	.989	.984	.979	.977	.977	.986	.997	.009	.016	.018
Dec	30.057	.056	.051	.048	.047	.044	.039	.039	.047	.058	.070	.081	.087
Year....	29.949	.948	.944	.939	.933	.928	.927	.929	.938	.949	.958	.964	.966

SAN FRANCISCO, CAL.

[λ = 37° 48′ N.; φ = 122° 26′ W.]

Jan	29.981	.984	.981	.979	.979	.979	.972	.969	.970	.977	.986	.997	.009
Feb	29.945	.949	.950	.949	.949	.946	.943	.944	.948	.954	.965	.973	.980
Mar	29.916	.918	.919	.920	.917	.909	.906	.910	.915	.924	.933	.942	.945
Apr	29.961	.961	.962	.958	.952	.948	.945	.947	.958	.972	.977	.982	.985
May	29.856	.853	.851	.846	.841	.838	.836	.838	.849	.859	.867	.869	.871
June ...	29.837	.836	.833	.829	.825	.821	.824	.830	.838	.848	.855	.857	.858
July	29.824	.824	.823	.819	.815	.814	.816	.822	.830	.840	.849	.852	.854
Aug	29.801	.802	.801	.799	.795	.793	.793	.797	.808	.819	.827	.831	.836
Sept....	29.820	.822	.819	.820	.816	.813	.813	.816	.826	.838	.848	.857	.859
Oct.....	29.888	.889	.890	.892	.888	.883	.884	.887	.892	.901	.913	.920	.922
Nov	29.962	.964	.963	.960	.959	.955	.953	.954	.958	.966	.978	.987	.993
Dec	30.021	.023	.019	.013	.014	.013	.007	.003	.007	.014	.024	.036	.049
Year....	29.901	.902	.901	.899	.896	.893	.891	.893	.900	.909	.918	.925	.930

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

ST. PAUL, MINN.

[H = 850 feet; gravity correction, 0; local time, 1h 12m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891–95.
.122	.113	.115	.121	.126	.130	.134	.137	.139	.141	.142	.136	.....	.....	Jan.
.153	.143	.139	.140	.145	.151	.156	.158	.162	.165	.168	.161	.....	.....	Feb.
.102	.088	.080	.076	.076	.080	.086	.092	.098	.102	.103	.104	.....	.....	Mar.
.052	.041	.033	.026	.024	.022	.026	.034	.045	.049	.050	.049	.....	.....	Apr.
.047	.038	.030	.024	.020	.019	.024	.034	.045	.052	.054	.050	.....	.....	May.
.038	.031	.022	.015	.009	.002	.006	.015	.028	.037	.041	.038	.....	.....	June.
.107	.098	.089	.083	.075	.070	.071	.079	.091	.095	.099	.102	.....	.....	July.
.095	.085	.075	.068	.064	.063	.067	.077	.087	.089	.093	.094	.....	.....	Aug.
.065	.052	.043	.036	.036	.039	.046	.056	.063	.068	.070	.071	.....	.....	Sept.
.065	.054	.050	.048	.051	.056	.063	.066	.072	.074	.074	.073	.....	.....	Oct.
.112	.102	.101	.104	.109	.115	.120	.123	.126	.128	.128	.124	.....	.....	Nov.
.081	.073	.075	.080	.085	.088	.091	.093	.092	.091	.090	.091	.....	.....	Dec.
.087	.076	.071	.068	.068	.070	.074	.080	.087	.091	.093	.091	.....	.....	Year.

SALT LAKE CITY, UTAH.

[H = 4,345 ft.; gravity correction, —, .01; local time, 2h 27m slow.]

.733	.713	.703	.700	.701	.703	.706	.710	.714	.717	.718	.720	.....	.....	Jan.
.681	.666	.652	.644	.643	.645	.650	.655	.658	.663	.667	.662	.....	.....	Feb.
.612	.603	.591	.585	.580	.578	.580	.585	.590	.597	.601	.598	.....	.....	Mar.
.638	.629	.622	.612	.605	.599	.596	.596	.603	.610	.616	.621	.....	.....	Apr.
.611	.602	.593	.583	.573	.567	.563	.565	.570	.581	.589	.594	.....	.....	May.
.626	.616	.607	.595	.586	.575	.570	.573	.577	.586	.595	.604	.....	.....	June.
.690	.677	.665	.653	.640	.630	.625	.624	.629	.639	.646	.663	.....	.....	July.
.693	.680	.664	.647	.636	.628	.623	.624	.634	.644	.650	.666	.....	.....	Aug.
.665	.650	.634	.622	.614	.609	.607	.608	.617	.624	.629	.643	.....	.....	Sept.
.742	.724	.712	.705	.700	.696	.699	.705	.711	.716	.720	.724	.....	.....	Oct.
.756	.739	.727	.723	.722	.723	.729	.733	.737	.741	.747	.745	.....	.....	Nov.
.748	.731	.719	.716	.718	.718	.723	.727	.732	.734	.738	.733	.....	.....	Dec.
.683	.669	.657	.649	.643	.639	.639	.642	.648	.654	.660	.664	.....	.....	Year.

SAN DIEGO, CAL.

[H = 69 ft.; gravity correction, —.03; local time, 2h 49m slow.]

.037	.012	.991	.980	.978	.979	.982	.989	.998	.005	.010	.008	.....	.....	Jan.
.027	.012	.992	.981	.977	.977	.981	.988	.997	.005	.010	.002	.....	.....	Feb.
.996	.987	.973	.961	.954	.951	.951	.957	.964	.974	.981	.972	.....	.....	Mar.
.989	.979	.972	.961	.953	.949	.949	.952	.960	.972	.979	.969	.....	.....	Apr.
.925	.921	.916	.909	.900	.895	.892	.895	.903	.912	.919	.909	.....	.....	May.
.885	.882	.875	.869	.863	.857	.853	.854	.858	.864	.872	.867	.....	.....	June.
.897	.893	.886	.877	.868	.859	.856	.857	.863	.871	.880	.878	.....	.....	July.
.878	.870	.862	.853	.844	.840	.838	.841	.849	.858	.866	.859	.....	.....	Aug.
.873	.863	.850	.840	.833	.829	.830	.833	.843	.854	.859	.854	.....	.....	Sept.
.931	.915	.900	.892	.890	.888	.892	.901	.910	.919	.925	.913	.....	.....	Oct.
.005	.982	.965	.957	.956	.957	.960	.972	.980	.989	.994	.985	.....	.....	Nov.
.075	.049	.030	.020	.020	.020	.024	.034	.043	.051	.057	.048	.....	.....	Dec.
.960	.947	.934	.925	.920	.917	.917	.923	.931	.940	.946	.939	.....	.....	Year.

SAN FRANCISCO, CAL.

[H = 153 ft.; gravity correction, —.02; local time, 3h 10m slow.]

.005	.984	.963	.951	.947	.946	.945	.949	.955	.960	.966	.972	.....	.....	Jan.
.982	.971	.953	.938	.930	.926	.924	.927	.932	.936	.943	.948	.....	.....	Feb.
.944	.938	.925	.914	.906	.900	.896	.896	.899	.907	.915	.917	.....	.....	Mar.
.983	.975	.967	.958	.948	.940	.934	.932	.934	.944	.953	.957	.....	.....	Apr.
.871	.867	.861	.854	.844	.837	.832	.829	.832	.839	.848	.849	.....	.....	May.
.857	.854	.848	.840	.832	.823	.817	.816	.819	.824	.833	.836	.....	.....	June.
.853	.849	.841	.831	.820	.809	.799	.799	.803	.809	.820	.826	.....	.....	July.
.832	.825	.817	.805	.792	.779	.774	.772	.777	.789	.798	.803	.....	.....	Aug.
.855	.844	.834	.821	.809	.799	.793	.793	.798	.810	.817	.823	.....	.....	Sept.
.918	.905	.889	.877	.870	.863	.860	.866	.874	.881	.888	.889	.....	.....	Oct.
.988	.971	.955	.943	.937	.933	.930	.938	.945	.951	.959	.958	.....	.....	Nov.
.044	.026	.009	.001	.998	.999	.999	.004	.009	.016	.020	.015	.....	.....	Dec.
.928	.917	.905	.894	.886	.880	.875	.877	.881	.889	.897	.899	.....	.....	Year.

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

SANTA FE, N. MEX.

[λ=35° 41′ N.; φ=105° 57′ W.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	23.227	.226	.222	.222	.222	.219	.214	.213	.216	.224	.233	.243	.241
Feb	23.199	.199	.197	.194	.190	.186	.186	.187	.191	.199	.206	.215	.216
Mar	23.187	.187	.187	.185	.180	.177	.178	.182	.188	.194	.200	.203	.202
Apr	23.224	.225	.225	.224	.222	.222	.224	.230	.237	.242	.244	.248	.245
May	23.266	.267	.266	.265	.264	.264	.269	.278	.284	.289	.291	.290	.285
June ...	23.306	.308	.309	.310	.310	.311	.317	.327	.334	.340	.342	.342	.338
July	23.419	.421	.420	.419	.417	.418	.423	.431	.436	.443	.443	.442	.438
Aug	23.418	.418	.418	.417	.417	.417	.420	.426	.432	.436	.439	.439	.432
Sept	23.379	.379	.380	.380	.380	.381	.384	.390	.399	.405	.400	.413	.406
Oct.	23.354	.354	.355	.354	.351	.351	.354	.360	.365	.374	.379	.382	.379
Nov	23.305	.306	.304	.302	.301	.299	.298	.301	.305	.313	.319	.326	.323
Dec	23.261	.260	.254	.252	.250	.247	.242	.242	.246	.252	.263	.274	.273
Year ...	23.295	.296	.295	.294	.292	.291	.292	.297	.303	.309	.314	.318	.315

SAVANNAH, GA.

[λ=32° 5′ N.; φ=81° 5′ W.]

Jan	30.031	.032	.032	.031	.029	.034	.046	.058	.071	.080	.075	.054	.024
Feb	30.054	.051	.048	.046	.050	.059	.072	.082	.090	.093	.089	.074	.047
Mar	29.999	.996	.990	.990	.997	.009	.021	.033	.040	.043	.039	.027	.007
Apr	29.983	.978	.975	.976	.983	.996	.012	.021	.025	.027	.021	.008	.991
May	29.933	.927	.925	.927	.934	.947	.959	.968	.971	.970	.963	.953	.938
June ...	29.942	.937	.935	.937	.945	.955	.966	.975	.977	.977	.975	.966	.952
July	29.981	.974	.969	.970	.977	.987	.997	.007	.010	.011	.007	.998	.983
Aug	29.918	.913	.910	.911	.917	.929	.940	.949	.956	.959	.956	.945	.932
Sept	29.970	.963	.958	.959	.965	.976	.989	.997	.006	.009	.004	.994	.978
Oct.	29.960	.956	.952	.953	.959	.968	.980	.992	.999	.000	.995	.981	.960
Nov	30.060	.059	.057	.057	.060	.069	.083	.096	.104	.106	.098	.079	.053
Dec	30.092	.091	.091	.089	.086	.094	.106	.116	.127	.135	.127	.105	.078
Year ...	29.994	.990	.987	.987	.992	.002	.014	.024	.031	.034	.029	.015	.995

WASHINGTON, D. C.

[λ=38° 54′ N.; φ=77° 3′ W.]

Jan	29.960	.963	.965	.961	.958	.963	.973	.984	.996	.003	.995	.973	.952
Feb	30.006	.004	.000	.997	.001	.006	.015	.026	.035	.038	.038	.026	.000
Mar	29.960	.959	.953	.954	.960	.970	.980	.989	.993	.993	.987	.974	.957
Apr	29.939	.933	.930	.932	.936	.948	.959	.962	.965	.966	.961	.948	.936
May	29.833	.878	.877	.879	.886	.898	.906	.911	.913	.914	.910	.899	.888
June ...	29.900	.895	.893	.896	.904	.913	.920	.927	.927	.929	.928	.920	.910
July	29.911	.907	.905	.907	.914	.921	.929	.936	.937	.938	.937	.931	.920
Aug	29.889	.884	.882	.882	.887	.897	.905	.912	.916	.921	.919	.911	.904
Sept	29.998	.993	.992	.994	.999	.007	.017	.024	.030	.033	.026	.019	.005
Oct.	29.959	.955	.951	.953	.959	.966	.976	.987	.992	.991	.985	.969	.948
Nov	30.027	.026	.027	.025	.029	.034	.044	.054	.060	.063	.057	.038	.018
Dec ...	30.039	.040	.044	.039	.036	.042	.052	.062	.072	.080	.073	.049	.029
Year....	29.956	.953	.952	.952	.956	.964	.973	.981	.986	.989	.985	.971	.956

AVERAGE PRESSURE, IN INCHES AND THOUSANDTHS, FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—CONT'D.

SANTA FE, N. MEX.

[H = 6,998 ft.; gravity correction, —.02; local time, 2h 4m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891–95.
.226	.207	.197	.193	.195	.198	.205	.210	.214	.219	.222	.217	.....	.....	Jan.
.208	.193	.180	.172	.172	.174	.181	.187	.192	.198	.202	.193	.....	.....	Feb.
.194	.176	.163	.151	.146	.144	.149	.155	.165	.176	.182	.177	.....	.....	Mar.
.236	.223	.213	.198	.189	.186	.185	.191	.203	.215	.223	.220	.....	.....	Apr.
.275	.263	.253	.240	.231	.224	.221	.228	.240	.252	.263	.261	.....	.....	May.
.330	.318	.308	.294	.283	.276	.272	.274	.281	.296	.307	.310	.....	.....	June.
.429	.417	.406	.394	.385	.378	.376	.381	.391	.405	.417	.415	.....	.....	July.
.423	.411	.400	.387	.378	.374	.371	.376	.390	.405	.414	.411	.....	.....	Aug.
.394	.381	.367	.354	.346	.341	.339	.344	.355	.364	.369	.377	.....	.....	Sept.
.368	.352	.339	.331	.327	.327	.330	.336	.343	.349	.354	.353	.....	.....	Oct.
.309	.291	.280	.275	.274	.277	.284	.290	.295	.300	.304	.299	.....	.....	Nov.
.259	.241	.231	.229	.232	.235	.240	.246	.252	.256	.259	.250	.....	.....	Dec.
.304	.289	.278	.268	.263	.261	.263	.268	.277	.286	.293	.290	.....	.....	Year.

SAVANNAH, GA.

[H = 98 ft.; gravity correction, —.03; local time, 24m slow.]

.005	.997	.999	.005	.015	.025	.034	.040	.043	.042	.037	.035	.....	.....	Jan.
.025	.013	.012	.017	.026	.035	.044	.050	.054	.055	.054	.052	.....	.....	Feb.
.987	.971	.962	.961	.966	.976	.987	.997	.002	.002	.000	.000	.....	.....	Mar.
.976	.958	.950	.947	.949	.958	.970	.980	.986	.988	.988	.985	.....	.....	Apr.
.924	.907	.900	.897	.899	.909	.919	.928	.936	.938	.937	.934	.....	.....	May.
.936	.923	.915	.911	.914	.922	.931	.940	.948	.951	.949	.945	.....	.....	June.
.968	.954	.949	.947	.951	.959	.966	.976	.984	.986	.984	.979	.....	.....	July.
.914	.897	.890	.890	.893	.904	.915	.927	.931	.930	.926	.923	.....	.....	Aug.
.961	.949	.943	.943	.947	.955	.967	.974	.978	.978	.974	.972	.....	.....	Sept.
.942	.935	.931	.933	.942	.952	.963	.969	.973	.971	.967	.964	.....	.....	Oct.
.036	.028	.027	.031	.041	.051	.060	.066	.068	.068	.066	.063	.....	.....	Nov.
.062	.055	.056	.061	.069	.079	.089	.094	.099	.098	.095	.091	.....	.....	Dec.
.978	.966	.961	.962	.968	.977	.987	.995	.000	.001	.998	.995	.....	.....	Year.

WASHINGTON, D. C.

[H = 112 ft.; gravity correction, —.02; local time, 8m slow.]

.941	.940	.944	.950	.957	.967	.970	.972	.973	.969	.962	.966	.....	.....	Jan.
.981	.976	.975	.982	.991	.002	.006	.009	.011	.007	.005	.006	.....	.....	Feb.
.936	.926	.919	.923	.930	.939	.950	.957	.961	.962	.960	.958	.....	.....	Mar.
.921	.909	.902	.903	.904	.912	.925	.936	.939	.941	.945	.936	.....	.....	Apr.
.876	.862	.854	.852	.851	.858	.866	.880	.886	.887	.885	.883	.....	.....	May.
.898	.887	.878	.872	.873	.878	.884	.894	.902	.904	.902	.901	.....	.....	June.
.908	.897	.888	.884	.882	.887	.893	.905	.910	.911	.912	.911	.....	.....	July.
.890	.877	.869	.866	.866	.870	.879	.890	.894	.896	.896	.892	.....	.....	Aug.
.988	.977	.969	.967	.971	.978	.988	.996	.000	.000	.000	.999	.....	.....	Sept.
.934	.927	.922	.923	.931	.940	.947	.954	.960	.958	.956	.956	.....	.....	Oct.
.006	.003	.006	.010	.019	.028	.035	.040	.042	.040	.038	.032	.....	.....	Nov.
.017	.013	.015	.019	.027	.037	.043	.046	.048	.048	.044	.042	.....	.....	Dec.
.941	.933	.928	.929	.934	.941	.949	.957	.960	.960	.959	.957	.....	.....	Year.

Blank page retained for pagination

Blank page retained for pagination

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME).

BISMARCK, N. DAK.

[λ=46° 47′ N.; φ=100° 38′ W.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	9.0	8.3	7.5	6.9	6.4	5.9	5.7	5.5	5.0	5.5	7.1	9.4	11.8
Feb	4.9	4.4	3.8	3.4	3.0	2.5	2.0	1.4	1.4	2.3	4.7	7.1	9.5
Mar. * ..	20.2	19.7	19.1	18.5	17.8	17.4	16.9	16.5	17.2	19.5	22.7	25.6	27.8
Apr. * ..	38.2	37.4	36.8	35.9	35.2	34.4	34.1	34.5	36.4	39.1	42.2	44.5	46.5
May	48.0	46.8	45.9	45.0	44.2	43.4	43.0	45.5	48.6	51.9	54.5	56.9	57.9
June ...	58.1	57.3	56.4	55.5	54.6	54.0	54.7	57.4	59.8	62.4	64.7	66.9	68.4
July....	64.0	62.6	61.5	60.3	59.4	58.4	58.6	61.4	64.6	68.4	71.9	74.4	76.4
Aug	63.2	61.9	60.6	59.2	58.0	57.0	56.1	57.6	61.3	65.8	70.2	73.8	76.4
Sept....	54.7	53.4	52.2	51.2	50.1	49.1	48.4	48.7	51.6	56.1	60.4	64.3	67.0
Oct.....	40.3	39.2	38.4	37.6	36.8	36.1	35.3	35.1	36.0	39.5	44.0	47.9	51.1
Nov	22.4	21.9	21.6	21.1	20.7	20.6	20.3	20.0	19.8	20.8	22.9	25.6	28.0
Dec	13.7	13.6	13.2	12.8	12.4	11.9	11.7	11.9	11.5	12.1	14.1	16.5	18.9
Year....	36.4	35.5	34.8	34.0	33.2	32.6	32.2	33.0	34.4	37.0	40.0	42.7	45.0

* Means for four years.

BOSTON, MASS.

[λ=42° 21′ N.; φ=71° 4′ W.]

Jan	26.0	25.6	25.5	25.2	24.9	24.9	24.9	25.5	26.2	27.5	29.1	30.6	31.8
Feb	25.9	25.6	25.3	24.9	24.6	24.4	24.3	24.8	25.9	27.4	28.8	30.4	31.4
Mar	32.9	32.4	32.0	31.7	31.4	31.3	31.7	33.0	34.4	35.7	37.0	38.3	39.1
Apr	42.9	42.4	42.0	41.5	41.0	41.3	42.8	44.9	46.8	48.1	49.4	50.2	50.9
May	52.3	51.9	51.3	50.9	50.7	51.2	52.7	55.2	56.8	58.3	59.5	60.3	60.8
June ...	62.4	62.1	61.7	61.2	60.9	61.6	63.2	65.3	67.0	68.3	69.5	70.4	71.0
July....	66.3	65.7	65.3	64.9	64.6	65.4	67.6	70.3	72.4	74.1	75.1	75.4	75.6
Aug	65.9	65.4	65.0	64.6	64.2	64.4	65.7	67.9	69.8	71.3	72.4	73.2	73.9
Sept....	60.2	59.7	59.2	58.7	58.2	58.0	59.1	61.4	63.4	65.3	67.1	68.4	69.4
Oct.....	49.2	48.8	48.3	48.1	47.8	47.6	48.2	50.0	51.8	53.5	55.3	56.5	57.2
Nov	39.6	39.2	39.0	38.6	38.5	38.3	38.3	39.3	40.4	42.0	43.9	45.3	45.9
Dec	31.7	31.6	31.4	31.1	30.9	30.7	30.8	31.2	31.9	33.4	35.0	36.4	37.4
Year....	46.3	45.9	45.5	45.1	44.8	44.9	45.8	47.4	48.9	50.4	51.8	53.0	53.7

BUFFALO, N. Y.

[λ=42° 53′ N.; φ=78° 53′ W.]

Jan	24.2	24.0	23.9	23.8	23.7	23.5	23.4	23.5	23.9	24.2	25.0	25.9	26.4
Feb	23.4	23.3	23.1	22.8	22.7	22.6	22.5	22.5	23.0	23.8	24.7	25.6	26.2
Mar	30.3	30.0	29.7	29.4	29.2	29.1	28.9	29.6	30.4	31.4	32.7	33.8	34.6
Apr	41.6	41.2	40.9	40.4	40.0	39.9	40.4	41.8	42.9	44.1	45.4	46.3	46.8
May....	51.4	50.9	50.6	50.2	49.7	50.0	51.2	52.8	53.8	54.7	55.8	56.8	57.5
June ...	64.2	63.8	63.2	62.8	62.5	62.9	64.2	65.8	66.7	67.9	68.9	70.0	70.6
July....	66.2	65.7	65.2	64.8	64.4	64.9	66.2	68.1	69.4	70.4	71.4	72.2	72.9
Aug	65.7	65.0	64.5	64.1	63.6	63.6	64.8	66.9	68.9	70.5	71.8	72.6	73.4
Sept....	61.7	61.2	60.7	60.2	59.8	59.7	60.3	62.1	64.1	65.5	66.7	67.6	68.7
Oct.....	49.6	49.1	48.7	48.5	48.1	47.8	47.9	49.0	50.9	52.5	53.9	55.0	55.6
Nov. * ..	38.3	38.0	37.7	37.4	37.2	37.0	36.8	37.2	37.7	38.8	39.7	40.4	41.0
Dec	31.7	31.5	31.4	31.2	31.2	31.2	31.1	31.2	31.4	32.0	32.9	33.5	33.9
Year....	45.7	45.3	45.0	44.6	44.3	44.4	44.8	45.9	46.9	48.0	49.1	50.0	50.6

* Means for four years.

CHICAGO, ILL.

[λ=41° 53′ N.; φ=87° 37′ W.]

Jan	21.2	21.0	20.7	20.5	20.2	19.9	19.6	19.5	19.5	20.0	20.9	22.1	23.1
Feb	23.7	23.1	22.6	22.2	21.7	21.3	21.1	21.0	21.4	22.3	23.5	24.6	25.6
Mar	32.5	32.2	31.8	31.4	31.0	30.6	30.4	30.6	31.3	32.4	33.2	34.1	34.9
Apr	44.7	44.4	43.9	43.6	43.0	42.7	43.0	43.6	44.4	45.4	46.1	46.9	47.4
May....	53.5	52.9	52.4	51.9	51.5	51.1	51.3	52.8	53.7	54.9	55.5	56.2	56.6
June ...	65.6	65.1	64.7	64.1	63.6	63.3	63.8	65.6	67.0	68.4	69.2	69.9	70.4
July....	69.1	68.4	67.9	67.3	66.7	66.5	67.2	68.9	70.4	71.9	72.6	73.2	73.2
Aug	69.3	68.7	68.0	67.2	66.5	66.2	66.6	68.0	70.0	71.3	72.1	72.8	73.3
Sept....	64.8	64.2	63.3	62.6	62.0	61.5	61.1	61.9	63.8	65.9	67.5	68.7	69.6
Oct.....	50.2	49.6	48.9	48.3	47.8	47.2	46.8	47.2	48.5	50.4	52.3	53.7	54.6
Nov	34.6	34.0	33.6	33.2	33.0	32.8	32.6	32.7	33.2	34.1	35.3	36.6	37.4
Dec	28.8	28.3	28.2	28.1	27.8	27.6	27.4	27.5	27.6	28.2	29.3	30.4	31.2
Year ...	46.5	46.0	45.5	45.0	44.6	44.2	44.2	44.9	45.9	47.1	48.1	49.1	49.8

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME).

BISMARCK, N. DAK.

[h_t = 16 ft.; local time, 1h 42m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891-95.
13.5	14.8	15.8	15.8	14.8	12.9	11.6	10.4	9.7	9.0	8.3	9.6	16.6	—5.9	Jan.
11.6	13.3	14.6	14.9	14.5	12.7	10.5	9.0	8.0	7.2	6.4	7.2	16.2	—7.0	Feb.
29.7	31.2	32.0	32.2	32.0	30.7	28.1	25.7	24.1	22.7	21.7	23.7	32.9	12.2	Mar.*
48.1	49.3	50.0	50.5	50.3	49.3	47.6	44.6	42.5	41.1	39.6	42.0	53.6	32.7	Apr.*
59.7	61.5	61.5	61.5	61.6	60.8	59.7	56.7	53.7	51.6	49.7	52.9	64.1	40.8	May.
69.7	70.7	71.4	71.5	71.2	70.6	69.3	66.7	63.5	61.5	59.8	63.2	73.5	51.9	June.
77.7	78.7	79.6	79.6	79.3	78.4	76.8	73.8	70.2	67.5	65.6	69.5	81.9	56.3	July.
78.2	79.7	80.7	80.7	79.9	78.8	76.3	72.1	68.9	66.5	64.6	68.6	82.9	54.1	Aug.
69.0	70.8	71.9	72.2	71.6	69.4	65.7	62.0	59.5	57.5	55.6	59.7	73.5	46.1	Sept.
53.3	54.8	55.6	55.6	54.5	51.1	48.1	45.6	43.6	42.2	40.9	44.3	57.4	32.8	Oct.
29.9	31.0	31.5	31.2	29.5	27.4	25.8	24.3	23.4	22.8	22.2	24.4	34.8	15.2	Nov.
20.7	21.9	22.4	22.0	20.3	18.7	17.4	16.2	15.6	14.9	14.4	15.8	25.1	6.6	Dec.
46.8	48.1	48.9	49.0	48.3	46.7	44.7	42.3	40.2	38.7	37.4	40.1	51.0	28.0	Year.

* Mean for four years.

BOSTON, MASS.

[h_t = 115 ft.; local time, 16m fast.]

32.2	32.1	31.7	31.0	30.2	29.3	28.6	27.9	27.4	27.0	26.6	28.0	34.9	20.7	Jan.
32.1	32.3	31.9	31.2	30.2	29.4	28.8	28.1	27.6	27.1	26.7	27.9	34.8	20.5	Feb.
39.8	40.0	39.5	38.6	37.7	36.7	35.9	35.1	34.4	33.9	33.4	35.3	42.2	28.8	Mar.
51.1	50.9	50.8	50.5	49.7	48.0	47.0	46.0	45.2	44.5	44.0	46.3	54.8	38.7	Apr.
61.2	61.1	60.7	60.8	60.2	58.6	57.2	55.8	55.0	54.2	53.4	56.3	65.5	48.8	May.
71.3	71.5	71.3	70.9	70.1	68.5	67.0	65.9	65.0	64.0	63.3	66.1	74.9	59.0	June.
75.8	75.6	75.4	74.9	74.2	72.1	70.7	69.6	68.6	67.7	67.1	70.6	79.5	63.1	July.
74.1	73.8	73.4	73.0	72.3	70.7	69.7	68.8	68.0	67.2	66.6	69.2	77.1	62.4	Aug.
69.7	69.2	68.6	67.7	66.4	64.8	63.6	62.7	61.8	61.1	60.5	63.5	71.7	56.2	Sept.
57.5	57.4	56.5	55.6	54.3	53.1	52.3	51.6	50.9	50.3	49.7	52.2	59.8	45.3	Oct.
46.1	46.0	45.3	44.5	43.5	42.5	41.8	41.2	40.6	40.0	39.5	41.6	48.3	35.0	Nov.
38.1	37.8	37.3	36.5	35.6	34.7	34.0	33.3	32.9	32.2	31.8	33.7	40.6	26.8	Dec.
54.1	54.0	53.5	52.9	52.0	50.7	49.7	48.8	48.1	47.4	46.9	49.2	57.0	42.1	Year.

BUFFALO, N. Y.

[h_t = 103 ft.; local time, 15m slow.]

26.6	26.8	26.8	26.5	26.3	26.0	25.6	25.2	25.0	24.5	24.3	25.0	29.7	18.7	Jan.
26.6	27.0	27.1	26.9	26.4	25.8	25.3	24.8	24.3	23.9	23.5	24.5	30.2	17.5	Feb.
35.0	35.3	35.3	35.0	34.3	33.4	32.7	32.1	31.7	31.2	31.0	31.9	37.9	24.3	Mar.
47.2	47.3	47.1	46.7	46.1	44.9	44.0	43.4	43.0	42.4	42.3	43.6	50.8	35.5	Apr.
57.6	57.9	58.1	57.4	56.7	55.9	54.9	54.1	53.6	53.0	52.5	54.0	61.4	45.6	May.
70.8	71.3	71.3	71.1	70.3	69.4	67.8	67.1	66.4	65.7	65.0	67.1	74.3	59.2	June.
73.5	73.7	73.9	73.5	72.6	71.7	70.5	69.7	69.0	67.8	67.0	69.4	76.2	61.4	July.
73.8	74.4	74.3	73.8	72.8	71.6	70.2	69.1	68.1	67.1	66.5	69.1	76.4	60.7	Aug.
69.2	69.5	69.4	68.9	67.4	65.9	64.7	63.7	63.0	62.4	61.9	64.3	71.2	56.0	Sept.
56.2	56.4	56.2	55.4	54.3	53.1	52.2	51.5	51.0	50.5	50.1	51.8	57.6	43.8	Oct.
41.3	41.2	41.0	40.4	39.8	39.3	38.9	38.6	38.3	38.1	38.0	38.8	41.1	32.8	Nov.*
34.1	34.3	34.0	33.7	33.4	33.0	32.8	32.4	32.2	31.9	31.7	32.4	37.0	26.0	Dec.
51.0	51.3	51.2	50.8	50.0	49.2	48.3	47.6	47.1	46.5	46.2	47.7	53.9	40.1	Year.

* Mean for four years.

CHICAGO, ILL.

[h_t = 241 ft.; local time, 50m slow.]

23.7	24.2	24.6	24.6	24.2	23.6	23.1	22.7	22.2	21.9	21.5	21.9	27.6	15.1	Jan.
26.3	27.1	27.6	27.8	27.5	26.9	26.5	25.9	25.5	24.9	24.4	24.4	30.5	17.6	Feb.
35.6	36.1	36.6	36.9	36.8	36.2	35.7	35.1	34.5	34.0	33.4	33.6	40.0	27.1	Mar.
47.9	48.3	48.6	48.4	48.1	47.3	46.8	46.2	45.9	45.6	45.3	45.7	52.5	38.8	Apr.
57.2	57.7	57.7	57.6	57.3	56.6	55.9	55.2	54.9	54.5	54.0	54.7	62.2	47.2	May.
71.1	71.3	71.2	70.9	70.5	69.8	69.0	67.9	67.4	66.6	66.2	67.6	75.4	60.4	June.
73.7	74.1	74.5	74.6	74.6	73.9	73.1	71.9	71.3	70.6	70.0	71.1	78.0	64.3	July.
73.6	73.9	74.2	74.3	73.9	73.4	72.4	71.6	71.0	70.4	69.8	70.8	76.8	64.4	Aug.
70.3	70.7	71.2	71.4	70.9	69.8	68.5	67.5	66.8	65.9	65.3	66.5	73.6	59.1	Sept.
55.4	55.9	56.4	56.2	55.4	54.4	53.5	52.7	52.0	51.2	50.5	51.6	58.8	44.0	Oct.
38.1	38.4	38.5	38.2	37.8	37.1	36.7	36.1	35.6	35.1	34.7	35.4	41.0	29.1	Nov.
31.9	32.3	32.4	32.1	31.6	31.0	30.7	30.2	29.8	29.4	29.1	29.6	35.1	23.4	Dec.
50.4	50.8	51.1	51.1	50.7	50.0	49.3	48.6	48.1	47.5	47.0	47.7	54.3	40.9	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

CINCINNATI, OHIO.

[λ=39° 6′ N.; φ=84° 30′ W.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	28.8	28.3	27.9	27.5	27.0	26.6	26.4	26.4	26.9	27.7	28.9	30.2	31.5
Feb	32.9	32.4	31.8	31.4	30.9	30.5	30.3	30.1	30.5	31.4	32.8	34.2	35.7
Mar	40.0	39.2	38.6	38.0	37.4	36.9	36.5	36.7	37.7	39.3	40.9	42.7	44.2
Apr	52.1	51.1	50.3	49.7	49.1	48.6	48.5	49.4	51.4	53.5	55.5	57.1	58.4
May	59.1	58.3	57.2	56.5	55.8	55.4	55.7	57.7	59.8	61.9	63.6	65.1	66.3
June	70.7	70.1	69.1	68.3	67.6	67.2	68.2	70.4	72.7	74.9	77.0	78.8	79.7
July	72.2	71.4	70.2	69.4	68.6	68.1	68.7	70.8	73.5	76.0	78.0	79.7	81.0
Aug	72.0	71.0	70.0	69.2	68.3	67.5	67.6	69.3	72.1	74.9	77.4	79.3	80.7
Sept	66.9	66.1	65.1	64.3	63.5	62.8	62.5	63.5	66.2	69.5	72.5	74.7	76.4
Oct	52.4	51.4	50.5	49.7	48.8	48.1	47.6	48.0	50.3	53.3	56.4	58.9	60.9
Nov	41.0	40.4	39.7	39.2	38.6	38.1	37.7	37.6	38.2	39.7	41.9	43.6	44.9
Dec	36.5	36.1	35.5	35.1	34.5	33.8	33.5	33.4	33.8	35.0	36.5	38.1	39.4
Year	52.0	51.3	50.5	49.9	49.2	48.6	48.6	49.4	51.1	53.1	55.1	56.9	58.3

CLEVELAND, OHIO.

[λ=41° 30′ N.; φ=81° 42′ W.]

Jan	24.9	24.5	24.3	24.1	23.9	23.6	23.4	23.6	23.8	24.6	25.6	26.5	27.2
Feb	26.7	26.4	26.0	25.7	25.3	24.9	24.6	24.6	25.1	26.1	27.2	28.3	29.0
Mar	32.7	32.3	31.9	31.5	31.3	31.1	30.8	31.4	32.2	33.6	34.8	36.0	36.6
Apr	45.2	44.5	43.9	43.4	42.9	42.6	43.1	44.8	46.2	47.5	48.6	49.2	49.8
May	53.4	52.7	52.1	51.6	51.2	51.2	52.2	54.7	56.6	58.2	59.0	59.6	59.7
June	66.0	65.3	64.7	64.1	63.5	63.3	64.8	67.9	69.7	71.0	72.0	72.8	73.1
July	67.2	66.5	65.7	65.0	64.4	64.3	65.7	69.2	71.6	73.3	74.5	75.0	75.4
Aug	66.2	65.4	64.7	64.1	63.5	63.2	64.3	67.3	70.2	72.6	73.7	74.3	74.7
Sept	62.5	62.0	61.4	60.8	60.4	59.8	59.9	62.1	65.1	67.8	69.3	70.3	71.1
Oct	49.4	49.0	48.4	47.7	47.3	46.9	46.7	48.0	49.9	52.7	54.7	56.0	56.8
Nov	38.1	37.7	37.5	37.1	36.8	36.6	36.4	36.6	37.0	38.3	39.8	41.3	41.9
Dec	32.3	32.1	31.9	31.6	31.4	31.1	31.1	31.0	31.2	32.1	33.3	34.9	35.6
Year	47.0	46.5	46.0	45.6	45.2	44.9	45.2	46.8	48.2	49.8	51.0	52.0	52.6

DETROIT, MICH.

[λ=42° 20′ N.; φ=83° 3′ W.]

Jan	22.1	21.9	21.6	21.3	21.0	20.7	20.6	20.6	20.8	21.7	23.1	24.2	25.2
Feb	23.6	23.2	22.9	22.6	22.3	21.9	21.6	21.5	22.0	23.0	24.4	25.6	26.6
Mar	30.4	29.8	29.4	29.1	28.7	28.5	28.4	29.2	30.3	31.6	33.0	34.3	35.6
Apr	42.7	42.1	41.5	41.0	40.6	40.2	40.6	42.4	44.3	46.5	48.4	49.8	51.3
May	52.1	51.4	50.9	50.5	50.1	50.0	50.8	53.1	54.9	56.9	58.5	59.9	61.0
June	62.8	64.1	63.5	63.0	62.5	62.7	64.2	67.0	69.2	71.3	72.9	74.2	75.3
July	66.7	66.0	65.3	64.6	63.9	63.7	65.0	67.9	70.4	72.7	74.6	76.2	77.3
Aug	65.9	65.2	64.8	64.1	63.4	63.1	63.9	66.2	68.7	71.1	73.3	74.8	75.9
Sept	61.4	60.8	60.4	59.7	59.1	58.5	58.7	60.4	63.1	65.6	67.7	69.4	70.9
Oct	47.8	47.3	46.9	46.3	45.8	45.3	45.0	45.9	47.7	50.1	52.3	53.9	55.1
Nov	36.0	35.7	35.4	35.1	34.6	34.3	34.1	34.1	34.6	36.0	37.1	38.2	39.0
Dec	29.5	29.3	29.1	28.9	28.7	28.5	28.4	28.3	28.7	29.6	30.8	31.7	32.5
Year	45.1	44.7	44.3	43.8	43.4	43.1	43.4	44.7	46.2	48.0	49.7	51.0	52.1

DODGE CITY, KANS.

[λ=37° 45′ N.; φ=100° 0′ W.]

Jan	25.2	24.4	23.7	23.2	22.6	22.1	21.4	21.0	21.0	22.5	26.4	30.4	33.5
Feb	25.1	24.3	23.9	23.2	22.6	22.2	21.9	21.2	21.4	23.4	26.9	30.1	33.0
Mar	35.5	34.8	33.8	32.9	31.9	30.9	30.2	29.3	30.9	35.0	39.3	42.6	45.7
Apr	49.2	48.2	47.0	46.0	45.0	44.2	43.5	45.2	49.1	53.5	57.5	60.5	63.2
May	56.2	55.1	53.9	53.3	52.4	51.7	51.5	54.3	57.4	60.5	63.6	66.2	68.4
June	65.4	64.7	63.7	62.8	62.0	61.4	61.3	64.8	68.1	71.3	74.6	77.1	79.6
July	70.2	69.5	68.6	67.7	66.9	66.3	64.1	68.6	71.8	75.0	78.6	81.6	84.2
Aug	69.0	68.1	67.0	66.3	65.3	64.5	63.9	65.5	69.2	73.4	77.4	80.7	83.0
Sept	64.4	63.5	62.7	61.8	60.8	60.1	59.4	59.5	62.7	67.2	71.7	72.9	77.6
Oct	50.3	49.2	48.2	47.3	46.4	45.6	44.9	44.0	45.7	51.6	57.1	61.0	64.0
Nov	36.6	35.5	34.7	33.9	33.1	32.5	32.0	31.6	31.9	35.4	41.1	45.1	48.4
Dec	29.2	28.7	28.0	27.5	26.9	26.6	26.0	25.4	25.2	26.7	30.7	34.8	37.9
Year	48.0	47.2	46.3	45.5	44.7	44.0	43.3	44.2	46.2	49.6	53.7	56.9	59.9

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

CINCINNATI, OHIO.

[h_t=153 ft.; local time, 38m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891-95.
32.5	33.3	33.6	33.5	33.1	32.6	32.1	31.5	30.8	30.1	29.5	29.8	36.2	22.9	Jan.
36.6	37.5	38.0	38.2	37.9	37.1	36.2	35.3	34.5	33.7	33.3	33.9	41.2	26.6	Feb.
45.5	46.5	47.1	47.2	46.9	46.0	44.9	43.9	42.9	42.1	41.3	41.7	49.6	33.4	Mar.
59.5	60.4	60.7	60.7	60.4	59.6	58.3	57.0	55.7	54.5	53.3	54.8	63.1	45.7	Apr.
67.1	67.8	68.3	68.3	68.0	67.1	65.6	64.3	62.8	61.4	60.2	62.2	70.8	53.1	May.
80.3	80.8	81.1	81.0	80.5	79.5	78.0	76.4	74.8	73.2	71.9	74.7	83.9	65.5	June.
81.8	82.5	83.0	82.5	82.3	81.5	79.8	78.2	76.5	75.0	73.6	76.0	85.2	66.1	July.
81.6	82.2	82.8	83.0	82.5	81.1	79.2	77.4	75.9	74.4	73.0	75.5	84.8	65.7	Aug.
77.4	78.2	78.6	78.4	77.9	76.2	74.3	72.3	70.7	69.2	67.8	70.6	80.2	60.6	Sept.
62.2	63.2	63.4	63.3	62.5	60.8	58.9	57.3	55.8	54.4	53.2	55.5	64.8	45.4	Oct.
45.9	46.7	47.0	46.9	46.3	45.6	44.7	43.6	42.8	42.0	41.4	42.2	49.4	34.8	Nov.
40.5	41.4	41.6	41.5	41.0	40.2	39.5	38.7	38.0	37.4	36.8	37.4	43.5	30.4	Dec.
59.2	60.0	60.4	60.4	59.9	58.9	57.6	56.3	55.1	54.0	52.9	54.5	62.7	45.8	Year.

CLEVELAND, OHIO.

[h_t=122 ft.; local time, 27m slow.]

27.9	28.1	28.3	27.9	27.5	27.0	26.6	26.2	26.0	25.6	25.3	25.7	31.4	19.6	Jan.
29.7	30.0	30.3	30.2	29.9	29.4	28.8	28.3	27.9	27.5	27.1	27.5	34.1	21.2	Feb.
37.2	37.4	37.4	37.5	37.1	36.3	35.7	35.1	34.6	34.0	33.6	34.2	41.3	27.2	Mar.
50.5	50.9	51.2	51.6	51.1	50.3	49.5	48.6	47.8	47.1	46.3	47.3	55.1	39.3	Apr.
60.1	60.2	60.4	60.5	60.6	60.2	58.8	57.9	56.9	55.7	54.7	56.6	64.6	48.2	May.
73.4	73.3	73.5	73.6	73.6	73.1	72.0	70.8	69.4	68.1	67.0	69.4	77.6	61.4	June.
75.5	75.7	75.9	75.9	75.9	75.3	73.8	72.4	70.9	69.4	68.3	71.1	79.1	62.4	July.
74.8	74.7	74.7	74.6	74.5	73.7	72.3	70.8	69.4	68.0	66.9	69.9	77.6	61.8	Aug.
71.5	71.3	71.5	71.4	70.3	69.0	67.3	65.8	64.8	63.9	63.1	65.9	73.9	57.8	Sept.
57.3	57.4	57.5	57.1	56.1	54.7	53.0	52.0	51.0	50.4	49.7	52.1	59.4	44.2	Oct.
42.4	42.6	42.6	42.2	41.6	40.9	39.8	39.3	38.9	38.5	38.1	39.2	45.4	33.1	Nov.
36.2	36.3	36.3	35.9	35.3	34.6	33.9	33.6	33.2	32.9	32.6	33.3	39.0	27.3	Dec.
53.0	53.2	53.3	53.2	52.8	52.0	51.0	50.1	49.2	48.4	47.7	49.4	56.5	42.0	Year.

DETROIT, MICH.

[h_t=158 ft.; local time, 32m slow.]

25.8	26.4	26.2	25.8	25.1	24.7	24.4	23.8	23.4	22.8	22.5	23.2	28.8	17.1	Jan.
27.4	28.0	28.2	28.1	27.4	26.6	26.1	25.5	25.1	24.5	24.1	24.7	30.9	18.4	Feb.
36.4	36.8	36.9	36.7	36.0	34.8	33.9	33.1	32.5	31.8	31.4	32.5	39.6	25.7	Mar.
52.3	52.8	52.9	52.5	51.8	50.0	48.1	46.6	45.5	44.5	43.7	46.3	55.4	38.0	Apr.
61.9	62.4	62.7	62.2	61.6	60.2	58.1	56.4	55.2	54.1	53.2	56.2	65.4	47.4	May.
76.3	76.7	76.8	76.4	75.4	73.8	71.5	69.5	68.1	66.8	65.7	69.6	79.2	60.6	June.
78.0	78.0	77.9	77.6	77.1	75.6	73.3	71.3	69.9	68.5	67.5	71.2	80.9	61.7	July.
76.7	77.2	77.3	76.9	75.8	73.8	71.7	70.0	68.6	67.5	66.5	70.1	79.3	61.0	Aug.
71.7	72.2	72.1	71.6	70.3	67.9	66.0	64.6	63.6	62.8	62.0	65.0	74.1	56.2	Sept.
55.9	56.3	56.2	55.3	54.0	52.5	51.3	50.4	49.6	48.9	48.2	50.3	58.0	42.8	Oct.
39.6	39.9	39.8	39.3	38.5	37.9	37.5	37.1	36.6	36.2	35.9	36.7	42.0	31.3	Nov.
33.1	33.6	33.5	32.9	32.2	31.7	31.4	30.9	30.7	30.3	29.8	30.6	35.7	25.1	Dec.
52.9	53.4	53.4	52.9	52.1	50.8	49.4	48.3	47.4	46.6	45.9	48.0	55.8	40.4	Year.

DODGE CITY, KANS.

[h_t=44 ft.; local time, 1h 40m slow.]

35.8	37.6	38.8	39.2	38.3	35.4	31.3	29.4	28.0	26.9	25.8	28.5	41.4	18.3	Jan.
35.1	36.6	37.7	38.0	37.7	35.9	32.0	30.1	28.6	27.4	26.4	28.5	40.9	18.1	Feb.
48.2	49.8	50.9	51.4	51.0	49.2	44.7	41.8	39.9	38.3	37.1	39.8	53.1	27.5	Mar.
64.9	66.5	67.4	67.7	67.1	65.6	61.2	57.5	55.1	52.7	51.1	55.4	68.9	41.2	Apr.
70.4	71.9	72.9	73.0	72.6	71.1	68.4	64.3	61.6	59.4	57.8	62.0	74.4	49.4	May.
81.2	82.4	83.0	83.0	82.3	80.9	78.1	74.3	71.2	68.8	67.2	72.0	84.5	59.4	June.
85.6	86.9	87.4	87.2	86.4	84.8	82.2	78.1	75.1	73.2	71.6	76.4	88.7	64.4	July.
84.7	86.0	86.4	86.2	85.5	83.8	80.1	76.1	73.7	71.7	70.1	74.9	87.9	62.3	Aug.
79.5	81.0	81.7	81.8	80.8	78.3	73.7	70.6	68.6	66.8	65.6	69.8	83.2	56.9	Sept.
66.2	67.8	68.5	68.5	67.4	63.6	58.4	55.9	54.1	52.3	50.9	55.4	70.1	42.1	Oct.
50.7	52.4	53.0	52.8	51.0	46.7	43.2	41.3	39.8	38.5	37.4	40.8	54.9	28.9	Nov.
40.1	41.8	42.7	42.6	40.9	37.4	34.6	33.2	32.0	30.9	29.8	32.5	45.1	22.8	Dec.
61.9	63.4	64.2	64.3	63.4	61.1	57.3	54.4	52.3	50.6	49.2	53.0	66.1	40.9	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

EASTPORT, ME.

[λ = 44° 54′ N.; φ = 66° 59′ W.]

1891-95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	21.7	21.4	21.0	20.8	20.4	20.1	19.9	20.0	20.6	21.6	22.4	23.4	24.1
Feb	20.7	20.3	19.9	19.6	19.3	18.9	18.7	19.2	19.9	21.1	22.3	23.4	24.3
Mar	27.9	27.5	27.1	26.8	26.5	26.2	26.7	27.4	28.5	29.7	30.7	31.7	32.3
Apr	36.1	35.7	35.2	34.9	34.7	35.2	36.4	37.9	39.1	40.6	41.9	42.8	43.3
May	43.6	43.1	42.5	42.2	42.4	43.4	45.0	46.5	48.1	49.2	50.1	50.7	51.8
June ...	50.2	49.7	49.3	49.3	49.7	50.9	52.3	54.0	55.6	56.8	58.1	58.8	59.4
July	54.7	54.4	54.1	53.8	54.3	55.5	57.5	59.5	61.5	62.9	64.0	64.7	65.2
Aug	56.2	55.9	55.7	55.4	55.3	56.3	58.0	60.1	61.9	63.3	64.5	65.1	65.9
Sept....	52.7	52.3	51.8	51.6	51.2	51.7	53.2	55.1	57.0	58.7	59.9	60.6	60.8
Oct.....	44.9	44.6	44.4	44.2	44.0	43.9	44.7	46.0	47.2	48.4	49.5	50.3	50.8
Nov	37.0	36.7	36.6	36.5	36.4	36.4	36.4	37.0	38.0	38.9	39.7	40.3	40.8
Dec	26.9	26.7	26.4	26.2	25.9	25.8	25.7	26.0	26.8	27.7	28.7	29.5	30.2
Year....	39.4	39.0	38.7	38.4	38.3	38.7	39.5	40.7	42.0	43.2	44.3	45.1	45.7

GALVESTON, TEX.

[λ = 29° 18′ N.; φ = 94° 50′ W.]

Jan	52.6	52.3	52.0	51.8	51.5	51.2	51.0	50.9	51.0	52.0	52.9	54.0	54.8
Feb	54.3	54.1	53.8	53.6	53.2	52.8	52.7	52.6	52.7	53.3	54.1	55.0	55.8
Mar	59.3	59.1	58.8	58.5	58.3	58.1	57.8	57.9	58.4	59.4	60.5	61.3	62.1
Apr	68.4	68.1	67.9	67.7	67.5	67.3	67.1	67.6	68.2	69.1	69.9	70.6	71.1
May	73.7	73.4	73.3	73.1	72.8	72.6	72.6	73.2	74.0	74.9	75.6	76.1	76.6
June ...	79.0	78.7	78.5	78.3	78.1	78.0	78.0	78.9	79.3	79.9	80.7	81.1	81.4
July	81.4	81.2	81.1	80.9	80.7	80.4	80.3	81.2	82.1	82.8	83.6	84.1	84.2
Aug	80.9	80.9	80.6	80.3	80.2	79.9	79.7	80.2	80.8	81.5	82.4	83.2	83.7
Sept....	79.3	79.0	78.8	78.5	78.2	77.8	77.5	77.7	78.5	79.4	80.3	80.9	81.4
Oct.....	71.7	71.3	70.9	70.5	70.2	69.7	69.4	69.3	70.0	71.1	72.2	73.3	74.0
Nov	62.9	62.6	62.2	61.7	61.5	61.1	60.9	61.0	61.3	62.2	63.3	64.3	65.1
Dec	57.6	57.3	57.0	56.8	56.5	56.3	55.9	55.8	55.9	56.3	57.2	58.0	58.8
Year....	68.4	68.2	67.9	67.6	67.4	67.1	66.9	67.2	67.7	68.5	69.4	70.2	70.8

HAVRE, MONT.

[λ = 48° 34′ N.; φ = 109° 40′ W.]

Jan	13.9	13.5	13.3	12.8	12.6	12.4	12.0	11.8	11.4	11.2	11.9	13.7	15.8
Feb	8.5	8.2	7.6	7.6	7.4	7.0	6.9	6.7	6.3	6.6	8.0	10.2	12.2
Mar	22.8	22.2	21.4	21.0	20.4	19.8	19.3	19.1	19.1	20.5	23.1	26.1	28.6
Apr	39.7	38.6	37.5	36.5	35.1	34.2	33.5	33.8	36.0	39.5	43.0	46.0	48.6
May	47.6	46.3	45.1	43.9	42.9	42.2	41.8	43.7	46.9	50.1	53.3	56.0	58.1
June ...	55.0	53.8	52.6	51.7	50.7	49.7	49.7	51.9	54.9	58.0	60.6	63.0	64.8
July	62.4	60.8	59.2	57.9	56.5	55.3	54.3	56.7	60.7	64.5	68.4	71.7	74.4
Aug	61.0	59.7	57.9	56.5	55.1	53.9	52.6	52.9	57.0	61.5	66.7	70.7	74.1
Sept....	50.8	49.5	48.8	47.9	46.8	45.7	44.6	44.1	45.5	48.9	53.9	57.6	61.0
Oct.....	40.4	39.5	38.5	37.9	37.1	36.4	35.9	35.6	35.3	37.4	42.0	46.3	49.2
Nov	26.7	26.3	25.9	25.3	25.1	25.1	24.8	24.7	24.5	24.9	26.4	28.9	31.4
Dec	20.5	20.0	20.1	20.2	19.8	19.6	19.2	19.0	18.6	18.5	19.1	20.9	23.1
Year....	37.4	36.5	35.7	34.9	34.1	33.4	32.9	33.3	34.7	36.8	39.7	42.6	45.1

KANSAS CITY, MO.

[λ = 39° 5′ N.; φ = 94° 37′ W.]

Jan	24.3	23.4	22.7	22.1	21.6	21.0	20.6	20.3	20.1	20.6	22.2	24.2	26.3
Feb	28.2	27.6	26.9	26.4	25.8	25.4	25.1	24.7	24.8	25.5	27.1	29.0	30.5
Mar	38.3	37.6	37.1	36.4	35.7	35.0	34.5	34.2	34.8	36.3	38.4	40.4	42.3
Apr	53.9	52.9	52.0	51.3	50.4	49.7	49.1	49.3	50.6	52.7	54.9	57.1	58.6
May	60.2	59.2	58.3	57.5	56.8	56.1	55.8	56.9	58.5	60.8	63.0	64.7	66.2
June ...	70.1	69.3	68.5	67.8	67.1	66.6	66.6	67.9	70.1	72.2	74.3	76.1	77.4
July	72.7	71.9	71.0	70.1	69.4	68.9	68.8	69.8	71.6	73.9	76.2	78.2	79.5
Aug	72.1	71.3	70.3	69.4	68.8	68.1	67.5	68.4	70.5	73.5	76.2	78.5	80.1
Sept....	67.6	66.7	66.0	65.3	64.5	63.8	63.2	63.1	64.8	68.1	71.6	74.1	76.1
Oct.....	54.3	53.5	52.6	51.7	50.9	50.2	49.4	48.9	50.0	53.1	56.8	59.9	62.1
Nov	39.5	38.8	37.9	37.1	36.5	35.9	35.3	34.7	35.0	36.5	39.0	41.6	43.8
Dec	33.3	32.9	32.2	31.7	31.2	30.8	30.4	30.2	30.0	30.9	32.7	34.6	36.2
Year....	51.2	50.4	49.6	48.9	48.2	47.6	47.2	47.4	48.4	50.3	52.7	54.9	56.6

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

EASTPORT, ME.

[h_t = 69 ft.; local time, 32m fast.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891-95.
24.8	25.0	25.0	24.6	24.4	24.1	23.9	23.5	22.9	22.5	22.1	22.5	28.1	15.8	Jan.
25.1	25.4	25.3	24.9	24.3	23.8	23.3	22.7	22.1	21.7	21.2	22.0	27.6	11.9	Feb.
32.8	33.0	33.0	32.5	31.9	31.2	30.5	30.0	29.4	28.8	28.3	29.6	35.1	24.0	Mar.
43.5	43.6	43.4	42.5	41.4	40.1	39.2	38.3	37.8	37.2	36.8	39.0	45.9	33.2	Apr.
51.8	51.8	51.3	50.6	49.3	48.1	46.9	46.3	45.6	45.0	44.4	47.1	54.7	40.8	May.
59.2	59.0	58.2	57.2	56.2	54.4	53.5	52.5	51.8	51.2	50.8	54.1	62.8	47.4	June.
65.2	65.0	64.5	63.8	62.1	60.1	58.8	57.6	57.0	56.0	55.4	59.5	68.9	51.7	July.
65.9	65.7	64.8	64.0	62.2	60.2	59.4	58.4	57.9	57.3	56.8	60.2	68.7	53.7	Aug.
60.9	60.5	59.9	58.3	56.8	55.6	55.2	54.5	54.1	53.5	53.0	55.8	63.2	50.0	Sept.
50.9	50.7	49.9	48.9	48.1	47.4	47.0	46.4	46.0	45.5	45.1	47.0	52.4	41.7	Oct.
40.8	40.5	40.1	39.3	38.8	38.4	38.0	37.6	37.2	36.9	36.6	38.1	43.0	32.6	Nov.
30.7	30.6	30.2	29.6	29.3	28.9	28.7	28.4	28.1	27.7	27.4	28.0	33.2	21.3	Dec.
46.0	45.9	45.5	44.7	43.7	42.7	42.0	41.4	40.8	40.3	39.8	41.9	48.7	35.6	Year.

GALVESTON, TEX.

[h_t = 85 ft.; local time, 1h 19m slow.]

55.5	56.0	56.0	56.0	55.3	54.8	54.6	54.2	53.8	53.5	53.2	53.4	58.6	47.7	Jan.
56.5	56.8	57.0	57.1	56.6	55.9	55.7	55.3	55.0	54.7	54.5	54.7	59.8	49.7	Feb.
62.6	63.0	63.0	63.0	62.6	62.0	61.3	61.1	60.7	60.3	60.0	60.4	65.6	55.5	Mar.
71.6	71.7	71.8	71.6	71.1	70.5	69.9	69.5	69.2	69.0	68.7	69.4	74.0	65.4	Apr.
76.8	77.0	77.1	77.0	76.6	76.0	75.3	74.8	74.5	74.3	74.1	74.8	79.1	71.0	May.
81.7	81.9	81.9	81.8	81.5	81.0	80.4	79.8	79.6	79.5	79.3	79.9	84.3	76.1	June.
84.4	84.4	84.4	81.3	83.9	83.4	82.7	82.1	81.9	81.7	81.5	82.5	86.9	78.4	July.
83.8	84.0	83.8	83.6	83.3	82.7	81.9	81.4	81.3	81.1	81.0	81.7	86.5	77.4	Aug.
81.8	82.0	82.2	81.9	81.5	81.0	80.3	80.1	79.9	79.6	79.4	79.9	84.2	75.6	Sept.
74.6	74.9	75.1	75.0	74.5	73.6	73.2	72.8	72.5	72.1	71.8	72.2	77.1	67.5	Oct.
65.6	65.9	65.9	65.7	65.2	64.6	64.3	64.9	63.7	63.3	63.0	63.4	68.3	58.3	Nov.
59.5	60.0	60.1	60.0	59.5	58.9	58.6	58.3	58.1	57.8	57.6	57.9	62.5	52.6	Dec.
71.2	71.5	71.5	71.4	71.0	70.4	69.8	69.5	69.2	68.9	68.7	69.2	73.9	64.6	Year.

HAVRE, MONT.

[h_t = 15 ft.; local time, 2h 19m slow.]

18.1	19.4	20.3	21.0	20.4	18.4	17.0	16.0	15.2	14.5	13.8	15.0	20.8	2.0	Jan.
14.2	15.7	16.9	17.6	17.5	16.5	14.7	12.8	11.6	10.7	10.2	10.9	22.8	3.9	Feb.
30.8	32.6	33.5	34.4	34.5	33.6	31.8	28.7	26.6	25.2	24.1	25.8	38.8	16.2	Mar.
50.8	51.9	52.9	53.5	53.4	52.8	51.8	48.2	44.6	42.7	41.2	43.6	54.3	30.2	Apr.
59.9	61.2	62.0	62.6	62.2	61.6	61.0	58.6	54.8	51.9	49.6	52.6	65.4	39.8	May.
66.2	67.7	68.7	69.1	68.9	68.0	67.5	65.6	62.5	59.1	56.8	59.8	72.2	47.4	June
76.4	77.8	78.9	79.9	80.2	79.5	78.5	76.3	72.2	67.4	64.6	68.1	82.7	52.2	July.
76.5	78.6	79.8	80.6	80.7	80.2	78.7	74.5	68.8	65.3	62.8	66.9	80.8	50.0	Aug.
63.7	65.5	66.9	67.4	67.4	66.3	63.6	59.2	55.7	53.8	52.0	55.3	69.0	41.3	Sept.
52.0	54.2	55.6	56.3	55.9	53.7	49.2	46.2	44.2	42.7	40.8	44.3	58.0	31.3	Oct.
33.3	34.6	35.4	35.5	34.7	32.4	30.4	29.0	28.2	27.4	26.9	28.7	37.8	18.4	Nov.
25.0	26.4	27.4	27.3	26.2	24.6	23.5	22.2	21.7	21.5	21.3	21.9	28.5	10.8	Dec.
47.2	48.8	49.9	50.6	50.2	49.0	47.3	44.8	42.2	40.2	38.7	41.1	52.6	28.6	Year.

KANSAS CITY, MO.

[h_t = 78 ft.; local time, 1h 18m slow.]

28.1	29.6	30.5	30.6	30.0	28.9	27.9	27.0	26.2	25.3	24.6	24.9	35.3	18.8	Jan.
31.9	33.0	33.8	34.1	33.9	33.1	32.1	31.2	30.3	29.5	28.9	29.1	37.3	21.1	Feb.
44.0	45.2	46.1	46.6	46.6	45.8	44.3	43.0	41.9	40.8	40.0	40.2	49.3	31.3	Mar.
60.2	61.4	62.1	62.7	62.7	61.8	60.3	58.9	57.5	56.2	55.1	55.9	65.4	46.6	Apr.
67.4	68.2	68.9	69.2	69.0	67.9	66.5	65.0	63.6	62.3	61.2	62.6	71.9	53.0	May.
78.6	79.4	79.9	80.1	79.9	78.8	77.3	75.6	74.0	72.5	71.4	73.4	82.4	64.1	June.
80.8	81.7	82.3	82.4	82.0	81.2	79.8	78.2	76.6	75.1	73.9	75.7	84.4	66.3	July.
81.5	82.2	82.8	82.8	82.5	81.6	79.2	77.4	75.8	74.4	73.2	75.3	85.2	65.5	Aug.
77.5	78.6	79.3	79.2	78.5	76.8	73.9	72.5	70.8	69.6	68.4	70.8	81.4	60.7	Sept.
63.8	65.1	65.9	66.0	65.3	63.1	60.8	59.2	57.8	56.3	55.1	57.2	67.9	46.9	Oct.
45.4	46.6	47.3	47.3	46.6	45.1	43.5	42.7	41.7	40.8	39.9	40.8	49.2	32.3	Nov.
37.9	39.1	39.7	39.7	39.0	37.8	36.6	35.8	35.1	34.4	33.8	34.4	42.4	26.7	Dec.
58.1	59.2	59.9	60.1	59.7	58.5	56.8	55.5	54.3	53.1	52.1	53.4	62.7	44.4	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

KEY WEST, FLA.

[λ=24° 34′ N.; φ=81° 49′ W.]

1891-95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	66.8	66.8	66.7	66.4	66.3	66.2	66.1	66.6	67.6	68.8	70.0	70.5	70.8
Feb	68.2	68.1	68.0	67.9	67.8	67.6	67.6	68.4	69.7	70.6	71.6	72.1	72.4
Mar	70.7	70.5	70.3	70.2	70.2	70.1	70.3	71.5	72.7	73.5	74.3	74.8	75.1
Apr	73.6	73.3	73.0	72.9	72.7	72.7	73.5	74.9	76.0	76.7	77.5	78.0	78.1
May	76.4	76.1	76.0	75.9	75.8	75.7	77.3	78.5	79.3	80.1	80.6	80.9	81.1
June ...	79.3	79.1	78.8	78.7	78.6	78.7	79.8	81.1	81.8	82.6	83.4	83.7	83.8
July	81.0	80.7	80.5	80.3	80.2	80.2	81.6	83.3	84.4	85.2	85.9	86.0	86.1
Aug	81.7	81.6	81.1	81.0	80.9	80.8	81.7	83.6	84.4	85.3	85.9	86.3	86.5
Sept	80.3	80.0	80.0	80.0	79.8	79.8	80.3	82.1	83.1	84.1	84.7	85.1	85.2
Oct.	76.9	76.7	76.6	76.5	76.3	76.3	76.4	77.3	78.0	78.9	79.6	79.9	79.7
Nov	72.8	72.6	72.3	72.3	72.0	71.9	71.9	72.6	73.6	74.4	75.1	75.5	75.7
Dec	69.4	69.3	69.2	68.9	68.8	68.7	68.6	69.2	70.2	71.1	71.9	72.5	72.8
Year....	74.8	74.6	74.4	74.2	74.1	74.1	74.6	75.8	76.7	77.6	78.4	78.8	78.9

MARQUETTE, MICH. *

[λ=46° 34′ N.; φ=87° 24′ W.]

Jan	13.6	13.4	13.1	13.0	12.7	12.4	12.2	12.0	11.9	12.4	13.5	14.9	16.1
Feb	13.1	12.7	12.3	11.8	11.2	10.8	10.5	10.4	10.7	11.8	13.5	15.3	16.8
Mar	23.4	23.3	22.7	22.3	21.8	21.3	21.0	21.1	22.3	23.8	25.6	27.0	27.6
Apr	35.3	35.2	34.9	34.7	34.3	34.2	34.5	36.0	36.8	37.8	38.8	39.1	39.5
May	45.8	45.6	45.4	45.1	44.7	44.6	45.4	47.4	48.8	49.5	50.2	50.8	50.8
June ...	58.9	58.5	58.1	57.2	56.8	57.3	59.2	61.2	62.8	63.8	64.8	64.8	65.4
July	62.9	62.5	62.2	61.7	61.1	61.2	62.8	65.4	66.7	68.1	69.4	70.0	70.4
Aug	60.2	59.9	59.7	59.2	58.8	58.8	59.6	61.5	63.3	65.0	66.5	67.4	68.2
Sept	56.4	55.9	55.5	55.2	54.5	54.3	54.1	55.2	57.2	59.4	61.4	63.0	63.9
Oct.	44.2	44.0	43.7	43.2	42.9	42.7	42.4	42.6	43.6	45.3	46.8	48.0	48.8
Nov	30.0	29.8	29.7	29.4	29.2	29.0	28.8	28.8	29.0	29.9	30.9	32.0	32.8
Dec	21.7	21.4	21.2	21.0	20.9	20.8	20.6	20.7	20.7	21.4	22.5	23.6	24.4
Year....	38.8	38.5	38.2	37.8	37.4	37.3	37.6	38.5	39.5	40.7	42.0	43.0	47.1

* For four years, 1892-1895.

MEMPHIS, TENN.

[λ=35° 9′ N.; φ=90° 3′ W.]

Jan	38.3	37.6	36.9	36.4	36.0	35.5	35.1	34.9	35.2	36.7	38.5	40.5	42.2
Feb	42.3	41.8	41.1	40.4	39.9	39.3	38.7	38.5	39.0	40.3	41.8	43.4	45.1
Mar	48.9	48.2	47.4	46.7	46.0	45.4	45.1	45.1	46.0	47.8	49.8	52.1	53.6
Apr	60.4	59.6	58.9	58.2	57.4	56.8	56.8	58.2	59.7	62.0	63.9	65.9	67.4
May	65.0	64.0	63.3	62.8	62.2	61.6	62.1	64.0	65.8	67.9	69.7	71.6	72.6
June ...	73.5	72.7	72.0	71.3	70.8	70.4	71.3	73.9	76.0	78.4	80.3	82.3	83.3
July	74.6	73.9	73.1	72.6	72.0	71.6	72.1	74.5	76.2	78.4	80.3	82.1	83.1
Aug	74.2	73.5	72.7	72.1	71.6	71.0	71.1	73.0	75.1	77.8	80.0	82.0	83.2
Sept	69.9	69.1	68.4	67.6	66.9	66.3	66.0	67.7	70.1	73.4	75.9	78.1	79.6
Oct.	58.1	57.1	56.0	55.3	54.4	53.6	53.0	53.3	55.7	59.2	62.6	65.3	67.3
Nov	48.0	47.2	46.6	46.0	45.4	45.0	44.5	44.2	45.1	47.0	49.3	51.6	53.4
Dec	43.4	43.0	42.5	42.0	41.6	41.0	40.6	40.4	40.8	42.1	43.6	45.5	46.9
Year....	58.0	57.3	56.6	56.0	55.4	54.8	54.7	54.8	57.1	59.2	61.3	63.4	64.8

NEW ORLEANS, LA.

[λ=29° 58′ N.; φ=90° 4′ W.]

Jan	50.1	49.7	49.2	48.8	48.4	48.1	47.9	47.7	47.9	49.2	51.3	53.2	54.8
Feb	54.7	54.4	54.0	53.6	53.2	52.9	52.5	52.4	52.8	54.0	55.7	57.6	59.0
Mar	58.5	57.9	57.3	56.9	56.4	56.1	55.7	55.9	56.9	58.7	60.7	62.5	64.1
Apr	65.9	65.5	65.1	64.8	64.5	64.2	64.1	65.1	66.7	68.7	70.6	71.9	73.0
May	71.1	70.6	70.0	69.7	69.4	69.2	69.7	71.6	73.3	75.0	76.3	77.5	78.3
June ...	76.0	75.6	75.3	75.0	74.7	74.7	75.5	77.3	79.0	80.7	81.9	82.5	82.8
July	77.7	77.3	77.1	76.9	76.7	76.7	77.1	78.9	80.4	81.7	82.9	83.6	83.7
Aug	77.7	77.2	77.0	76.6	76.4	76.2	76.5	77.8	79.4	81.2	82.6	83.7	84.1
Sept	75.9	75.4	75.0	74.7	74.4	74.0	73.9	74.8	76.5	78.3	80.1	81.4	82.4
Oct	66.1	65.6	65.0	64.5	64.1	63.6	63.2	63.7	65.3	67.7	70.3	72.1	73.4
Nov	57.7	57.3	56.8	56.4	56.0	55.7	55.3	55.3	56.6	58.9	61.3	63.1	64.5
Dec	54.0	53.7	53.2	52.9	52.2	51.9	51.6	51.4	51.7	53.4	55.8	58.0	59.6
Year....	65.4	65.0	64.6	64.2	63.9	63.6	63.6	64.3	65.5	67.3	69.1	70.6	71.6

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

KEY WEST, FLA.

[h_1=42 ft.; local time, 27m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891-95.
70.6	70.4	70.1	69.6	68.4	67.8	67.6	67.4	67.2	67.2	67.0	68.0	71.6	63.5	Jan.
72.6	72.4	72.2	71.8	70.8	69.7	69.3	69.0	68.8	68.7	68.4	69.7	74.6	66.2	Feb.
75.3	75.1	74.6	74.1	73.3	72.0	71.6	71.4	71.2	71.0	70.9	72.3	76.6	68.1	Mar.
78.2	78.2	77.9	77.2	76.3	75.2	74.7	74.4	74.3	74.1	73.9	75.3	79.7	71.2	Apr.
81.5	81.3	81.0	80.5	79.7	78.5	78.0	77.7	77.4	77.2	76.8	78.5	82.8	74.3	May.
83.9	83.9	83.6	83.1	82.4	81.2	80.6	80.2	80.1	79.7	79.6	81.1	85.6	76.4	June.
86.1	85.9	85.6	85.3	84.4	83.3	82.5	82.0	81.6	81.4	81.1	83.1	87.9	78.2	July.
86.7	86.3	86.0	85.6	84.8	83.5	82.9	82.5	82.1	81.9	81.8	83.5	88.2	78.2	Aug.
85.2	85.3	84.9	84.1	83.0	81.9	81.6	81.4	81.2	81.1	80.6	82.3	86.9	76.5	Sept.
79.9	79.8	79.6	79.2	78.2	77.8	77.7	77.4	77.3	77.1	76.9	77.9	81.4	74.1	Oct.
76.0	75.9	75.6	75.0	74.1	73.7	73.6	73.5	73.3	73.0	72.8	73.7	77.2	70.0	Nov.
72.9	72.8	72.5	71.6	70.8	70.4	70.3	70.0	69.9	69.6	69.4	70.5	74.1	66.7	Dec.
79.1	78.9	78.6	77.6	77.2	76.2	75.9	75.6	75.4	75.2	74.9	76.3	80.6	72.0	Year.

MARQUETTE, MICH. *

[h_1=67 ft.; local time, 49m slow.]

16.8	17.5	17.6	17.3	16.2	15.2	14.6	14.1	13.8	13.8	13.7	14.2	22.4	9.3	Jan.
17.7	18.3	18.8	18.5	17.9	17.0	16.1	15.1	14.6	14.3	13.8	14.3	23.5	8.6	Feb.
28.2	28.6	28.5	28.1	27.7	26.8	25.9	25.2	24.6	24.4	24.0	24.8	31.2	17.0	Mar.
39.7	39.6	39.7	39.7	39.3	38.6	37.5	36.7	36.2	36.0	35.8	37.1	44.4	30.6	Apr.
51.0	51.0	50.8	50.0	49.7	49.2	48.4	47.5	46.7	46.3	46.1	47.9	56.2	39.9	May.
65.4	64.8	64.8	63.8	63.3	63.2	62.1	61.0	60.4	59.8	59.2	61.6	70.2	51.6	June.
70.7	70.5	69.8	69.4	68.7	68.4	67.2	65.4	64.3	63.8	63.4	66.1	73.6	56.2	July.
68.1	68.1	68.1	67.8	67.2	66.0	64.0	62.2	61.1	60.8	60.4	63.4	71.1	55.2	Aug.
64.6	64.7	64.5	63.9	62.8	61.0	59.0	58.0	57.2	56.7	56.4	59.0	68.4	51.5	Sept.
49.5	49.8	49.8	49.1	48.1	46.8	45.9	45.3	44.9	44.5	44.3	45.7	52.2	39.5	Oct.
33.2	33.4	33.3	32.9	32.0	31.3	30.9	30.5	30.2	29.9	29.7	30.7	35.7	24.7	Nov.
25.0	25.2	25.2	24.6	23.6	23.0	22.7	22.5	22.1	21.9	21.7	22.4	29.3	18.4	Dec.
44.2	44.3	44.2	43.8	43.0	42.2	41.2	40.3	39.7	39.4	39.0	40.6	48.2	33.5	Year.

* For four years, 1892-1895.

MEMPHIS, TENN.

[h_1=140 ft.; local time, 1h 0m slow.]

43.5	44.4	45.0	44.9	44.1	43.1	42.2	41.3	40.5	39.8	39.1	39.7	48.0	32.3	Jan.
46.6	47.7	48.5	48.4	47.7	46.7	45.7	44.8	43.9	43.5	42.9	43.3	51.1	35.5	Feb.
55.0	56.2	56.8	57.0	56.8	55.6	54.2	53.0	52.1	51.3	50.4	50.9	60.1	42.8	Mar.
68.4	69.2	69.8	70.0	69.4	68.0	66.4	64.8	63.6	62.4	61.4	63.3	72.9	54.4	Apr.
73.7	74.5	74.9	74.9	74.2	73.3	71.4	69.6	68.2	67.0	65.9	68.4	77.9	59.6	May.
84.5	84.8	84.8	84.3	83.1	82.3	80.3	78.2	76.9	75.6	74.8	77.7	87.8	68.6	June.
84.0	84.5	84.4	83.9	83.4	82.1	80.6	78.8	77.6	76.5	75.5	78.2	87.6	70.2	July.
84.3	84.9	84.9	84.6	83.7	82.2	80.2	78.6	77.3	76.1	75.0	77.9	87.6	69.6	Aug.
80.7	81.5	81.4	81.2	80.3	78.3	76.0	74.4	73.0	71.9	70.7	73.7	84.4	64.6	Sept.
68.9	69.9	70.3	70.0	68.9	66.6	64.5	62.8	61.3	60.1	59.0	61.4	72.5	51.1	Oct.
55.1	56.2	56.5	56.2	55.2	53.6	52.3	51.3	50.2	49.4	48.6	50.4	58.8	41.4	Nov.
48.3	49.3	49.8	49.5	48.7	47.8	46.8	46.0	45.3	44.6	44.0	44.8	52.4	37.9	Dec.
66.1	66.9	67.3	67.1	66.3	65.0	63.4	62.0	60.8	59.8	58.9	60.8	70.1	52.3	Year.

NEW ORLEANS, LA.

[h_1=112 ft.; local time, 1h 0m slow.]

55.8	56.7	57.1	57.2	56.6	55.0	53.7	52.9	52.0	51.3	50.7	51.9	60.5	44.7	Jan.
59.9	60.4	60.9	60.9	60.5	59.3	58.1	57.3	56.6	55.8	55.2	56.3	64.0	49.7	Feb.
65.1	66.1	66.5	66.4	65.8	64.3	62.6	61.5	60.6	59.8	59.2	60.6	68.7	53.4	Mar.
73.7	74.0	74.3	74.3	73.6	72.3	70.3	69.1	68.2	67.4	66.7	68.9	76.9	62.0	Apr.
79.1	79.2	79.3	79.2	78.7	77.2	75.6	74.3	73.3	72.4	71.8	74.3	82.1	69.0	May.
83.1	83.1	83.3	83.1	82.3	81.3	80.0	78.7	77.9	77.3	76.6	79.1	87.0	72.4	June.
83.6	83.7	83.6	83.3	82.7	81.8	80.6	79.8	79.0	78.5	78.0	80.2	87.9	74.2	July.
84.4	84.6	84.3	83.9	83.3	82.3	81.0	80.1	79.3	78.6	78.1	80.3	88.2	74.5	Aug.
82.6	82.9	83.0	82.9	82.1	80.9	79.4	78.3	77.4	76.7	76.1	78.3	86.1	72.3	Sept.
74.2	74.7	75.1	74.9	74.2	72.5	70.6	69.3	68.2	67.3	66.4	68.8	77.5	61.6	Oct.
65.2	65.8	66.0	65.6	64.5	62.7	61.3	60.2	59.4	58.7	58.1	50.1	68.4	52.9	Nov.
60.5	61.1	61.2	60.9	59.8	58.5	57.1	56.2	55.4	54.7	54.2	55.8	64.1	48.6	Dec.
72.3	72.7	72.9	72.7	72.0	70.7	69.2	68.1	67.3	66.5	65.9	67.0	76.0	61.3	Year

21084

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

NEW YORK, N. Y.

[λ = 40° 43′ N.; φ = 74° 0′ W.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	28.9	28.5	28.2	28.0	27.7	27.6	27.8	28.1	28.6	29.6	30.9	31.8	32.6
Feb	29.4	28.9	28.5	28.1	27.8	27.6	27.7	28.1	28.8	29.8	31.0	32.3	33.1
Mar	35.1	34.9	34.1	33.7	33.3	33.1	33.3	34.1	35.3	36.8	38.3	39.5	40.9
Apr	46.1	45.5	44.9	44.4	44.3	44.2	44.8	46.1	47.7	49.3	50.8	52.2	53.4
May	55.5	54.9	54.4	54.0	53.6	53.7	54.7	56.3	58.1	60.1	61.7	62.9	64.0
June ...	66.0	65.4	64.9	64.5	64.3	64.3	65.4	67.1	69.0	70.9	72.7	74.0	75.0
July	69.5	69.0	68.2	67.7	67.3	67.3	68.3	69.9	71.9	74.0	75.8	77.2	78.2
Aug	70.0	69.4	68.8	68.4	68.0	67.8	68.4	69.9	71.5	73.5	75.3	76.8	78.0
Sept....	64.9	64.3	63.7	63.3	62.8	62.6	62.8	64.3	65.6	67.5	69.4	70.9	71.9
Oct	52.4	51.9	51.3	51.0	50.6	50.2	50.3	51.2	52.4	54.3	56.2	57.6	58.8
Nov	42.1	41.8	41.4	41.2	41.1	40.6	40.6	40.9	41.7	42.6	43.9	45.1	46.2
Dec	34.8	34.4	34.2	34.0	33.8	33.6	33.5	33.6	34.1	34.8	36.0	37.3	38.3
Year ...	49.6	49.1	48.6	48.2	47.9	47.7	48.1	49.1	50.4	51.9	53.5	54.8	55.9

PHILADELPHIA, PA.

[λ = 39° 57′ N.; φ = 75° 9′ W.]

Jan	29.9	29.6	29.4	29.2	28.9	28.8	28.6	28.9	29.4	30.4	31.8	32.9	33.9
Feb	30.9	30.6	30.1	29.9	29.5	29.3	29.1	29.7	30.6	31.9	33.3	34.3	35.3
Mar	37.0	36.4	35.7	35.3	34.7	34.5	34.6	35.6	36.9	38.3	39.9	41.5	42.7
Apr	47.4	47.0	46.5	46.0	45.7	45.5	46.3	48.1	49.7	51.7	53.5	55.0	56.2
May....	56.6	56.0	55.7	55.2	54.8	55.0	56.2	58.2	60.0	62.1	64.0	65.5	66.7
June ...	67.4	66.8	66.3	65.9	65.5	65.9	67.4	69.6	71.4	73.5	75.4	77.0	78.2
July....	69.9	69.4	68.8	68.3	67.8	68.1	69.4	71.7	73.6	75.7	77.6	79.1	80.0
Aug	70.1	69.6	69.1	68.6	68.2	68.0	69.0	70.9	73.0	75.1	77.3	78.7	79.8
Sept....	65.0	64.4	64.1	63.5	62.8	62.5	62.9	64.6	66.5	68.9	70.9	72.7	73.9
Oct.....	52.0	51.6	51.1	50.7	50.3	50.0	50.2	51.8	53.5	55.6	57.6	59.3	60.6
Nov	42.0	41.6	41.3	41.0	40.6	40.4	40.3	41.0	42.0	43.6	45.1	46.4	47.5
Dec	35.4	35.0	34.7	34.6	34.3	34.1	34.0	34.4	35.1	36.2	37.6	38.9	39.9
Year....	50.3	49.8	49.4	49.0	48.6	48.5	49.0	50.4	51.8	53.6	55.3	56.8	57.9

PITTSBURG, PA.

[λ = 40° 32′ N.; φ = 80° 2′ W.]

Jan	29.0	28.6	28.4	28.0	27.7	27.6	27.7	27.8	28.1	29.0	30.4	31.6	32.5
Feb	31.0	30.5	30.1	29.8	29.5	29.4	29.3	29.6	30.1	31.2	32.5	33.9	35.1
Mar	37.1	36.4	35.8	35.4	35.0	34.7	34.6	35.4	36.6	38.4	40.2	41.8	43.1
Apr	48.9	48.0	47.2	46.6	46.1	45.7	45.9	47.8	49.7	52.1	54.1	55.8	57.2
May....	57.1	56.3	55.4	54.8	54.2	54.0	55.1	57.8	60.5	62.8	64.4	65.7	66.8
June ...	68.4	67.4	66.5	65.7	65.1	65.0	66.6	69.5	72.1	74.5	76.4	77.8	78.8
July....	68.6	67.6	66.8	65.9	65.2	65.0	66.5	69.4	72.1	74.5	76.6	78.3	79.6
Aug	68.3	67.4	66.4	65.6	65.0	64.6	65.3	67.7	70.9	74.0	76.5	78.3	79.7
Sept....	64.6	63.8	62.9	62.3	61.7	61.3	61.3	62.9	65.9	69.1	71.6	73.8	75.2
Oct.....	50.7	50.0	49.2	48.6	48.2	47.5	47.4	48.1	50.1	53.2	56.3	58.6	60.1
Nov	40.9	40.4	40.0	39.7	39.4	39.2	39.0	39.0	39.9	41.4	43.4	44.8	46.1
Dec	36.2	35.8	35.6	35.1	34.8	34.5	34.5	34.4	34.7	35.8	37.1	38.3	39.3
Year....	50.1	49.4	48.7	48.1	47.7	47.4	47.8	49.1	50.9	53.0	55.0	56.6	57.8

PORTLAND, OREG.

[λ = 45° 32′ N.; φ = 122° 43′ W.]

Jan	38.4	38.1	37.8	37.7	37.4	37.1	36.8	36.8	36.6	36.5	36.4	36.8	37.7
Feb	38.4	37.9	37.4	37.1	36.8	36.6	36.3	36.3	35.9	35.9	36.1	36.8	38.1
Mar	44.6	43.7	43.0	42.2	41.6	41.1	40.6	40.4	40.2	40.0	40.7	42.0	44.0
Apr	48.2	47.4	46.4	45.8	45.1	44.5	44.2	43.7	43.5	44.1	45.5	47.3	49.2
May....	55.2	54.1	52.8	51.8	50.7	49.9	49.1	48.9	49.3	50.8	52.5	54.4	56.5
June ...	58.5	57.4	56.1	55.2	54.2	53.4	52.6	52.5	53.0	54.5	56.2	57.8	59.8
July....	65.2	63.7	61.7	60.4	59.0	58.0	56.9	56.3	57.0	58.7	60.3	62.2	64.6
Aug	67.2	65.7	63.6	62.3	61.0	59.7	58.5	57.4	57.2	58.4	60.5	62.7	65.5
Sept....	58.9	57.8	56.6	55.8	54.9	54.1	53.4	53.0	52.4	52.8	54.2	56.0	58.5
Oct.....	52.2	51.4	50.5	49.9	49.0	48.6	48.2	48.1	47.6	47.6	48.3	49.8	51.9
Nov	45.7	45.3	44.8	44.6	44.3	43.9	43.7	43.6	43.4	43.3	43.6	44.5	45.7
Dec	40.2	40.1	39.8	39.6	39.4	39.2	39.1	39.1	39.0	38.9	38.9	39.5	40.1
Year....	51.1	50.2	49.2	48.5	47.8	47.2	46.6	46.3	46.3	46.8	47.8	49.2	51.0

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

NEW YORK, N. Y.

[h_t = 183 ft.; 298 (*a*); local time, 4^m fast.]

2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	Mid.	Mean.	Mean max.	Mean min.	1891-95.
33.2	33.7	33.6	33.1	32.5	31.8	31.3	30.8	30.4	30.0	29.5	30.3	36.8	24.3	Jan.
33.8	34.3	34.4	34.1	33.7	33.0	32.4	31.7	31.1	30.5	30.0	30.9	37.5	24.5	Feb.
41.7	42.1	42.2	41.8	41.0	39.9	39.1	38.2	37.4	36.6	35.9	37.4	45.0	30.7	Mar.
54.1	54.3	54.2	53.5	52.4	51.1	50.0	49.1	48.3	47.7	47.1	49.0	57.3	41.6	Apr.
64.8	64.9	64.7	63.9	62.8	61.5	60.3	59.4	58.3	57.3	56.5	59.1	68.0	51.5	May
75.5	75.4	75.1	74.5	73.5	71.9	70.5	69.4	68.6	67.6	66.8	69.7	78.4	62.2	June.
78.7	78.8	78.7	77.9	77.1	75.8	74.5	73.4	72.3	71.2	70.4	73.0	81.6	65.3	July.
78.8	78.9	78.7	77.8	76.6	75.3	74.1	73.2	72.4	71.4	70.8	73.1	81.4	66.0	Aug.
72.6	72.9	73.0	72.2	71.0	69.7	68.6	67.7	67.1	66.0	65.3	67.5	75.4	60.5	Sept.
59.4	59.7	59.5	58.8	57.7	56.7	55.7	54.9	54.2	53.4	52.8	54.6	62.3	47.9	Oct.
46.6	46.9	46.8	46.1	45.5	44.7	44.0	43.6	43.1	42.7	42.1	43.4	50.1	37.4	Nov.
39.2	39.6	39.5	38.9	38.3	37.6	37.0	36.3	35.9	35.6	35.2	36.0	42.6	30.1	Dec.
56.5	56.8	56.7	56.0	55.2	54.1	53.1	52.3	51.6	50.8	50.2	52.0	59.7	45.2	Year.

PHILADELPHIA, PA.

[h_t = 168 ft.]

34.7	34.9	34.9	34.2	33.5	32.7	32.5	31.8	31.3	30.8	30.5	31.4	38.2	25.5	Jan.
36.1	36.6	36.7	36.3	35.5	34.5	33.9	33.2	32.7	32.0	31.6	32.6	39.4	26.2	Feb.
43.6	44.1	44.3	44.0	43.2	41.8	41.1	40.0	39.4	38.6	37.9	39.2	47.1	32.1	Mar.
57.0	57.2	57.3	57.0	56.1	54.4	52.6	51.1	50.0	49.1	48.8	51.2	60.3	43.4	Apr.
67.8	68.3	68.3	67.6	66.3	64.4	62.5	61.0	59.6	58.6	57.8	61.2	71.1	52.9	May.
79.1	79.3	79.2	78.3	77.0	75.1	73.1	71.4	70.3	69.2	68.4	72.1	80.4	64.0	June.
80.7	81.1	81.1	80.3	79.1	77.2	75.4	73.7	72.4	71.4	70.6	74.3	84.0	66.4	July.
80.4	80.6	80.6	79.9	78.8	76.9	75.2	73.6	72.5	71.7	70.9	74.1	83.8	66.6	Aug.
75.0	75.3	75.2	74.4	72.7	70.6	68.9	67.6	66.6	65.7	65.1	68.3	77.7	60.9	Sept.
61.3	61.5	61.1	60.0	58.7	57.0	55.9	54.9	54.1	53.3	52.5	55.2	63.8	47.8	Oct.
48.1	48.2	47.9	47.0	46.0	45.0	44.4	43.6	43.1	42.6	42.2	43.8	50.8	37.5	Nov.
40.6	41.0	40.9	40.1	39.3	38.5	38.0	37.3	36.7	36.1	35.7	37.0	44.1	31.1	Dec.
57.9	59.0	59.0	58.3	57.2	55.7	54.5	53.3	52.4	51.6	51.0	53.4	61.7	46.2	Year.

PITTSBURG, PA.

[h_t = 116 ft.; local time, 20^m slow.]

33.2	33.4	33.3	33.0	32.5	31.9	31.5	30.9	30.5	29.9	29.5	30.3	36.4	23.0	Jan.
35.9	36.4	36.5	36.4	35.6	34.8	34.2	33.4	32.9	32.1	31.7	32.6	40.0	24.6	Feb.
44.1	44.7	45.0	44.6	43.8	42.6	41.7	40.5	39.7	38.9	38.2	39.5	48.1	30.5	Mar.
58.0	58.4	58.8	58.6	57.9	56.7	55.2	53.8	52.4	51.3	50.2	52.3	60.7	42.6	Apr.
67.2	67.9	68.1	67.5	66.5	65.1	63.6	62.1	60.7	59.5	58.3	61.3	70.9	50.9	May.
79.6	79.9	80.2	79.6	78.6	77.1	75.4	73.5	72.0	70.6	69.4	72.9	82.9	63.1	June.
80.4	80.4	80.2	80.0	79.3	77.8	76.0	74.3	72.5	71.0	69.7	73.2	83.1	62.9	July.
80.5	81.0	81.0	80.6	79.3	77.9	76.1	74.2	72.5	70.9	69.5	73.1	83.3	62.6	Aug.
76.0	76.1	76.1	75.3	74.0	72.2	70.5	68.8	67.4	66.3	65.2	68.5	78.2	58.9	Sept.
61.0	61.4	61.3	60.5	59.3	57.5	55.9	54.5	53.3	52.2	52.4	54.0	63.4	44.2	Oct.
46.6	47.0	46.8	46.2	45.5	44.6	43.8	43.1	42.3	41.8	41.2	42.6	50.0	34.6	Nov.
40.0	40.4	40.3	39.8	39.4	38.7	38.3	37.8	37.3	36.8	36.4	37.1	54.9	29.4	Dec.
58.5	58.9	59.0	58.5	57.6	56.4	55.2	53.9	52.8	51.8	51.0	53.1	62.7	43.9	Year.

PORTLAND, OREG.

[h_t = 203 ft.; local time, 3^h 11^m slow.]

38.8	39.8	40.8	41.3	41.6	41.5	41.0	40.3	39.7	39.2	38.7	38.6	44.0	33.9	Jan.
39.3	40.8	41.9	42.6	43.1	43.2	42.9	41.7	40.9	40.1	39.4	39.0	45.3	39.9	Feb.
46.0	47.7	49.0	50.0	50.6	50.8	50.5	49.3	48.0	46.8	45.7	44.9	52.8	38.5	Mar.
50.9	52.4	53.5	54.1	54.7	54.5	54.2	53.2	52.1	50.6	49.6	48.9	57.3	42.0	Apr.
58.5	60.6	61.9	63.1	63.9	64.1	63.8	62.6	61.1	58.8	57.0	56.3	66.1	47.8	May.
61.5	63.2	64.4	65.5	66.3	66.8	66.4	65.5	64.3	62.2	60.5	59.5	69.1	51.3	June.
66.9	69.2	71.2	73.2	74.5	75.4	75.4	74.4	72.9	69.8	67.5	65.6	77.0	55.3	July.
68.4	71.5	73.6	75.7	77.0	77.6	77.5	76.2	74.0	71.3	69.1	67.2	79.1	55.9	Aug.
60.6	62.9	64.4	65.8	66.5	66.4	65.9	64.1	62.5	60.9	59.7	59.1	68.4	51.2	Sept.
53.9	56.0	57.6	59.0	59.4	59.2	58.5	56.7	55.3	54.0	53.0	52.7	61.6	45.9	Oct.
46.9	48.2	49.3	49.9	50.1	49.4	48.7	47.9	47.2	46.6	46.1	46.1	51.5	41.0	Nov.
41.1	41.6	42.4	42.7	42.7	42.3	42.0	41.5	41.1	40.8	40.3	40.5	45.3	36.4	Dec.
52.7	54.5	55.8	56.9	57.5	57.6	57.2	56.1	54.9	53.4	52.2	51.5	59.8	44.9	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

ST. LOUIS, MO.

[λ = 38° 38′ N.; φ = 90° 12′ W.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	28.8	28.2	27.5	27.0	26.7	26.3	26.0	25.7	25.8	26.7	28.3	30.0	31.5
Feb	31.8	31.1	30.5	30.0	29.5	29.0	28.7	28.6	29.0	30.0	31.3	33.0	34.5
Mar	41.2	40.5	39.8	39.3	38.7	38.3	38.0	38.0	38.9	40.4	42.4	44.6	46.3
Apr	54.9	54.1	53.4	52.5	51.7	51.0	50.8	51.6	53.1	55.3	57.3	59.3	60.8
May	61.6	60.6	59.7	59.0	58.2	57.7	58.1	59.6	61.4	63.4	65.4	67.1	68.2
June ...	73.0	72.0	71.1	70.5	69.8	69.3	70.0	71.7	73.8	75.8	78.1	79.9	81.3
July	74.0	73.3	72.4	71.8	71.3	70.7	71.0	72.5	74.6	76.7	78.7	80.5	81.9
Aug	73.9	73.1	72.2	71.3	70.7	70.0	69.8	70.8	72.9	75.3	77.9	80.1	81.5
Sept	68.9	67.9	67.0	66.3	65.4	64.8	64.4	64.9	66.8	70.1	73.1	75.7	77.2
Oct	55.0	54.0	53.1	52.2	51.4	50.7	50.1	50.2	51.4	54.3	57.5	60.2	62.2
Nov	41.3	40.7	40.1	39.5	38.9	38.4	38.0	37.8	38.3	39.7	41.8	43.7	45.1
Dec	36.2	35.8	35.5	35.1	34.7	34.5	34.3	34.2	34.3	35.2	36.6	38.3	39.7
Year	53.4	52.6	51.9	51.2	50.6	50.1	49.9	50.5	51.7	53.6	55.7	57.7	59.2

ST. PAUL, MINN.

[λ = 44° 58′ N.; φ = 93° 3′ W.]

Jan	10.3	9.7	9.0	8.4	7.9	7.3	6.8	6.6	6.5	6.9	8.0	10.0	11.9
Feb	12.6	11.9	11.3	10.9	10.3	9.8	9.2	8.9	8.8	9.6	11.7	13.8	15.8
Mar	26.3	25.4	24.7	24.0	23.3	22.8	22.2	21.9	22.5	24.3	26.6	28.7	30.4
Apr	43.3	42.6	41.7	41.0	40.5	39.8	39.4	40.1	41.3	43.4	45.7	47.6	49.4
May	53.3	52.1	51.1	50.1	49.4	48.8	49.0	50.8	52.8	55.1	57.2	59.1	60.5
June ...	64.7	63.8	62.8	62.0	61.2	60.6	61.0	63.2	65.1	67.4	69.6	71.3	72.8
July	67.5	66.3	65.1	64.1	63.1	62.4	62.4	65.2	67.9	70.8	73.5	75.5	77.1
Aug	65.4	64.2	63.2	62.4	61.6	60.7	60.3	61.7	64.5	68.3	71.3	73.8	75.7
Sept	59.9	59.0	58.3	57.5	56.8	55.9	55.2	55.4	57.5	60.8	64.3	67.1	69.1
Oct	45.3	44.6	44.0	43.4	42.7	42.2	41.7	41.5	42.3	44.8	47.7	50.4	52.4
Nov	27.7	27.2	26.6	26.0	25.4	25.1	24.7	24.3	24.2	25.2	27.1	29.2	31.1
Dec	20.7	20.4	20.0	19.5	19.1	18.7	18.3	18.2	18.0	18.3	19.4	21.0	22.4
Year ...	41.4	40.6	39.8	39.1	38.4	37.8	37.5	38.2	39.3	41.2	43.5	45.6	47.4

SALT LAKE CITY, UTAH.

[λ = 40° 46′ N.; φ = 114° 54′ W.]

Jan	26.5	26.1	25.8	25.7	25.3	25.3	25.7	26.3	24.8	24.7	25.4	26.9	29.2
Feb	27.7	27.3	27.0	26.8	26.8	26.4	26.1	25.9	25.5	25.5	26.9	28.9	31.2
Mar	38.9	38.1	37.6	37.0	36.6	36.4	36.0	35.7	35.4	36.6	38.8	41.3	43.2
Apr	47.0	46.2	45.4	44.7	44.2	43.6	42.9	42.5	43.0	45.0	48.0	50.4	52.1
May	55.8	55.0	54.2	53.1	52.4	51.5	51.0	51.3	52.8	55.8	58.8	60.9	62.6
June ...	62.3	60.8	59.8	58.3	57.4	56.7	55.8	56.6	58.8	62.2	65.6	68.3	70.1
July	71.8	70.2	69.1	67.9	67.0	65.8	65.2	65.6	67.7	71.2	75.4	78.5	80.9
Aug	72.4	70.8	69.6	68.8	67.6	66.7	65.6	65.1	66.7	70.2	74.7	78.7	81.5
Sept	61.5	60.5	59.8	58.9	58.3	57.5	56.8	56.4	56.9	60.0	64.1	67.9	70.4
Oct	49.9	49.4	48.7	48.2	47.7	47.1	46.1	46.2	46.2	48.4	52.1	55.9	58.7
Nov	39.6	39.2	38.4	38.1	37.9	37.8	37.3	37.1	36.6	37.2	39.3	42.8	45.3
Dec	29.1	28.7	28.6	28.4	28.2	27.9	27.7	27.5	27.2	27.1	27.9	29.7	31.6
Year ...	48.5	47.8	47.0	46.3	45.8	45.2	44.7	44.7	45.1	47.0	49.8	52.5	54.7

SAN DIEGO, CAL.

[λ = 32° 43′ N.; φ = 117° 10′ W.]

Jan	51.2	50.9	50.1	49.6	49.2	48.8	48.4	48.1	48.0	47.8	50.2	54.0	57.4
Feb	51.7	51.4	51.0	50.6	50.1	49.7	49.4	49.2	49.0	49.2	52.0	54.4	57.0
Mar	53.1	52.7	52.2	52.0	51.6	51.4	51.1	50.8	50.6	51.6	54.4	56.3	58.1
Apr	55.1	54.5	54.0	53.7	53.4	53.0	52.8	52.6	52.7	54.9	57.3	59.2	61.1
May	58.9	58.5	58.1	57.9	57.7	57.5	57.3	57.1	57.7	59.1	60.7	61.9	63.2
June ...	60.8	60.2	59.8	59.7	59.5	59.3	59.0	58.9	59.8	61.0	62.6	64.0	65.2
July	64.2	63.9	63.4	63.4	63.1	63.0	62.9	62.8	63.2	64.3	65.9	67.4	68.9
Aug	66.8	66.5	66.2	66.0	65.9	65.8	65.7	65.6	65.8	66.9	68.5	70.0	71.5
Sept	64.6	64.2	63.7	63.4	63.2	63.1	62.9	62.7	62.7	64.0	66.1	68.0	70.1
Oct	61.0	60.6	60.2	60.0	59.6	59.3	59.0	58.7	58.5	59.9	62.6	64.8	67.0
Nov	56.5	55.8	55.1	54.6	54.2	54.0	53.7	53.5	53.1	53.8	57.5	60.2	63.0
Dec	52.4	51.9	51.2	50.9	50.5	50.2	49.7	49.5	49.2	49.3	52.1	55.5	58.4
Year	58.0	57.6	57.1	56.8	56.5	56.3	56.0	55.8	55.9	56.8	59.2	61.3	63.4

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

ST. LOUIS, MO.

[h_t = 110 ft.; local time, 1h 1m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891–95.
32.9	33.9	34.6	34.5	33.9	32.9	32.1	31.5	30.8	30.0	29.3	29.8	37.1	22.5	Jan.
35.8	36.9	37.5	37.7	37.4	36.4	35.5	34.8	34.2	33.4	32.5	32.9	40.2	25.5	Feb.
47.7	48.7	49.4	49.5	49.1	48.0	46.7	45.6	44.6	43.7	42.8	43.4	51.9	35.5	Mar.
62.1	63.2	63.5	63.4	63.0	61.9	60.4	59.2	58.0	57.0	56.2	57.2	65.8	48.9	Apr.
69.5	70.5	71.1	70.9	70.1	69.1	67.7	66.3	65.0	63.8	62.7	64.4	73.3	55.8	May.
82.5	83.0	83.2	83.0	82.4	81.3	79.8	78.2	76.7	75.4	74.3	76.5	85.5	67.7	June.
82.6	83.2	83.5	83.4	83.0	81.9	80.7	78.9	77.4	76.3	75.3	77.3	86.1	69.0	July.
82.8	83.5	84.0	83.9	83.1	82.0	80.3	78.6	77.2	75.8	74.7	76.9	86.0	68.1	Aug.
78.6	79.5	80.0	79.7	78.8	77.0	75.2	73.7	72.2	70.8	69.8	72.0	81.7	63.0	Sept.
63.9	65.0	65.5	65.3	64.2	62.4	60.8	59.3	58.1	56.8	55.7	57.5	67.3	48.5	Oct.
46.5	47.3	47.7	47.4	46.6	45.5	44.7	43.8	42.9	42.2	41.6	42.5	49.8	35.2	Nov.
41.0	41.8	42.0	41.8	41.0	40.0	39.2	38.6	37.9	37.3	36.7	37.6	44.4	30.8	Dec.
60.5	61.4	61.8	61.7	61.0	59.9	58.6	57.4	56.2	55.2	54.3	55.7	64.1	47.5	Year.

ST. PAUL, MINN.

[h_t = 114 ft.; local time, 1h 12m slow.]

13.6	14.8	15.6	15.8	15.2	14.4	13.6	12.9	12.1	11.3	10.5	10.8	18.0	2.3	Jan.
17.2	18.4	19.2	19.5	19.2	18.2	17.1	16.3	15.5	14.6	14.0	13.9	21.7	4.7	Feb.
31.7	32.7	33.4	33.8	33.7	32.9	31.5	30.5	29.6	28.7	27.8	27.9	35.8	19.1	Mar.
50.9	51.9	52.5	52.8	52.6	52.0	50.5	49.0	47.5	46.2	44.9	46.1	55.0	37.2	Apr.
61.6	62.4	62.6	62.9	62.6	61.9	60.8	59.3	57.6	56.2	54.9	56.3	65.6	46.1	May.
73.3	74.1	74.6	74.8	74.7	74.1	72.8	71.0	69.3	67.6	66.2	68.2	77.4	59.1	June.
78.4	79.3	79.8	79.8	79.6	78.6	77.1	74.8	72.6	70.7	69.2	71.7	81.9	60.6	July.
76.9	77.8	78.1	78.3	77.7	76.5	74.2	71.9	70.0	68.2	66.7	69.6	80.5	58.6	Aug.
70.5	71.5	72.3	72.5	71.7	69.9	67.4	65.2	63.5	62.1	60.9	63.5	74.7	52.9	Sept.
53.8	54.9	55.3	55.2	54.4	52.5	50.7	49.2	47.9	46.7	45.7	47.9	57.7	38.7	Oct.
32.5	33.6	34.0	33.9	33.0	31.9	30.9	30.0	29.3	28.5	27.9	28.7	36.1	20.5	Nov.
23.7	24.6	25.0	24.9	24.3	23.5	22.9	22.3	21.9	21.4	21.0	21.2	27.5	13.6	Dec.
48.7	49.7	50.2	50.4	49.9	48.9	47.5	46.0	44.7	43.5	42.5	43.8	52.7	34.4	Year.

SALT LAKE CITY, UTAH.

[h_t = 83 ft.; local time, 2h 27m slow.]

30.9	31.8	32.5	32.9	32.6	31.5	30.1	29.0	28.3	27.5	27.0	27.9	35.2	21.1	Jan.
32.7	33.5	34.4	34.9	34.9	34.0	32.4	31.2	30.0	29.3	28.6	29.5	37.3	22.0	Feb.
44.6	45.3	45.9	46.0	46.0	45.7	44.6	42.9	41.3	40.4	39.6	40.6	48.9	32.2	Mar.
53.3	54.1	54.8	55.2	55.4	55.2	54.5	53.2	51.3	49.5	48.3	49.2	58.4	38.5	Apr.
64.0	64.8	65.3	65.8	65.9	65.6	64.8	63.5	60.7	58.7	57.4	58.8	68.4	47.4	May.
71.6	72.7	73.3	73.7	74.1	74.2	73.7	72.3	68.6	66.0	64.3	65.7	76.3	52.6	June.
82.4	83.3	84.1	84.3	84.4	84.5	83.5	81.6	77.7	75.4	73.6	75.5	87.0	61.4	July.
83.3	84.4	85.2	85.5	85.3	84.7	83.5	81.1	77.5	75.3	73.7	75.8	87.7	61.6	Aug.
72.0	73.3	73.9	74.2	73.9	72.9	70.8	67.6	65.1	63.4	61.7	64.9	76.3	52.6	Sept.
60.4	61.5	62.2	61.9	61.3	59.9	56.6	54.2	52.8	51.4	50.3	53.2	63.8	42.0	Oct.
47.2	48.2	48.9	48.8	48.0	45.9	43.6	42.4	41.3	40.5	39.9	41.7	50.8	32.8	Nov.
32.9	33.7	34.3	34.3	34.0	32.8	31.6	30.6	29.8	29.2	28.9	30.1	37.0	23.1	Dec.
56.3	57.2	57.9	58.1	58.0	57.2	55.8	54.1	52.0	50.6	49.4	51.1	60.6	40.6	Year.

SAN DIEGO, CAL.

[h_t = 59 ft.; local time, 2h 49m slow.]

59.4	60.6	61.0	61.0	60.6	59.3	57.9	55.9	54.4	52.7	51.9	53.7	63.6	44.3	Jan.
58.7	59.5	59.9	60.0	59.8	58.7	57.7	55.9	54.6	53.4	52.6	54.0	61.9	45.8	Feb.
59.2	59.9	60.1	60.2	59.9	59.1	58.3	56.7	55.6	54.6	54.0	55.1	62.3	47.7	Mar.
62.1	62.8	63.1	63.3	62.9	62.2	61.4	59.5	58.2	57.1	56.3	57.6	65.2	49.8	Apr.
63.9	64.5	64.6	64.4	64.1	63.5	63.0	61.5	60.6	60.0	59.7	60.7	66.5	54.9	May.
66.1	66.6	66.9	67.1	66.9	66.3	65.8	64.2	63.0	62.2	61.7	62.8	68.7	56.7	June.
69.5	70.2	70.4	70.3	70.1	69.5	69.0	67.4	65.9	65.2	65.0	66.2	71.9	60.7	July.
72.2	72.4	72.4	72.5	72.2	71.6	71.0	69.3	68.0	67.4	67.2	68.6	74.4	63.3	Aug.
70.9	71.3	71.4	71.6	71.3	70.5	69.4	67.5	66.6	65.9	65.3	66.7	73.4	60.0	Sept.
68.1	68.5	68.5	68.3	68.0	66.8	65.4	64.0	63.1	62.2	61.5	63.2	70.7	55.8	Oct.
64.5	65.1	65.1	64.8	64.3	63.0	61.2	59.7	58.4	57.2	56.7	58.5	67.4	50.3	Nov.
60.1	60.9	61.2	61.7	60.7	59.5	57.9	56.1	54.7	53.6	52.1	54.5	63.5	46.0	Dec.
64.6	65.2	65.4	65.4	65.1	64.2	63.2	61.5	60.3	59.3	58.7	60.1	67.5	52.9	Year.

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891–1895 (75TH MERIDIAN TIME)—Cont'd.

SAN FRANCISCO, CAL.

[λ=37° 48′ N.; φ=122° 26′ W.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.
Jan	48.9	48.4	47.9	47.6	47.2	46.8	46.4	46.1	45.9	46.0	46.4	47.5	48.7
Feb	50.0	49.6	49.3	48.9	48.6	48.2	47.8	47.6	47.3	47.3	47.8	48.9	50.3
Mar	50.8	50.5	50.2	49.9	49.6	49.3	48.9	48.7	48.6	48.8	49.8	51.1	52.4
Apr	50.9	50.6	50.4	50.1	49.6	49.4	49.3	49.1	49.0	50.0	51.6	53.3	55.1
May	53.6	53.4	53.0	52.7	52.4	52.3	52.0	51.9	52.2	53.4	55.1	56.6	58.2
June	53.6	53.4	53.1	52.8	52.7	52.5	52.3	52.2	52.8	54.5	56.3	58.3	60.0
July	54.4	54.2	54.1	53.7	53.4	53.2	53.1	53.0	53.1	54.2	55.8	57.6	59.4
Aug	55.6	55.4	55.1	54.9	54.7	54.5	54.3	54.2	54.3	55.1	56.4	58.2	59.9
Sept	57.9	57.4	57.2	57.0	56.8	56.6	56.4	56.3	56.1	56.7	58.2	60.1	62.0
Oct	55.9	55.6	55.2	54.9	54.6	54.4	54.1	54.0	53.9	54.2	55.5	57.1	58.9
Nov	55.8	55.2	54.7	54.2	53.8	53.3	52.9	52.7	52.6	52.6	53.4	54.7	56.3
Dec	50.0	49.8	49.5	49.2	48.9	48.6	48.3	47.9	47.8	47.7	48.2	49.0	50.0
Year	53.1	52.8	52.5	52.2	51.9	51.6	51.3	51.1	51.1	51.7	52.9	54.4	55.9

SANTA FE, N. MEX.

[λ=35° 41′ N.; φ=105° 57′ W.]

Jan	25.6	25.1	24.3	23.6	23.1	22.6	22.3	22.0	21.6	22.6	25.7	28.3	30.5
Feb	28.1	27.5	26.9	26.3	25.6	25.2	24.5	24.0	23.7	25.2	27.9	30.1	32.0
Mar	35.9	35.0	34.0	33.4	32.5	31.7	31.1	30.1	30.9	34.2	37.0	39.0	41.1
Apr	44.6	43.7	42.6	41.5	40.4	39.4	38.1	38.1	42.0	45.1	47.4	49.6	51.8
May	52.0	50.9	49.6	48.6	47.4	46.5	45.5	47.3	51.1	53.3	55.3	57.5	59.6
June	61.1	60.1	58.9	57.7	56.4	55.3	54.3	57.1	61.0	63.3	65.3	67.5	69.5
July	64.2	63.4	62.4	61.4	60.5	59.7	58.6	60.5	64.2	66.6	68.9	71.1	73.2
Aug	62.8	61.9	60.8	59.9	59.1	58.2	57.4	57.8	61.3	64.1	66.6	69.0	71.1
Sept	58.3	57.6	56.6	55.6	54.6	53.7	52.7	52.2	55.2	59.1	61.8	64.2	66.2
Oct	47.2	46.5	45.4	44.5	43.5	42.8	41.9	41.1	42.0	46.9	49.9	52.3	54.3
Nov	35.9	35.3	34.4	33.7	33.1	32.6	31.8	31.3	31.3	34.3	38.2	40.8	42.8
Dec	27.1	26.6	26.1	25.5	24.9	24.5	23.9	23.8	23.4	24.6	27.7	30.3	32.1
Year	45.2	44.5	43.5	42.6	41.8	41.0	40.2	40.4	42.3	44.9	47.6	50.0	52.0

SAVANNAH, GA.

[λ=32° 5′ N.; φ=81° 5′ W.]

Jan	46.4	46.0	45.5	45.0	44.6	44.2	43.8	43.8	45.2	47.8	50.5	52.8	54.5
Feb	50.5	49.9	49.4	49.1	48.7	48.3	47.9	48.2	50.0	52.7	45.3	57.4	59.0
Mar	54.7	54.2	53.7	53.1	52.5	52.1	51.8	53.0	55.3	58.1	60.6	62.4	63.8
Apr	61.6	61.0	60.4	59.7	59.2	58.9	59.6	62.5	65.3	68.1	70.1	71.7	72.6
May	67.3	66.7	66.2	65.6	65.1	64.9	66.6	69.4	72.2	74.6	76.5	77.5	78.4
June	73.6	73.1	72.6	72.2	71.7	71.9	73.6	76.5	79.0	81.0	82.6	83.8	84.1
July	75.4	75.0	74.6	74.2	73.9	73.9	75.4	78.2	80.6	82.9	84.6	85.8	86.5
Aug	75.9	75.5	75.2	74.9	74.6	74.5	75.6	78.1	80.7	83.0	84.9	86.2	86.5
Sept	72.7	72.3	71.7	71.4	71.0	70.6	71.0	73.3	75.9	78.4	80.4	81.7	82.5
Oct	62.4	61.7	61.1	60.4	59.9	59.4	59.3	61.1	64.5	68.1	70.6	72.3	73.3
Nov	53.6	53.0	52.5	52.0	51.5	51.1	50.8	51.6	54.2	57.8	60.6	62.8	64.1
Dec	49.6	49.0	48.4	47.9	47.3	47.1	46.9	47.4	49.6	53.2	56.4	58.6	60.2
Year	62.0	61.4	60.9	60.5	60.0	59.7	60.2	61.9	64.5	67.1	69.4	71.1	72.1

WASHINGTON, D. C.

[λ=38° 54′ N.; φ=77° 3′ W.]

Jan	30.3	29.9	29.5	29.3	29.1	28.7	28.5	28.7	29.9	31.8	33.5	35.0	36.2
Feb	32.5	32.0	31.7	31.3	30.9	30.7	30.6	31.1	32.4	34.1	35.8	37.3	38.5
Mar	38.6	38.1	37.5	36.9	36.4	35.9	35.8	37.1	38.8	40.6	42.4	44.0	45.3
Apr	49.3	48.6	47.9	47.3	46.7	46.4	47.4	50.2	52.2	54.2	56.1	57.6	58.7
May	57.9	57.3	56.5	55.8	55.3	55.5	57.4	60.1	62.2	64.1	66.1	67.7	68.9
June	67.6	67.0	66.4	65.8	65.3	65.9	68.2	71.1	73.4	75.7	77.3	78.9	79.9
July	69.5	68.8	68.2	67.6	67.1	67.3	69.3	72.1	74.5	76.7	78.8	80.3	81.4
Aug	69.7	69.2	68.4	67.9	67.3	67.0	68.7	71.7	74.4	76.9	78.8	80.5	81.6
Sept	64.3	63.6	62.9	62.3	61.8	61.4	62.4	65.3	68.0	70.6	72.9	74.7	75.9
Oct	50.1	49.4	49.1	48.6	48.3	48.0	48.0	50.6	53.5	56.5	58.8	60.8	62.1
Nov	41.5	41.2	40.7	40.3	39.9	39.6	39.4	40.3	42.3	44.5	46.7	48.5	49.4
Dec	35.0	34.5	34.2	33.5	33.3	33.1	32.9	33.5	35.3	37.6	39.7	41.4	42.8
Year	50.5	50.0	49.4	48.9	48.4	48.3	49.0	51.0	53.1	55.3	57.2	58.9	60.1

AVERAGE TEMPERATURE (DEGREES FAHRENHEIT) FOR THE FIVE YEARS 1891-1895 (75TH MERIDIAN TIME)—Cont'd.

SAN FRANCISCO, CAL.

[h = 161 ft.; local time, 3h 10m slow.]

2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Mid.	Mean.	Mean max.	Mean min.	1891-95.
49.9	51.1	52.1	52.8	53.1	52.7	51.6	50.8	50.3	49.8	49.3	49.1	55.1	44.0	Jan.
51.6	53.1	54.3	54.8	54.7	54.4	53.4	52.3	51.5	51.0	50.6	50.6	56.9	45.6	Feb.
53.7	54.9	55.5	55.8	55.6	55.1	54.3	53.0	52.1	51.6	51.2	51.7	58.4	46.9	Mar.
56.5	57.1	57.6	57.6	57.0	56.1	55.2	53.9	52.7	52.0	51.4	52.8	60.2	47.4	Apr.
59.4	59.9	60.2	60.0	59.7	58.9	58.0	56.9	55.6	54.5	54.0	55.6	62.5	50.4	May.
61.1	61.3	61.4	61.2	60.8	59.8	58.9	57.7	56.2	54.8	54.2	56.3	64.4	50.8	June.
60.4	60.8	60.8	61.0	60.5	59.7	58.7	57.4	56.2	55.2	54.7	56.5	63.9	51.7	July.
61.4	62.4	62.6	62.4	61.8	60.9	59.7	58.3	57.1	56.4	56.1	57.6	65.1	53.0	Aug.
63.6	64.8	65.3	65.1	64.3	63.3	61.9	60.5	59.6	59.0	58.2	59.7	67.5	54.6	Sept.
60.8	62.2	63.0	63.1	62.3	60.9	59.2	57.8	57.2	56.7	56.2	57.4	65.6	52.4	Oct.
58.2	59.9	61.6	62.3	62.2	60.9	59.0	58.2	57.6	57.0	56.4	56.5	64.0	50.6	Nov.
51.0	51.8	52.8	53.3	53.5	53.1	52.2	51.7	51.1	50.7	50.3	50.3	54.9	45.7	Dec.
57.3	58.3	58.9	59.1	58.8	58.0	56.8	55.7	54.8	54.1	53.6	54.5	61.5	49.4	Year.

SANTA FE, N. MEX.

[h = 47 ft.; local time, 2h 4m slow.]

32.2	33.6	34.4	35.3	35.1	33.6	29.6	28.3	27.4	26.8	26.5	27.5	37.4	19.1	Jan.
33.7	35.0	36.2	36.9	37.0	36.2	33.8	31.5	30.3	29.5	28.9	29.8	39.2	21.5	Feb.
41.9	43.3	44.5	45.3	45.6	44.8	43.0	40.2	38.1	36.7	35.7	37.2	47.5	27.9	Mar.
53.7	55.2	56.6	57.4	57.5	56.9	55.4	52.6	49.6	47.6	46.3	48.0	59.6	36.0	Apr.
61.2	62.6	63.5	63.8	63.8	63.1	62.1	59.9	56.9	54.6	53.6	55.4	66.9	43.8	May.
71.4	72.8	73.7	74.5	74.6	73.5	72.5	70.7	67.2	64.3	62.8	65.2	76.6	52.9	June.
74.9	76.0	75.7	75.8	75.9	74.7	73.1	71.0	68.5	66.7	65.5	68.0	79.7	57.3	July.
72.6	73.4	73.7	73.9	73.6	72.3	71.1	68.5	66.0	64.7	63.6	66.0	77.2	56.0	Aug.
68.1	69.5	70.2	70.6	70.4	69.7	67.5	63.5	61.5	59.9	59.0	61.6	72.8	50.8	Sept.
56.0	57.7	58.8	59.3	59 1	57.7	54.0	51.1	49.9	48.7	47.7	49.9	61.1	39.4	Oct.
44.6	46.2	47.4	47.8	47.4	44.6	40.9	39.0	38.0	37.2	36.5	38.6	49.5	28.9	Nov.
33.6	34.9	35.9	36.3	35.7	33.1	30.2	28.9	28.3	27.8	27.3	28.9	38.0	21.0	Dec.
53.7	55.0	55.9	56.4	56.3	55.0	52.8	50.4	48.5	47.0	46.1	48.0	58.8	37.9	Year.

SAVANNAH, GA.

[h = 63 ft.; local time, 24m slow.]

55.6	56.2	55.8	54.7	52.6	50.9	49.8	49.0	48.2	47.6	46.9	49.1	57.9	40.8	Jan.
60.1	60.5	59.8	58.7	56.7	54.7	53.4	52.6	52.1	51.6	51.1	53.3	62.3	45.3	Feb.
64.6	64.7	64.2	63.1	61.4	59.1	57.8	57.0	56.4	55.9	55.3	57.7	67.0	49.5	Mar.
72.9	72.7	72.0	70.8	69.0	66.7	65.0	64.1	63.5	62.9	62.3	65.5	75.4	57.2	Apr.
78.6	78.2	77.2	75.9	74.4	72.6	70.6	69.7	69.0	68.5	67.9	71.4	81.0	63.2	May.
84.0	83.6	82.5	81.2	79.8	78.3	76.8	76.0	75.4	74.8	74.3	77.6	87.0	70.1	June.
86.1	85.3	83.7	82.0	80.6	79.3	78.0	77.3	76.8	76.3	75.8	79.3	89.3	72.1	July.
86.5	85.5	84.4	82.7	81.2	79.6	78.4	77.6	77.0	76.6	76.3	79.6	89.2	72.5	Aug.
82.6	82.1	81.3	80.2	78.6	76.6	75.5	74.7	74.1	73.6	73.0	76.0	84.5	69.3	Sept.
73.9	74.0	73.1	71.5	69.1	67.1	65.9	65.0	64.2	63.3	62.6	66.0	75.5	57.5	Oct.
64.7	64.8	64.0	62.2	59.8	58.3	57.2	56.4	55.6	54.9	54.1	57.0	66.1	48.4	Nov.
61.0	61.2	60.5	58.7	56.3	54.8	53.6	52.6	51.9	51.0	50.2	53.1	62.8	44.3	Dec.
72.6	72.4	71.5	70.1	68.3	66.5	65.2	64.3	63.7	63.1	62.5	65.5	74.8	57.5	Year.

WASHINGTON, D. C.

[h = 59 ft.; local time, 8m slow.]

37.1	37.5	37.4	36.7	35.6	34.5	33.6	32.8	32.3	31.5	30.9	32.5	39.7	25.5	Jan.
39.7	40.4	40.4	39.8	38.7	37.4	36.3	35.3	34.5	33.8	33.1	34.9	42.4	27.6	Feb.
46.5	47.2	47.4	46.9	45.9	44.3	43.0	41.9	41.2	40.4	39.6	41.3	49.7	33.4	Mar.
59.8	60.3	60.6	60.1	59.0	57.3	55.6	53.9	52.6	51.7	50.5	53.5	62.7	44.3	Apr.
69.6	70.1	70.2	69.7	68.6	66.3	64.0	62.3	61.2	60.0	59.1	62.8	72.8	53.3	May.
80.9	81.0	80.8	80.1	78.7	76.9	74.2	72.3	70.9	69.7	68.7	73.2	83.4	64.0	June.
82.1	82.2	81.8	80.8	79.6	77.7	75.2	73.3	72.3	71.2	70.3	74.5	84.7	65.5	July.
82.6	82.6	82.5	81.7	80.2	77.7	75.4	73.7	72.3	71.3	70.4	74.7	84.8	65.8	Aug.
76.8	76.9	76.8	75.8	73.8	70.9	68.8	67.4	66.3	65.5	64.6	68.7	78.7	59.8	Sept.
63.1	63.4	63.1	62.0	59.2	56.5	54.7	53.3	52.4	51.4	50.6	54.7	65.0	45.5	Oct.
50.3	50.5	50.0	48.8	47.0	45.6	44.4	43.5	42.8	42.1	41.5	44.2	52.4	36.2	Nov.
43.9	44.4	44.1	42.9	41.2	39.7	38.5	37.6	36.9	36.0	35.4	37.8	46.2	30.1	Dec.
61.0	61.4	61.3	60.4	59.0	57.1	55.3	53.9	53.0	52.0	51.2	54.4	63.5	45.9	Year.

Blank page retained for pagination

Blank page retained for pagination

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891–1895.

BISMARCK, N. DAK.

[λ = 46° 47′ N.; φ = 100° 38′ W.] [Seventy-fifth Meridian Time.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	8.5	8.5	8.4	8.5	8.4	8.3	7.7	8.0	7.9	7.6	8.1	9.3	11.0	12.0	12.3	12.4	12.1
Feb	8.4	8.3	8.3	8.6	8.8	8.9	8.8	8.8	8.9	9.1	9.9	11.0	12.1	12.7	13.4	13.4	13.0
Mar	8.9	8.6	8.5	8.1	8.0	8.0	8.3	8.6	8.7	9.6	10.5	12.0	13.1	14.0	14.1	14.3	14.4
Apr	10.9	10.7	10.7	10.5	10.3	10.7	10.7	10.8	12.1	13.3	14.2	14.9	15.9	16.8	17.4	17.2	16.9
May	9.1	9.1	8.9	8.8	8.6	8.1	8.0	9.0	10.4	11.8	13.3	14.5	15.1	15.6	15.7	15.9	15.7
June	8.3	8.3	7.9	7.6	8.0	8.0	7.7	8.0	9.4	10.9	11.8	12.5	13.4	13.8	14.5	14.2	13.9
July	7.4	7.4	6.6	6.4	6.3	6.3	6.3	6.3	7.3	8.8	10.5	11.6	12.3	12.7	12.9	12.7	12.3
Aug.	7.6	6.8	6.3	6.2	6.2	6.2	5.8	5.7	6.2	7.6	9.1	10.5	11.5	12.0	12.2	12.0	12.3
Sept	8.3	7.8	7.3	7.5	7.6	7.2	7.1	7.2	7.6	9.6	11.7	13.1	13.9	14.8	15.1	15.1	15.0
Oct	8.1	7.7	8.2	8.1	8.4	8.8	9.0	8.6	8.4	9.1	10.9	12.7	13.8	14.8	15.3	15.4	15.0
Nov.	8.5	8.8	8.9	8.7	8.7	9.1	9.1	9.1	9.1	9.3	10.6	11.3	12.5	13.7	14.0	13.9	13.0
Dec	8.4	8.5	8.5	8.2	8.9	8.5	7.9	8.0	8.0	7.5	7.9	8.7	9.8	11.0	11.4	11.3	11.0
Year	8.5	8.4	8.2	8.1	8.2	8.2	8.0	8.2	8.7	9.5	10.7	10.8	12.9	13.7	14.0	14.0	13.7

BOSTON, MASS.

[λ = 42° 21′ N.; φ = 71° 4′ W.]

Jan	11.5	11.1	10.8	10.8	11.0	11.2	11.1	11.2	11.8	12.3	12.8	13.3	13.5	13.4	13.4	13.3	12.8
Feb	12.4	12.4	12.2	12.1	12.0	12.2	12.1	12.3	13.0	13.7	14.1	14.6	14.7	14.6	14.8	14.5	14.0
Mar	12.4	12.1	11.9	11.8	11.8	12.1	12.3	13.0	14.1	14.6	15.3	15.9	16.1	16.1	16.2	16.0	15.5
Apr	11.1	10.9	10.5	10.2	10.6	10.7	11.3	11.7	12.3	12.8	13.3	13.9	11.4	14.5	14.8	14.6	14.3
May	9.9	9.7	9.8	9.6	9.5	9.7	10.2	10.6	11.4	11.9	12.1	12.9	13.4	13.4	13.7	13.5	13.3
June	9.1	8.9	8.8	8.8	8.9	8.8	9.0	9.5	9.9	10.3	10.8	11.4	11.9	12.4	12.6	12.5	12.0
July	8.9	8.8	8.7	8.4	8.2	7.8	8.1	8.4	9.1	9.7	10.3	11.6	12.0	12.2	12.4	12.0	11.4
Aug.	8.5	8.3	8.2	8.3	8.1	8.1	8.5	8.9	9.4	9.9	10.9	11.2	11.7	12.0	12.0	12.2	11.6
Sept	8.6	8.4	8.4	8.4	8.6	8.5	8.3	8.9	9.6	10.4	11.0	11.4	11.6	11.8	12.0	11.7	11.1
Oct	10.2	10.2	10.3	10.4	10.5	10.4	10.5	11.0	12.1	12.9	13.4	13.9	13.8	13.7	13.6	13.3	12.3
Nov.	11.5	11.3	10.9	10.9	10.6	10.9	11.0	11.4	12.1	12.3	12.6	13.1	13.4	13.5	13.4	13.1	11.8
Dec	12.5	11.9	12.3	12.0	11.8	12.0	11.9	11.7	12.3	12.9	13.0	13.4	13.4	13.1	13.3	12.7	12.0
Year	10.6	10.3	10.2	10.1	10.1	10.2	10.4	10.7	11.4	12.0	12.5	13.0	13.3	13.4	13.5	13.3	12.7

BUFFALO, N. Y.

[λ = 42° 53′ N.; φ = 78° 53′ W.]

Jan	13.9	13.2	13.3	13.5	13.2	12.9	13.4	13.1	13.4	13.4	13.8	14.2	14.5	14.6	14.8	14.6	14.3
Feb	12.6	12.8	13.2	12.8	13.1	12.9	13.2	12.7	13.1	13.9	14.0	14.3	14.7	14.7	15.1	15.3	14.8
Mar	11.7	11.4	11.4	11.3	11.2	11.6	11.9	11.8	12.3	12.9	13.3	13.7	14.2	14.4	14.5	14.2	13.8
Apr	8.9	8.8	9.0	9.2	9.3	9.2	9.5	9.8	10.7	11.0	11.7	12.4	12.9	12.9	13.1	12.8	12.4
May	8.5	8.3	8.4	8.3	8.1	8.3	8.6	9.3	10.1	10.6	11.1	11.1	11.5	11.5	11.5	11.2	10.8
June	6.8	6.9	7.0	6.9	7.0	7.0	7.6	8.2	8.7	9.3	10.0	10.4	10.8	10.9	10.6	10.4	10.0
July	7.4	6.9	6.9	7.1	7.2	7.2	7.8	8.4	9.3	10.1	11.0	11.8	12.6	12.7	12.6	12.3	11.8
Aug.	6.7	6.7	6.7	6.5	6.6	6.7	6.9	7.2	7.8	8.5	9.6	10.2	10.8	10.7	10.6	10.3	9.6
Sept	8.6	8.6	8.8	8.7	8.6	8.8	8.4	8.7	9.5	10.2	10.5	10.9	11.5	11.8	11.9	11.2	10.7
Oct	11.0	10.7	10.7	10.9	11.0	11.0	11.3	11.3	11.9	12.6	13.0	13.4	13.7	13.8	13.9	13.8	13.3
Nov.	14.2	14.0	13.6	13.0	13.0	13.0	13.3	13.4	13.8	14.1	14.3	14.8	15.4	14.9	15.0	14.8	14.3
Dec	14.2	14.1	14.0	14.0	14.1	14.4	14.2	13.7	14.2	14.6	15.3	16.0	16.3	16.6	16.7	16.1	16.0
Year	10.4	10.2	10.2	10.2	10.2	10.2	10.5	10.6	11.2	11.8	12.3	12.8	13.2	13.3	13.4	13.1	12.6

CHICAGO, ILL.

[λ = 41° 53′ N.; φ = 87° 37′ W.]

Jan	18.1	17.4	17.0	16.9	16.8	16.5	17.0	16.3	16.7	17.4	17.7	17.8	18.6	18.5	18.8	18.9	18.5
Feb	19.3	18.6	18.5	18.3	18.5	18.3	18.8	18.1	18.8	19.3	19.6	20.0	20.1	19.7	20.1	20.6	20.4
Mar	19.4	18.9	19.1	19.3	19.0	19.2	19.4	19.2	19.6	19.4	19.9	20.4	21.2	21.3	21.9	22.2	21.9
Apr	18.0	17.6	17.9	17.9	17.9	18.2	18.0	18.2	18.8	19.4	19.3	19.4	19.9	20.0	20.8	20.9	20.8
May	17.0	16.8	17.2	17.5	17.7	17.7	17.0	16.6	17.0	17.5	18.1	18.3	19.1	19.2	19.3	19.2	19.5
June	13.9	14.5	14.5	14.5	14.1	14.1	14.0	13.7	13.6	13.5	14.1	14.4	14.8	14.5	14.6	14.9	14.8
July	13.6	13.6	13.9	13.6	13.8	14.0	14.1	13.3	13.1	13.4	14.1	14.6	15.5	15.4	15.5	15.5	15.5
Aug.	13.7	13.4	13.8	13.6	13.5	13.3	13.3	12.4	12.0	12.0	12.9	13.4	14.1	14.6	15.2	15.9	15.6
Sept	17.0	16.9	17.0	17.1	17.3	17.1	17.1	16.4	15.6	15.7	15.8	16.7	17.5	17.4	18.1	18.1	17.8
Oct	17.5	17.2	17.5	17.2	17.1	16.8	16.9	16.8	16.8	17.0	17.1	17.6	18.9	18.5	18.7	18.5	18.2
Nov.	18.0	17.7	17.8	18.2	18.2	18.4	18.7	18.2	18.6	18.8	19.1	19.0	19.3	18.6	18.8	18.9	18.5
Dec	19.7	19.0	19.0	18.6	19.0	18.8	19.4	18.8	19.1	19.1	19.2	19.3	20.0	19.6	19.7	19.3	19.0
Year	17.1	16.8	16.9	16.9	16.9	16.9	17.0	16.5	16.6	16.9	17.2	17.6	18.2	18.1	18.6	18.6	18.4

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891–1895.

BISMARCK, N. DAK.

[h_a = 29 ft.; reduction factor, 1.1; local time, 1h 42m slow.] [Seventy-fifth Meridian Time.]

6h	7h	8h	9h	10h	11h	Mid.	Mean.	Red. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1891–95.
10.9	9.7	8.8	8.5	8.8	9.1	8.8	9.3	10.2	100	25	76	94	32	18	30	336	32	Jan.
12.4	11.0	9.9	9.3	8.7	8.4	8.6	10.0	11.0	79	22	59	103	27	34	53	282	22	Feb.
14.4	13.3	11.3	10.0	9.3	9.1	9.0	10.6	11.7	83	67	85	108	45	52	35	237	30	Mar.
16.8	16.0	14.6	12.6	11.6	11.3	11.4	13.3	14.6	88	80	136	168	31	34	25	144	13	Apr.
15.1	14.7	14.1	11.8	10.6	9.8	9.5	11.8	13.0	106	89	148	103	66	19	34	163	12	May.
13.7	13.0	11.9	10.1	9.1	8.9	8.8	10.6	11.7	92	65	81	96	96	49	50	181	10	June.
11.8	11.3	10.2	8.8	8.2	8.4	8.0	9.2	10.1	91	58	87	121	123	38	37	178	12	July.
12.3	11.7	10.5	9.3	8.8	8.3	8.1	8.9	9.8	109	76	107	96	108	40	50	148	11	Aug.
14.3	12.8	10.9	9.8	9.6	9.2	8.7	10.5	11.5	67	36	77	111	87	36	48	248	11	Sept.
13.7	10.8	9.0	8.5	8.2	7.8	8.2	10.4	11.4	72	30	91	73	62	38	74	284	15	Oct.
11.9	10.2	9.6	9.2	8.6	8.6	8.7	10.2	11.2	78	32	65	94	64	40	43	276	14	Nov.
9.7	8.6	8.5	8.6	8.4	8.0	8.3	8.9	9.8	70	26	92	73	34	41	83	307	19	Dec.
13.1	11.9	10.8	9.7	9.2	8.9	8.8	10.3	11.3	1,038	593	1,136	1,222	806	443	526	2,781	221	Year.

BOSTON, MASS.

[h_a = 181 ft.; reduction factor, 0.55; local time, 16m fast.]

12.3	12.4	12.0	12.0	11.7	11.9	11.8	12.1	6.6	83	41	23	28	42	122	237	167	.4	Jan.
13.7	13.1	12.9	12.9	12.8	13.0	13.0	13.2	7.3	67	68	34	17	40	90	209	152	.2	Feb.
14.7	13.4	12.6	12.8	12.6	12.2	12.5	13.7	7.5	54	72	76	31	46	99	200	165	.0	Mar.
13.6	12.2	11.5	11.6	11.2	11.1	11.3	12.3	6.8	59	68	95	38	58	124	176	101	.0	Apr.
12.9	11.7	11.0	11.1	10.9	10.4	10.1	11.4	6.3	35	81	124	36	80	153	139	97	.0	May.
11.1	10.5	9.9	10.1	9.8	9.5	9.2	10.2	5.6	40	97	134	33	52	166	142	54	.2	June.
10.9	10.0	9.4	9.4	9.4	9.3	9.3	9.8	5.4	21	35	95	36	62	220	178	98	.0	July.
10.5	9.8	9.2	9.1	8.8	8.6	8.5	9.7	5.3	55	50	108	55	62	171	136	107	.2	Aug.
10.4	10.1	10.0	9.8	9.5	9.2	9.0	9.9	5.4	48	61	73	33	60	176	153	115	.6	Sept.
11.4	11.1	11.1	11.3	10.9	10.6	10.6	11.6	6.4	55	81	60	25	47	145	177	155	.2	Oct.
11.6	11.6	11.5	11.5	11.4	11.3	11.3	11.8	6.5	72	43	41	37	61	128	197	141	.2	Nov.
12.2	12.4	12.4	12.6	12.4	12.5	12.5	12.5	6.9	84	27	26	23	37	144	226	177	.2	Dec.
12.1	11.5	11.1	11.2	11.0	10.8	10.8	11.5	6.3	673	724	888	393	648	1,737	2,169	1,530	2.2	Year.

BUFFALO, N. Y.

[h_a = 108 ft.; reduction factor, 0.7; local time, 15m slow.]

14.4	14.1	13.6	13.4	13.7	13.6	13.7	13.8	9.7	18	72	53	50	51	212	139	148	0	Jan.
14.7	14.3	13.5	13.1	12.9	13.0	12.7	13.6	9.5	18	101	44	49	35	164	158	107	3	Feb.
13.1	12.6	12.0	11.4	11.5	11.4	11.8	12.5	8.8	51	127	61	42	39	169	126	129	0	Mar.
11.7	11.0	10.0	9.3	9.0	8.9	9.0	10.5	7.3	29	90	94	61	32	203	102	108	1	Apr.
10.8	9.9	9.0	8.5	8.6	8.2	8.4	9.6	6.7	35	77	69	31	44	255	134	96	2	May.
9.7	8.6	7.8	7.2	7.0	6.8	6.8	8.4	5.9	27	97	42	40	59	271	112	70	.3	June.
11.1	10.4	8.8	8.2	7.8	7.7	7.5	9.4	6.6	41	64	24	44	65	264	126	113	3	July.
9.3	8.4	7.7	7.1	6.8	6.6	6.7	8.1	5.7	47	96	44	51	69	196	107	124	10	Aug.
10.3	9.7	9.2	9.1	9.1	8.8	8.5	9.7	6.8	36	73	62	66	83	187	96	111	6	Sept.
12.8	12.4	11.8	11.4	11.7	11.6	11.6	12.1	8.5	26	77	52	60	67	166	109	184	1	Oct.
14.1	13.8	13.3	13.4	13.4	13.4	13.9	13.9	9.7	33	71	54	83	75	145	102	158	0	Nov.
15.7	15.6	15.3	14.9	14.2	14.3	14.3	15.0	10.5	31	42	51	62	67	199	114	175	1	Dec.
12.3	11.7	11.0	10.6	10.5	10.4	10.4	11.4	8.0	391	987	650	641	687	2,431	1,425	1,522	31	Year.

CHICAGO, ILL.

[h_a = 274 ft.; reduction factor, 0.46; local time, 50m slow.]

18.0	17.9	17.6	17.8	17.9	17.7	17.9	17.7	8.1	40	44	19	73	80	170	137	181	1	Jan.
20.4	19.8	19.1	19.2	19.0	19.3	19.5	19.3	8.9	41	75	25	77	53	126	148	132	0	Feb.
21.5	20.5	19.6	19.9	19.9	20.1	19.6	20.1	9.2	54	168	43	100	60	133	75	113	0	Mar.
20.3	19.6	18.5	18.5	18.4	18.0	18.0	18.9	8.7	46	216	65	113	55	101	65	57	2	Apr.
19.0	17.9	16.4	15.9	16.3	16.6	16.3	17.6	8.1	55	217	35	107	84	131	75	40	0	May.
14.7	14.2	13.3	12.6	12.5	13.0	13.5	14.0	6.4	46	163	61	126	79	118	76	50	1	June.
14.7	14.4	13.3	12.3	12.4	12.6	12.9	14.0	6.4	36	199	51	112	67	148	80	47	2	July.
15.3	14.9	13.8	13.7	13.6	13.4	13.5	13.8	6.3	63	187	65	116	79	128	60	45	1	Aug.
16.7	15.3	14.8	15.1	15.7	16.8	17.1	16.7	7.7	42	84	33	112	130	174	71	71	3	Sept.
16.9	16.4	16.5	17.0	17.3	17.6	17.3	17.4	8.0	84	70	16	80	124	161	96	113	0	Oct.
18.0	18.1	17.9	18.2	18.3	18.1	18.2	18.4	8.5	58	66	16	73	120	135	107	145	0	Nov.
19.2	19.6	19.4	20.0	20.2	20.3	19.7	19.4	8.9	44	52	11	63	120	202	126	126	0	Dec.
17.9	17.4	16.7	16.7	16.8	16.9	17.0	17.3	7.9	609	1,542	439	1,150	1,050	1,727	1,113	1,121	11	Year.

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891-1895—Continued.

CINCINNATI, OHIO.

[λ=39° 6′ N.; φ=84° 30′ W.] [Seventy-fifth Meridian Time.]

1891-95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	7.4	7.2	7.0	7.0	7.0	7.3	7.0	7.0	7.3	8.1	8.7	9.1	9.5	9.5	9.7	9.5	9.2
Feb	8.0	7.7	7.7	7.9	7.8	7.8	7.7	7.6	8.4	9.0	9.2	9.6	9.9	10.1	10.4	10.6	10.5
Mar	7.3	7.0	6.9	7.0	7.0	6.9	7.0	7.7	8.7	9.7	10.1	10.7	11.1	11.1	11.2	10.9	11.1
Apr	6.1	5.9	5.7	5.6	5.5	5.7	5.6	6.5	7.8	8.8	9.4	9.8	10.5	10.3	10.2	10.4	10.3
May	4.6	4.7	4.5	4.4	4.5	4.5	4.8	6.1	7.4	8.3	8.9	9.3	9.5	9.6	9.7	9.6	9.3
June	3.9	3.9	3.9	3.8	3.7	3.8	3.9	4.6	5.7	6.3	6.9	7.5	7.9	8.4	8.2	8.6	8.1
July	4.0	4.2	3.9	3.8	3.6	3.6	4.0	5.0	5.8	6.7	7.7	8.0	8.4	8.6	8.6	8.7	8.6
Aug	3.7	3.7	3.5	3.4	3.5	3.6	3.7	4.3	5.1	5.8	6.5	7.3	7.9	7.8	8.0	8.0	7.8
Sept	4.4	4.2	4.0	3.9	3.8	3.9	4.0	4.6	5.6	6.4	7.0	7.6	8.1	8.4	8.2	8.4	8.1
Oct	5.2	5.0	4.6	4.8	4.7	4.7	4.7	5.2	6.4	7.3	8.4	8.8	9.2	9.4	9.7	9.6	9.3
Nov	6.8	6.8	6.7	6.7	6.8	6.7	6.9	7.1	7.9	8.7	9.2	9.6	9.9	10.2	9.8	9.4	8.8
Dec	6.7	6.5	6.6	6.6	6.8	6.6	6.9	6.9	7.3	7.7	8.3	8.8	9.2	9.3	9.3	9.1	8.6
Year	5.7	5.6	5.4	5.4	5.4	5.4	5.5	6.0	7.0	7.7	8.4	8.8	9.3	9.4	9.4	9.4	9.1

CLEVELAND, OHIO.

[λ=41° 30′ N.; φ=81° 42′ W.]

Jan	12.3	12.1	12.3	12.0	12.4	12.2	12.0	11.9	12.2	12.5	12.6	12.7	13.1	12.8	13.0	12.5	12.1
Feb	13.1	13.4	13.5	13.4	13.2	13.6	13.4	12.7	13.2	13.4	13.7	13.9	14.4	14.4	14.2	14.3	13.4
Mar	12.0	11.6	11.2	11.1	10.9	10.6	10.8	11.5	12.4	13.3	13.9	14.7	15.0	14.8	14.9	14.3	13.8
Apr	10.5	10.5	10.6	10.4	10.5	10.5	10.8	11.0	11.5	12.3	13.4	13.6	13.4	13.9	13.6	12.9	12.1
May	10.3	10.5	10.3	10.2	10.3	10.3	10.3	10.6	11.5	12.1	12.5	12.8	13.4	13.6	13.3	12.6	12.3
June	8.6	8.9	9.0	9.0	9.1	8.7	8.9	9.2	9.7	10.5	11.0	11.3	11.8	11.9	11.7	11.8	10.8
July	8.9	8.7	8.9	8.8	9.0	8.7	8.7	8.8	9.1	9.9	10.8	11.0	11.5	11.8	11.6	11.6	11.1
Aug	8.8	9.0	9.0	8.8	8.8	8.9	8.7	8.9	9.0	9.3	10.5	11.1	11.9	11.7	11.8	11.3	10.9
Sept	11.8	11.9	11.9	11.7	11.7	11.5	11.2	11.0	11.3	11.5	12.1	12.7	13.2	13.8	13.8	13.0	11.9
Oct	12.8	13.0	12.8	12.5	12.5	12.3	12.3	12.6	13.0	13.4	13.9	14.1	14.2	14.3	14.3	14.2	13.3
Nov	14.1	14.3	14.1	14.5	14.6	14.8	14.8	14.6	14.7	14.9	15.1	15.2	15.7	15.5	15.8	15.2	14.4
Dec	13.4	13.8	13.8	13.8	14.0	14.0	13.9	14.1	14.4	14.8	15.0	15.3	15.9	15.7	15.3	14.9	14.0
Year	11.4	11.5	11.4	11.4	11.4	11.3	11.3	11.4	11.8	12.3	12.9	13.2	13.6	13.7	13.6	13.2	12.5

DETROIT, MICH.

[λ=42° 20′ N.; φ=83° 3′ W.]

Jan	10.9	10.6	10.4	10.4	10.4	10.6	10.6	10.4	10.6	11.1	11.8	13.0	13.1	13.0	12.9	12.5	12.0
Feb	12.1	11.5	11.4	11.3	11.2	11.4	11.0	11.3	11.5	12.4	12.9	13.7	13.8	14.3	14.7	14.4	14.1
Mar	10.8	10.6	10.8	10.6	10.9	11.2	10.7	11.2	12.1	12.8	13.2	14.0	14.2	14.5	14.9	14.8	13.8
Apr	10.4	10.1	10.0	9.8	9.8	10.1	10.3	10.6	11.3	11.9	12.7	13.6	14.0	14.2	14.5	14.3	13.9
May	8.6	8.3	8.2	8.4	8.4	8.8	8.7	9.3	10.1	10.8	11.5	12.4	12.9	13.4	13.4	13.2	12.8
June	7.3	7.4	7.4	7.2	6.9	7.2	6.8	7.6	8.7	9.4	10.0	11.1	11.1	11.7	11.9	11.9	11.1
July	7.2	7.5	7.4	6.9	7.2	7.4	7.4	7.1	8.1	8.7	9.9	11.1	11.7	11.8	12.2	12.2	11.9
Aug	6.7	6.4	6.5	6.4	6.6	6.8	6.8	6.9	7.6	8.5	8.9	9.7	10.3	10.6	10.9	10.8	10.6
Sept	8.2	8.2	8.2	8.2	8.2	8.6	8.5	8.6	9.0	10.3	11.1	11.6	12.1	12.4	12.6	12.7	12.2
Oct	10.2	10.3	10.3	9.9	10.2	10.4	10.2	10.2	10.8	11.9	12.4	13.2	13.4	13.7	13.8	13.5	12.6
Nov	11.7	11.6	11.2	11.5	11.5	11.8	11.5	11.8	12.1	13.1	13.7	14.1	14.4	14.3	14.2	13.7	13.1
Dec	11.9	12.0	12.0	12.2	12.1	12.5	12.2	12.2	12.2	13.0	13.6	14.4	14.7	14.5	14.5	13.8	13.1
Year	9.7	9.5	9.5	9.4	9.4	9.7	9.6	9.8	10.3	11.2	11.8	12.7	13.0	13.2	13.4	13.2	12.6

DODGE CITY, KANS.

[λ=37° 45′ N.; φ=100° W.]

Jan	8.8	8.7	9.0	9.0	9.4	9.4	9.5	9.0	9.1	9.4	10.6	12.1	12.6	13.0	12.9	12.4	11.8
Feb	10.4	10.1	10.0	9.7	9.6	9.5	9.6	9.4	9.5	9.8	11.4	12.6	13.5	14.0	14.2	14.2	13.9
Mar	11.6	11.7	11.5	11.2	11.0	10.9	10.7	10.7	11.2	13.1	15.3	16.0	16.1	16.5	16.9	16.9	16.6
Apr	13.4	13.1	12.9	13.1	12.8	12.4	11.4	11.6	13.5	16.3	17.4	18.0	17.6	17.9	18.1	18.2	18.2
May	12.1	11.6	11.2	11.0	11.0	10.4	10.5	11.1	13.2	15.1	15.6	15.5	15.2	15.4	15.6	15.8	15.6
June	12.9	12.3	12.1	11.5	11.0	10.8	10.4	10.9	13.2	15.0	15.4	15.7	15.4	15.7	16.0	16.2	16.4
July	10.9	10.3	9.9	9.7	8.9	8.7	8.4	8.6	10.6	12.9	13.7	13.7	13.2	13.3	13.7	13.8	14.0
Aug	8.7	8.2	8.1	7.9	7.5	7.3	6.7	6.7	8.6	10.8	12.1	12.4	12.8	13.0	13.4	13.4	13.5
Sept	11.0	10.7	10.8	10.6	9.9	9.6	9.6	9.5	10.7	13.9	15.7	16.3	16.5	16.5	16.5	16.7	16.8
Oct	9.4	9.0	8.9	9.0	9.0	9.1	8.7	8.1	8.3	10.4	12.9	13.6	14.0	14.2	14.7	14.8	14.4
Nov	9.0	9.0	9.4	9.6	9.6	9.3	9.0	9.0	8.9	9.5	11.7	13.6	14.3	14.4	14.7	14.3	14.0
Dec	9.4	9.8	9.7	9.7	9.4	9.4	9.6	9.5	9.3	9.5	10.9	12.2	13.2	13.8	14.0	14.0	13.6
Year	10.6	10.4	10.3	10.2	9.9	9.7	9.5	9.5	10.5	12.1	13.6	14.3	14.5	14.8	15.1	15.1	14.9

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891-1895—Continued.

CINCINNATI, OHIO.

[h_a=157 ft.; reduction factor, 0.57; local time, 38m slow.] [Seventy-fifth Meridian Time.]

6h	7h	8h	9h	10h	11h	Mid.	Mean.	Red. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1891-95.
8.8	8.1	7.7	7.7	7.6	7.5	7.6	8.0	4.6	43	80	66	110	85	132	63	139	6	Jan.
10.0	9.1	8.4	8.1	8.0	8.3	8.4	8.8	5.0	38	69	51	92	89	89	65	171	13	Feb.
10.8	9.2	8.5	8.3	7.7	7.6	7.5	8.8	5.0	63	86	64	105	78	122	66	137	22	Mar.
9.8	8.6	7.5	6.8	6.6	6.4	6.1	7.7	4.4	50	107	70	110	82	95	42	125	38	Apr.
9.0	8.1	6.6	5.5	5.5	5.2	4.9	6.9	3.9	48	79	47	133	106	107	39	145	40	May.
7.9	7.2	5.9	5.1	4.5	4.1	4.0	5.7	3.2	48	74	62	139	82	117	28	90	81	June.
8.3	7.3	6.2	5.0	4.5	4.2	4.1	6.0	3.4	49	64	74	101	79	137	49	105	85	July.
8.0	7.0	6.0	5.3	4.6	4.4	4.0	5.5	3.1	65	100	78	118	83	103	40	101	56	Aug.
7.7	6.4	5.3	5.0	4.8	4.6	4.7	5.8	3.3	43	85	95	154	80	101	34	97	31	Sept.
8.3	7.2	6.5	6.2	5.7	5.5	5.4	6.7	3.8	58	66	82	147	82	86	60	144	17	Oct.
8.3	7.8	7.4	7.4	7.1	7.0	6.9	7.9	4.5	46	51	57	150	107	98	65	131	16	Nov.
7.7	7.5	7.3	7.4	7.4	7.0	7.0	7.6	4.3	34	62	44	155	134	115	49	114	35	Dec.
8.7	7.8	6.9	6.5	6.2	6.0	5.9	7.1	4.0	587	924	790	1,514	1,108	1,301	600	1,500	441	Year.

CLEVELAND, OHIO.

[h_a=130 ft.; reduction factor, 0.6; local time, 27m slow.]

11.8	11.6	11.6	12.2	12.5	12.4	12.4	12.3	7.4	31	41	23	161	96	204	78	111	0	Jan.
12.4	11.9	12.2	12.3	12.9	12.9	13.2	13.3	8.0	35	53	16	146	60	120	102	143	3	Feb.
12.8	11.6	11.2	11.5	11.6	11.9	12.1	12.5	7.5	66	111	32	150	53	122	87	122	1	Mar.
11.0	10.2	9.7	9.7	9.7	9.9	10.1	11.3	6.8	96	93	36	123	46	101	96	124	0	Apr.
11.5	10.3	9.4	9.3	9.9	10.2	10.2	11.2	6.7	85	98	40	146	74	90	58	143	3	May.
9.9	8.2	7.5	7.4	7.6	8.1	8.0	9.5	5.7	72	111	40	137	73	100	80	104	3	June.
9.9	8.8	8.0	7.7	8.1	8.4	8.6	9.5	5.7	116	82	42	136	89	76	72	122	0	July.
9.6	8.1	7.2	7.3	8.0	8.3	8.6	9.4	5.6	115	101	58	149	71	67	65	118	0	Aug.
10.8	9.3	9.4	10.3	11.1	11.4	11.6	11.7	7.0	81	69	40	205	70	91	66	96	1	Sept.
11.8	11.2	11.7	12.2	12.7	13.0	12.8	13.0	7.8	42	40	35	209	75	145	74	123	2	Oct.
14.0	14.0	13.7	13.9	14.0	13.9	14.0	14.6	8.8	16	31	17	247	81	158	68	102	0	Nov.
13.6	13.5	13.4	13.6	13.7	13.8	13.6	14.2	8.5	22	42	14	213	114	180	63	96	0	Dec.
11.6	10.7	10.4	10.6	11.0	11.2	11.3	11.9	7.1	776	873	392	2,023	902	1,453	910	1,404	14	Year.

DETROIT, MICH.

[h_a=161 ft.; reduction factor, 0.57; local time, 32m slow.]

11.6	11.1	11.0	11.0	10.0	11.0	11.0	11.3	6.4	43	62	33	31	54	256	134	110	0	Jan.
13.8	12.7	12.7	12.7	12.5	12.6	13.0	12.6	7.2	29	102	47	34	27	203	109	125	0	Feb.
13.5	12.1	11.4	11.5	11.4	11.5	11.5	12.2	7.0	33	170	73	72	18	211	80	108	0	Mar.
13.7	12.2	10.7	10.6	10.3	10.1	10.6	11.7	6.7	38	178	74	61	20	164	60	105	0	Apr.
12.7	11.0	9.6	9.0	9.0	9.4	9.2	10.4	5.9	35	152	80	52	36	206	69	93	1	May.
11.0	9.4	8.3	7.5	7.4	7.4	7.2	8.9	5.1	18	119	102	67	34	214	102	61	3	June.
11.4	9.9	8.1	7.5	6.9	6.9	7.4	8.9	5.1	47	117	81	39	32	228	80	118	3	July.
10.0	8.6	7.4	7.1	7.3	7.2	6.9	8.1	4.6	43	156	43	68	28	207	66	88	5	Aug.
11.2	9.0	8.9	8.7	8.6	8.5	8.5	9.8	5.6	33	94	71	74	36	219	85	99	3	Sept.
11.5	10.3	10.3	10.3	10.4	10.7	10.8	11.3	6.4	37	55	59	58	36	233	134	139	1	Oct.
12.4	11.9	11.7	12.0	12.0	12.0	12.1	12.5	8.2	47	49	30	54	43	238	100	150	0	Nov.
12.5	11.9	12.1	11.9	12.1	11.8	12.0	12.7	7.2	41	49	30	39	35	353	105	90	1	Dec.
12.1	10.8	10.2	10.0	9.9	9.9	10.0	10.9	6.2	448	1,303	783	641	399	2,732	1,156	1,287	16	Year.

DODGE CITY, KANS.

[h_a=52 ft.; reduction factor, 0.9; local time, 1h 40m slow.]

11.1	9.2	8.0	7.9	8.0	8.2	8.4	9.9	8.9	124	116	26	111	69	52	43	201	2	Jan.
13.2	11.6	9.5	9.4	9.9	10.1	10.0	11.0	9.9	112	105	22	102	98	53	33	152	1	Feb.
16.5	15.7	13.4	11.5	11.7	11.8	11.9	13.4	12.0	108	118	24	109	126	68	30	161	1	Mar.
17.8	17.5	15.9	13.4	13.1	13.5	13.5	15.0	13.5	84	89	32	156	113	55	23	165	2	Apr.
15.6	16.3	15.5	13.5	12.7	12.5	12.8	13.5	12.1	99	167	56	167	137	34	14	69	2	May.
17.1	17.7	16.8	14.5	13.4	13.5	13.0	14.0	12.6	58	103	39	239	173	42	19	44	3	June.
14.1	14.1	13.7	12.4	11.6	11.4	11.3	11.8	10.6	35	117	45	289	182	34	12	28	2	July.
13.3	13.5	12.5	10.2	9.6	9.6	9.5	10.4	9.3	61	102	49	268	190	26	9	32	6	Aug.
16.9	16.1	13.1	11.3	11.3	11.6	11.4	13.0	11.7	55	98	43	228	210	43	13	27	4	Sept.
13.9	11.1	8.9	9.1	9.3	9.3	9.3	10.8	9.7	103	103	29	168	124	52	37	119	9	Oct.
12.4	9.7	8.6	8.9	9.2	9.5	9.4	10.7	9.6	123	89	16	142	88	48	54	157	2	Nov.
11.7	9.2	8.8	9.0	9.2	9.1	9.2	10.6	9.5	123	81	15	111	82	61	67	200	5	Dec.
14.5	13.5	12.1	10.9	10.8	10.8	10.8	12.0	10.8	1,086	1,287	395	2,091	1,591	568	354	1,354	39	Year.

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891–1895—Continued.

EASTPORT, ME.

[λ = 44° 54′ N.; φ = 66° 59′ W.] [Seventy-fifth Meridian Time.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	13.1	12.9	13.1	13.2	13.3	13.5	13.0	12.8	13.2	13.0	13.3	13.4	13.1	12.9	12.9	12.5	12.3
Feb	13.9	13.7	13.4	13.1	13.2	13.5	13.2	13.7	14.0	14.7	14.3	14.2	13.4	13.5	13.5	13.2	13.0
Mar	11.5	11.3	11.1	11.6	11.6	11.9	11.8	12.7	13.2	13.5	13.7	13.8	13.6	13.5	13.4	13.4	12.9
Apr	9.4	9.2	9.2	9.1	9.2	9.8	10.4	11.2	11.5	11.6	12.0	12.6	12.8	13.0	13.2	12.7	12.1
May	7.0	6.9	7.0	7.3	7.1	7.8	8.0	8.4	9.2	9.9	10.3	11.1	11.1	11.7	11.5	11.3	11.0
June	6.1	5.9	5.9	6.0	6.1	6.3	6.2	6.5	6.7	7.5	8.0	8.7	9.3	9.1	9.0	9.3	9.0
July	5.7	5.3	5.3	5.0	4.8	5.1	5.3	5.6	5.8	6.5	7.3	7.9	8.5	9.1	9.3	9.0	8.5
Aug	5.7	5.7	5.7	5.9	5.7	5.9	5.9	6.0	6.7	7.2	7.9	8.6	8.8	9.3	9.2	8.9	8.3
Sept	6.8	6.7	6.8	6.6	6.8	6.7	6.8	7.8	8.6	8.8	9.6	10.1	10.5	10.7	10.6	9.9	8.9
Oct	9.4	9.1	9.1	9.6	9.6	10.0	10.0	10.8	11.7	12.3	12.1	12.4	12.0	12.2	12.1	11.8	10.9
Nov	11.2	11.1	11.3	11.5	11.5	11.9	11.9	12.2	13.1	13.4	13.5	13.7	13.3	13.3	13.2	12.5	12.1
Dec	12.6	12.6	12.9	13.0	12.7	13.1	12.6	12.2	12.3	13.0	13.4	13.6	13.1	12.8	12.5	11.8	11.6
Year	9.4	9.2	9.2	9.3	9.3	9.6	9.6	10.0	10.5	11.0	11.3	11.7	11.6	11.8	11.7	11.4	10.9

GALVESTON, TEX.

[λ = 29° 18′ N.; φ = 94° 50′ W.]

Jan	11.8	11.8	11.6	11.3	11.2	11.1	11.4	11.4	11.5	12.0	12.1	12.2	12.4	12.5	12.6	12.3	12.2
Feb	12.8	12.6	12.7	12.2	12.3	12.1	12.3	12.3	12.8	13.0	13.5	13.4	13.8	13.2	12.8	12.6	12.4
Mar	12.9	12.6	12.3	12.3	12.6	12.6	12.3	12.2	12.4	12.8	13.0	12.8	13.2	12.9	13.0	12.9	12.7
Apr	12.2	11.9	11.8	11.7	11.3	11.0	10.7	11.0	11.5	11.9	12.3	12.6	12.9	12.6	13.0	13.1	13.2
May	11.9	11.8	11.8	11.5	11.2	10.9	11.1	11.4	12.2	12.5	12.8	12.7	13.0	12.8	13.1	13.3	13.0
June	10.4	10.1	10.2	9.8	9.5	9.2	8.9	8.9	9.9	10.3	10.2	10.4	11.1	11.3	11.6	11.8	11.7
July	9.9	9.8	9.7	9.3	8.8	8.4	7.8	7.9	8.6	9.0	9.4	9.3	10.2	10.8	11.4	11.7	11.6
Aug	7.8	7.7	7.7	7.6	7.3	7.0	6.9	7.0	7.5	8.3	8.5	8.5	9.1	9.5	10.1	10.2	10.2
Sept	9.7	9.6	9.8	9.6	9.7	9.8	9.8	9.7	10.1	11.0	11.2	11.1	11.6	11.3	11.3	11.4	11.1
Oct	10.8	10.8	10.7	10.3	10.3	10.4	10.3	10.3	10.7	10.8	11.3	11.2	11.2	11.2	11.1	10.9	10.7
Nov	11.4	11.2	11.0	11.0	11.1	11.2	11.2	10.9	11.3	11.7	12.0	12.1	12.4	12.3	12.1	11.8	11.6
Dec	12.1	12.2	12.1	11.9	12.1	12.0	11 9	12.1	11.9	12.4	12.8	12.4	12.5	12.5	12.4	12.3	12.1
Year	11.1	11.0	11.0	10.7	10.6	10.5	10.4	10.4	10.9	11.3	11.6	11.7	12.0	11.9	12.0	12.0	11.9

HAVRE, MONT.

[λ = 48° 34′ N.; φ = 109° 40′ W.]

Jan	10.2	10.0	10.2	10.8	10.4	10.4	10.3	10.3	10.1	10.5	10.5	10.9	12.0	12.4	13.2	13.0	12.4
Feb	9.0	9.0	9.2	9.1	9.8	9.7	9.6	9.4	9.4	9.6	10.2	10.9	11.4	11.1	11.4	11.7	11.5
Mar	8.4	8.7	8.8	8.8	9.0	9.0	9.0	8.9	9.2	9.6	11.0	11.9	13.2	13.6	13.4	13.5	12.9
Apr	8.3	8.4	8.5	8.3	8.3	8.5	8.4	8.2	8.5	10.0	11.5	12.7	13.2	13.5	14.1	14.8	14.9
May	7.8	7.6	7.7	7.7	7.9	8.0	7.5	8.1	9.2	10.7	11.2	11.6	12.0	12.5	12.6	12.5	13.0
June	7.0	7.2	6.8	6.4	6.6	6.7	6.6	7.1	8.5	9.8	10.9	11.3	11.7	12.0	12.4	12.5	12.4
July	6.4	6.5	6.4	6.0	5.7	5.9	5.9	5.7	6.9	8.1	9.2	9.3	9.7	9.7	10.4	10.4	10.3
Aug	6.1	6.1	5.5	5.7	5.5	5.7	5.6	5.7	5.9	7.2	8.1	8.6	9.7	9.5	10.1	10.4	10.5
Sept	7.7	7.5	7.3	7.6	7.6	7.7	7.5	7.3	7.2	8.6	10.1	11.9	12.7	13.0	13.4	13.5	13.7
Oct	7.6	7.8	7.5	7.7	8.0	8.2	8.4	8.3	8.5	8.5	9.6	10.9	12.4	12.8	12.7	12.6	12.4
Nov	10.1	9.9	9.8	9.9	10.0	10.3	10.2	10.0	9.8	9.9	10.3	11.0	12.3	13.5	14.2	14.2	13.4
Dec	10.5	10.9	11.1	11.8	11.8	11.8	11.8	11.5	11.3	10.9	11.0	11.3	12.8	13.6	14.1	14.1	13.2
Year	8.3	8.3	8.2	8.3	8.4	8.5	8.4	8.4	8.7	9.4	10.3	11.0	11.9	12.3	12.7	12.8	12.6

KANSAS CITY, MO.

[λ = 39° 5′ N.; φ = 94° 37′ W.]

Jan	8.1	7.8	7.9	7.9	7.5	7.5	7.6	7.8	8.3	8.5	9.0	9.6	10.1	10.0	10.0	10.1	9.8
Feb	9.3	8.8	8.8	8.9	9.0	8.9	8.9	8.8	8.8	9.6	10.2	10.5	11.1	10.8	10.9	11.1	10.8
Mar	10.2	9.8	9.7	9.8	9.9	9.9	10.3	10.1	10.9	11.7	12.3	12.6	13.2	12.9	13.0	12.9	12.8
Apr	8.7	8.4	8.3	8.5	8.6	8.5	8.6	8.8	9.6	10.4	10.9	11.2	11.8	11.6	11.8	11.9	12.0
May	7.1	6.8	7.0	6.9	6.9	7.0	7.2	7.4	8.3	9.3	10.0	10.1	10.5	10.3	10.4	10.4	10.3
June	6.4	6.2	6.0	6.0	5.9	5.9	6.3	6.7	7.5	8.1	8.9	9.2	9.4	9.2	9.5	9.5	9.5
July	6.0	6.2	6.2	6.3	6.1	6.1	6.2	6.7	7.0	7.7	8.2	8.5	9.3	9.0	9.1	9.3	9.1
Aug	5.7	5.3	5.4	5.7	5.5	5.2	5.4	5.4	6.2	6.7	7.4	7.7	8.3	8.2	8.3	8.5	8.5
Sept	7.4	7.4	7.3	7.1	6.9	6.9	6.9	7.0	7.9	8.7	9.7	10.0	10.5	10.6	10.8	11.0	10.7
Oct	7.9	7.7	7.6	7.5	7.4	7.4	7.3	7.3	7.6	8.4	9.3	10.1	10.6	10.4	10.7	10.5	10.2
Nov	9.0	8.8	8.6	8.9	8.7	8.6	8.8	8.8	9.1	9.6	10.2	10.5	10.9	10.5	10.8	10.9	10.3
Dec	9.4	9.0	9.0	8.6	8.5	8.3	8.5	8.8	9.0	9.4	10.3	10.5	10.9	10.9	11.3	11.2	10.8
Year	7.9	7.7	7.6	7.7	7.6	7.5	7.7	7.8	8.4	9.0	9.7	10.0	10.6	10.4	10.6	10.6	10.4

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891-1895—Continued.

EASTPORT, ME.

[h_a = 74 ft.; reduction factor, 0.8; local time, 32^m fast.] [Seventy-fifth Meridian Time.]

6^h	7^h	8^h	9^h	10^h	11^h	Mid.	Mean.	Red. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1891-95.
12.9	12.9	13.3	13.5	13.4	13.0	13.4	13.1	10.5	114	96	29	68	14	98	125	191	11	Jan.
12.9	12.8	13.1	13.2	13.4	13.5	13.9	13.5	10.8	96	95	22	28	35	108	104	184	5	Feb.
12.3	11.7	11.7	11.7	11.8	11.6	12.0	12.4	9.9	89	80	36	59	46	135	122	179	8	Mar.
11.3	9.8	9.7	9.4	9.7	9.6	9.8	10.8	8.6	96	93	40	30	99	122	116	107	17	Apr.
10.3	9.0	8.1	7.7	7.5	7.1	7.0	8.9	7.1	68	89	47	38	172	157	64	91	37	May.
8.0	7.5	7.0	7.2	6.7	6.4	6.2	7.3	5.8	72	118	42	30	174	180	41	43	20	June.
7.8	7.0	6.3	6.1	5.8	5.7	5.9	6.6	5.3	46	37	11	29	230	219	77	76	19	July.
7.4	6.5	6.1	6.3	6.4	6.1	6.1	6.9	5.5	81	76	23	28	159	178	90	85	23	Aug.
8.5	8.1	8.0	7.8	7.5	7.4	7.2	8.2	6.6	69	51	37	19	115	202	125	87	16	Sept.
10.0	9.8	9.8	9.6	9.8	9.8	10.2	10.6	8.5	116	62	36	41	72	154	115	139	10	Oct.
12.4	12.1	12.1	12.0	11.5	11.1	11.2	12.2	9.8	90	81	26	43	49	152	134	137	8	Nov.
12.0	12.1	12.4	12.7	12.8	12.8	13.0	12.6	10.1	101	54	18	37	38	124	160	406	6	Dec.
10.5	9.9	9.8	9.8	9.7	9.5	9.7	10.3	8.2	1,036	931	366	439	1,204	1,830	1,274	1,506	179	Year.

GALVESTON, TEX.

[h_a = 96 ft.; reduction factor, 0.7; local time, 1^h 19^m slow.]

12.0	11.7	11.4	11.5	11.8	12.0	11.7	11.8	8.3	92	105	70	157	108	61	27	111	9	Jan.
12.2	11.7	11.5	12.0	12.4	12.4	12.6	12.6	8.8	94	107	80	144	105	50	21	72	3	Feb.
12.8	12.5	12.3	12.7	12.8	13.0	12.9	12.7	8.9	82	105	57	240	124	65	12	58	1	Mar.
13.1	12.7	12.0	12.0	12.3	12.5	12.5	12.2	8.5	43	48	53	290	185	50	17	33	1	Apr.
12.6	12.3	11.8	11.7	11.9	12.0	11.9	12.1	8.5	49	77	30	250	232	71	5	29	1	May.
11.6	11.1	10.7	10.1	10.2	10.3	10.0	10.4	7.3	18	47	43	223	229	117	27	15	1	June.
11.6	11.1	10.4	9.7	9.7	9.6	9.6	9.8	6.9	12	34	27	136	253	233	23	26	0	July.
9.8	9.2	8.7	7.8	7.3	7.2	7.5	8.3	5.8	25	59	44	131	195	193	54	40	3	Aug.
10.9	10.2	9.7	9.7	9.8	9.7	10.0	10.3	7.2	39	152	103	258	102	35	6	21	3	Sept.
10.2	9.4	9.3	9.8	10.1	10.4	10.6	10.5	7.4	70	163	97	205	78	61	17	48	4	Oct.
11.2	10.8	10.9	11.4	11.4	11.2	11.1	11.4	8.0	74	106	105	122	118	86	27	79	2	Nov.
11.9	11.7	11.7	12.0	12.2	12.3	12.1	12.2	8.5	89	92	66	160	136	70	33	96	2	Dec.
11.7	11.2	10.9	10.9	11.0	11.0	11.0	11.2	7.8	688	1,094	776	2,318	1,865	1,092	269	627	31	Year.

HAVRE, MONT.

[h_a = 33 ft.; reduction factor, 1.1; local time, 2^h 19^m slow.]

11.5	10.0	9.9	10.2	10.1	10.4	10.6	10.8	11.9	55	107	26	4	2	236	144	140	30	Jan.
10.9	10.7	9.8	9.0	9.0	8.8	8.7	10.0	11.0	45	90	28	9	14	209	158	108	17	Feb.
12.4	11.6	10.4	9.0	8.7	8.5	8.4	10.3	11.3	67	142	77	3	5	197	131	101	19	Mar.
14.3	13.6	13.0	11.0	9.1	8.6	8.7	10.8	11.9	71	90	76	28	23	165	127	131	9	Apr.
12.9	12.6	12.2	11.1	9.2	8.4	7.7	10.1	11.1	48	91	134	68	20	117	124	108	7	May.
12.3	12.0	11.6	10.6	8.6	7.9	7.7	9.4	10.3	65	81	48	42	23	175	142	119	11	June.
10.3	10.3	10.2	8.9	7.7	6.9	6.8	8.1	8.9	76	82	99	30	33	135	139	130	20	July.
10.1	9.3	9.2	8.1	6.5	6.1	5.7	7.5	8.2	80	111	81	26	41	148	113	127	16	Aug.
12.9	12.0	10.1	8.2	7.5	8.0	7.7	9.6	10.6	44	77	62	15	34	183	157	137	12	Sept.
11.2	9.6	7.7	6.9	7.3	7.3	7.4	9.2	10.1	66	56	53	31	24	220	177	104	13	Oct.
12.3	10.9	10.3	10.2	9.8	9.8	10.3	11.0	12.2	62	59	34	7	8	241	171	120	19	Nov.
12.2	11.1	10.6	10.4	10.6	10.9	11.1	11.7	12.9	40	80	28	11	1	281	166	111	21	Dec.
11.9	11.1	10.4	9.5	8.7	8.5	8.4	9.9	10.9	715	1,047	769	295	155	2,238	1,836	1,467	216	Year.

KANSAS CITY, MO.

[h_a = 95 ft.; reduction factor, 0.7; local time, 1^h 18^m slow.]

9.4	8.8	8.6	8.7	8.7	8.4	8.4	8.7	6.1	104	73	31	84	107	123	46	174	2	Jan.
10.2	9.8	8.9	9.2	9.0	9.3	9.3	9.6	6.7	94	74	46	76	93	81	57	156	0	Feb.
12.5	11.3	9.9	9.6	10.0	10.1	9.9	11.1	7.8	97	95	49	101	96	118	32	155	1	Mar.
11.9	11.1	9.6	8.4	8.5	8.4	8.5	9.8	6.9	75	100	75	152	84	98	23	111	2	Apr.
10.2	9.7	8.6	7.4	7.1	7.2	7.3	8.5	6.0	101	140	49	111	154	78	22	85	4	May.
9.1	8.3	7.2	6.4	6.0	6.2	6.1	7.5	5.2	79	89	45	194	153	61	20	72	7	June.
8.7	8.0	6.9	6.0	6.0	6.4	6.2	7.3	5.1	74	144	71	198	137	56	11	44	8	July.
8.1	7.5	6.2	5.7	5.8	5.7	5.7	6.6	4.6	96	149	57	151	137	67	19	57	10	Aug.
9.7	8.3	6.8	7.0	7.4	7.6	7.5	8.4	5.9	72	69	47	218	179	72	11	50	4	Sept.
9.2	7.5	7.0	7.4	7.5	7.9	7.8	8.4	5.9	104	60	20	153	129	118	31	123	5	Oct.
9.3	8.3	8.3	8.6	9.0	9.0	9.1	9.4	6.6	91	64	30	136	128	82	29	158	2	Nov.
9.8	9.6	9.7	9.7	9.8	9.7	9.5	9.7	6.8	101	79	31	90	144	120	38	139	1	Dec.
9.8	9.0	8.1	7.8	7.9	8.0	7.9	8.8	6.2	1,088	1,136	551	1,665	1,540	1,075	340	1,325	47	Year.

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891–1895—Continued.

KEY WEST, FLA.

[λ=24° 34′ N.; φ=81° 49′ W.] [Seventy-fifth Meridian Time.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	10.4	10.6	10.6	10.3	10.5	10.4	10.2	10.4	10.6	10.7	11.3	11.3	11.4	11.4	11.5	11.3	11.1
Feb	10.9	11.4	11.1	10.7	10.7	10.5	10.3	10.7	11.4	11.8	12.3	12.5	12.6	12.7	12.3	11.9	11.5
Mar	9.7	9.9	10.0	9.8	10.0	10.0	10.2	10.5	11.2	11.8	12.2	12.0	12.0	12.3	12.3	11.7	11.7
Apr	9.8	9.6	9.3	9.2	9.1	9.0	9.2	9.9	10.7	11.1	11.5	11.5	11.6	11.7	11.5	11.4	11.2
May	8.4	8.3	8.0	7.7	7.3	7.1	7.1	8.1	8.9	9.1	9.4	9.5	9.3	9.3	9.3	9.2	9.6
June	6.3	6.3	6.0	5.8	5.9	6.0	6.4	7.1	7.9	8.2	8.6	8.7	8.5	9.0	8.7	8.5	8.2
July	6.5	6.2	6.1	6.0	6.0	5.7	6.1	7.1	8.1	8.7	8.9	9.1	9.1	9.1	8.6	8.5	8.1
Aug	6.0	6.3	5.8	5.5	5.5	5.2	5.4	6.1	7.0	7.5	7.7	7.9	7.9	7.9	7.8	7.6	7.2
Sept	7.4	7.2	7.0	6.7	6.9	7.0	6.7	7.4	8.3	8.9	9.2	9.7	9.4	9.3	9.0	8.5	8.6
Oct	12.5	12.4	12.4	12.0	12.1	12.2	12.1	12.4	12.8	12.9	13.0	12.8	12.7	12.9	13.0	12.9	13.0
Nov	11.3	11.6	11.6	11.5	11.5	11.2	11.2	11.4	11.9	12.0	12.1	12.4	12.0	12.3	12.2	11.6	11.6
Dec	11.3	11.7	11.4	11.2	11.2	11.3	11.1	11.2	11.5	11.9	12.5	12.4	12.8	13.1	13.1	12.7	12.4
Year	9.2	9.3	9.1	8.9	8.9	8.8	8.8	9.4	10.0	10.4	10.7	10.8	10.8	10.9	10.8	10.5	10.4

MARQUETTE, MICH.

[λ=46° 34′ N.; φ=87° 24′ W.]

Jan	10.1	10.5	10.3	10.2	10.7	10.3	10.0	10.0	10.2	10.1	10.2	10.4	10.3	10.0	10.4	9.9	9.5
Feb	10.1	10.1	10.0	10.1	10.3	10.5	10.4	10.1	10.7	10.9	10.8	10.6	10.6	10.8	10.7	10.8	10.3
Mar	9.8	9.9	10.0	10.3	10.2	10.1	9.9	10.0	10.2	10.7	11.0	11.5	12.0	12.0	11.6	11.2	10.5
Apr	8.5	8.7	8.7	8.6	8.6	8.4	8.4	8.9	10.0	10.8	11.5	12.0	12.2	12.6	12.2	11.5	10.9
May	9.6	9.8	9.8	9.7	9.7	9.6	9.7	10.1	11.0	11.7	12.0	12.3	12.8	12.9	12.7	12.2	11.7
June	8.1	8.2	8.1	7.9	7.6	7.0	7.0	7.3	7.9	8.9	9.5	9.8	10.0	10.1	10.3	9.8	9.3
July	8.5	8.6	9.0	8.7	8.6	8.4	8.6	8.5	9.3	9.5	10.2	10.3	10.7	10.3	10.1	9.9	9.1
Aug	9.1	8.9	9.1	9.0	8.8	8.7	8.5	8.5	9.1	9.8	10.1	10.4	10.4	10.5	10.2	10.0	9.5
Sept	11.1	11.1	10.7	10.7	10.4	10.5	10.2	11.0	11.8	12.4	13.1	13.7	13.9	14.5	14.2	13.3	12.3
Oct	11.0	11.3	11.3	11.5	11.2	10.8	10.8	11.0	11.5	12.0	12.8	13.2	13.3	13.4	13.5	13.1	12.3
Nov	11.2	11.3	11.2	11.2	11.1	11.1	11.0	10.8	11.1	11.4	11.6	11.9	12.2	12.4	12.1	11.6	10.6
Dec	11.6	11.7	11.4	11.1	11.2	11.2	11.2	10.9	11.0	11.2	11.7	12.0	12.2	11.9	11.8	11.4	10.7
Year	9.9	10.0	10.0	9.9	9.9	9.7	9.6	9.8	10.3	10.8	11.2	11.5	11.7	11.8	11.6	11.2	10.6

MEMPHIS, TENN.

[λ=35° 9′ N.; φ=90° 3′ W.]

Jan	7.9	7.5	7.7	7.6	7.5	7.1	7.2	7.1	7.5	8.3	8.5	8.5	8.9	8.5	8.5	8.5	8.2
Feb	8.7	8.0	8.1	8.1	8.4	8.3	8.6	8.2	8.7	9.3	9.4	9.5	9.9	9.4	9.6	9.5	9.5
Mar	8.6	8.2	8.3	7.9	8.0	8.1	8.2	7.9	8.8	9.2	9.1	9.2	9.8	9.6	9.8	9.8	9.7
Apr	7.7	7.7	7.4	7.3	7.4	7.5	7.5	7.6	8.5	8.8	9.1	9.5	9.7	9.7	9.8	9.8	9.5
May	6.5	6.3	6.1	5.9	5.9	6.0	6.4	6.8	7.6	8.4	8.6	8.7	9.4	9.0	9.3	8.9	8.8
June	4.7	4.5	4.6	4.4	4.5	4.5	4.5	4.9	5.7	6.1	6.4	6.5	7.1	7.3	7.4	7.8	7.8
July	4.9	4.6	4.5	4.4	4.1	4.3	4.4	4.7	5.5	6.2	6.7	6.9	7.4	7.4	7.7	7.9	7.5
Aug	4.4	4.6	4.7	4.4	4.4	4.4	4.4	4.6	5.4	5.8	6.2	6.9	7.4	7.4	7.7	8.2	8.0
Sept	5.5	5.5	5.4	5.3	5.3	5.2	5.1	5.2	5.9	6.5	6.8	7.5	7.7	7.8	7.9	7.9	7.6
Oct	6.2	6.2	6.1	6.1	6.0	5.7	5.8	5.9	6.3	7.3	7.8	8.0	8.6	8.2	8.4	8.1	8.2
Nov	8.2	7.9	7.9	7.6	7.6	7.7	7.9	7.9	8.3	8.6	8.8	8.9	9.2	8.7	8.7	8.9	8.5
Dec	8.6	8.7	8.5	8.5	8.4	8.5	8.5	8.4	8.6	9.3	9.5	9.5	9.3	9.1	9.2	9.2	9.1
Year	6.8	6.6	6.6	6.5	6.5	6.4	6.5	6.6	7.2	7.8	8.1	8.3	8.7	8.5	8.7	8.7	8.5

NEW ORLEANS, LA.

[λ=29° 58′ N.; φ=90° 4′ W.]

Jan	8.6	8.7	8.6	8.6	8.5	8.6	8.7	8.3	8.5	9.2	9.9	10.4	10.8	10.8	10.9	10.7	10.4
Feb	9.6	9.5	9.2	9.3	9.3	9.2	9.4	9.4	9.8	10.7	11.4	12.1	12.9	12.4	12.5	12.4	12.0
Mar	9.3	9.3	9.2	9.2	8.9	8.8	9.1	8.9	10.0	10.9	11.4	11.9	11.9	12.0	12.2	12.3	11.9
Apr	8.3	8.1	7.7	7.4	7.1	7.3	7.3	7.6	8.9	10.5	11.5	11.8	12.2	12.5	12.7	12.7	12.0
May	7.4	7.1	6.7	6.4	5.9	6.0	5.9	6.5	8.0	9.2	9.7	9.7	10.2	10.3	10.5	10.6	10.8
June	5.2	5.3	5.0	4.7	4.7	4.7	4.8	5.5	7.0	8.2	8.4	8.8	9.4	9.3	9.5	9.4	9.4
July	5.0	4.9	4.9	4.8	4.7	4.4	4.4	4.8	6.5	7.5	7.9	8.0	8.5	8.5	8.7	8.8	8.4
Aug	5.0	5.0	4.9	4.7	4.4	4.4	4.3	4.7	6.0	7.2	7.6	7.7	8.6	8.3	8.5	8.8	8.3
Sept	6.0	5.8	5.8	5.9	6.0	6.0	6.1	6.7	8.0	9.2	9.6	9.7	10.1	10.4	10.1	10.0	9.4
Oct	8.0	7.8	7.7	7.4	7.8	7.9	8.0	8.0	8.6	9.4	9.9	10.4	10.6	10.6	10.8	10.5	9.9
Nov	7.9	8.0	7.8	7.9	7.9	8.1	8.1	8.1	8.6	9.3	9.8	10.0	10.2	10.2	10.4	10.4	10.2
Dec	8.5	8.6	8.6	8.7	8.8	8.7	8.9	8.8	9.2	9.8	10.3	11.0	11.7	12.0	12.0	11.9	11.1
Year	7.4	7.3	7.2	7.1	7.0	7.0	7.1	7.3	8.3	9.3	9.8	10.1	10.6	10.6	10.7	10.7	10.3

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891–1895—Continued.

KEY WEST, FLA.

[h_a = 50 ft.; reduction factor, 0.9; local time, 27^m slow.] [Seventy-fifth Meridian Time.]

6^h	7^h	8^h	9^h	10^h	11^h	Mid.	Mean.	Red. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1891–95.
10.8	10.3	10.3	10.3	10.5	10.6	10.4	10.7	9.6	114	219	155	119	36	30	12	57	2	Jan.
10.8	10.2	10.7	10.8	10.7	10.7	10.9	11.3	10.2	77	138	170	176	42	23	5	43	1	Feb.
11.4	10.4	10.2	10.3	10.1	10.2	9.8	10.8	9.7	57	142	175	208	32	36	16	77	1	Mar.
10.9	10.6	10.6	11.0	10.9	10.4	10.0	10.5	9.4	85	89	254	143	40	29	12	65	2	Apr.
9.4	9.5	9.1	9.1	9.2	9.2	8.8	8.8	7.9	72	95	216	177	33	33	25	88	5	May.
7.9	7.5	7.1	7.1	6.7	6.7	6.4	7.3	6.6	38	43	194	253	71	50	21	40	8	June.
7.6	7.5	7.0	7.0	6.9	6.8	6.6	7.4	6.7	20	21	315	257	65	26	11	23	5	July.
7.0	6.6	6.4	6.5	6.5	6.3	6.3	6.7	6.0	35	56	220	224	64	63	30	43	6	Aug.
8.2	7.3	7.5	7.7	7.5	7.9	7.9	8.0	7.2	22	111	272	157	71	39	27	13	5	Sept.
12.6	12.5	12.6	12.6	12.4	12.7	12.7	12.6	11.3	78	286	181	71	23	37	28	39	1	Oct.
11.1	11.0	11.7	11.9	11.7	12.1	11.8	11.7	10.5	89	362	144	61	20	10	6	25	3	Nov.
11.6	11.2	11.7	12.0	11.8	12.0	11.7	11.9	10.7	101	317	134	94	26	15	11	44	1	Dec.
9.9	9.6	9.6	9.7	9.6	9.6	9.4	9.8	8.8	790	1,883	2,432	1,945	523	391	205	557	39	Year.

MARQUETTE, MICH.

[h_a = 95 ft.; reduction factor, 0.7; local time, 49^m slow.]

8.8	9.2	9.5	10.0	10.0	10.1	10.3	10.0	7.0	69	30	13	33	93	73	186	220	26	Jan.
9.2	8.7	8.7	9.1	10.0	10.1	10.2	10.2	7.1	89	45	33	41	97	71	103	189	10	Feb.
10.1	8.7	8.0	8.1	8.6	9.2	9.5	10.1	7.0	114	81	49	63	92	57	94	184	10	Mar.
10.3	9.2	8.1	7.7	7.5	8.0	8.4	9.7	6.8	135	138	46	70	57	40	56	161	16	Apr.
10.8	9.8	8.6	7.9	8.0	8.7	9.4	10.4	7.3	157	95	36	63	77	72	53	188	4	May.
8.7	7.7	6.9	6.0	6.1	6.9	7.9	8.2	5.7	141	93	38	67	102	74	70	127	8	June.
7.8	6.6	5.6	5.3	6.5	7.4	8.2	8.6	6.0	132	82	37	55	71	105	88	163	9	July.
8.7	7.5	6.6	6.3	7.0	8.3	9.0	8.9	6.2	137	115	17	52	87	103	76	149	7	Aug.
11.1	9.2	8.8	9.3	9.9	10.3	11.0	11.4	8.0	69	47	16	93	118	146	95	134	1	Sept.
11.4	10.4	10.4	10.5	10.7	11.1	10.9	11.7	8.2	113	36	15	48	148	101	107	174	2	Oct.
10.4	10.4	10.9	11.6	11.8	11.5	11.4	11.3	7.9	68	30	9	50	149	97	136	181	1	Nov.
10.2	10.7	11.3	12.0	12.2	12.1	12.0	11.4	8.0	45	25	14	44	146	123	194	153	1	Dec.
9.8	9.0	8.6	8.6	9.0	9.5	9.8	10.2	7.1	1,268	818	322	678	1,239	1,064	1,256	2,024	95	Year.

MEMPHIS, TENN.

[h_a = 154 ft.; reduction factor, 0.57; local time, 1^h slow.]

8.1	7.6	7.5	8.0	7.9	7.8	7.8	7.9	4.5	104	87	55	72	117	89	98	119	2	Jan.
9.3	8.5	8.0	8.2	8.1	8.1	8.3	8.7	5.0	134	87	50	58	100	36	80	126	1	Feb.
9.3	8.9	7.6	8.0	7.8	8.3	8.6	8.7	5.0	111	62	42	121	108	90	79	127	1	Mar.
9.1	8.3	7.0	6.7	7.0	7.4	7.8	8.2	4.7	89	67	60	128	129	81	74	87	4	Apr.
8.4	7.5	6.3	5.6	5.8	5.8	6.4	7.3	4.2	93	98	88	111	120	87	69	115	3	May.
7.7	7.1	5.6	4.9	4.6	4.5	4.4	5.7	3.2	62	68	76	100	145	94	91	79	6	June.
7.2	6.5	5.3	4.7	4.9	4.7	4.8	5.7	3.2	72	73	77	95	95	115	74	123	18	July.
7.4	6.6	4.9	4.5	4.4	4.3	4.4	5.7	3.2	120	97	54	54	81	133	54	143	9	Aug.
7.1	6.0	5.0	5.0	5.2	5.4	5.6	6.1	3.5	128	112	63	111	111	52	42	89	13	Sept.
7.3	5.8	5.5	5.8	6.0	6.1	6.2	6.7	3.8	119	96	48	109	100	77	63	123	9	Oct.
7.8	7.5	7.2	7.4	8.1	8.3	8.4	8.2	4.7	78	88	75	114	110	63	60	128	5	Nov.
8.6	8.1	8.1	8.6	8.6	8.9	9.2	8.8	5.0	79	100	49	144	126	73	68	102	2	Dec.
8.1	7.4	6.5	6.4	6.5	6.6	6.8	7.3	4.2	1,188	1,036	696	1,222	1,344	990	854	1,362	73	Year.

NEW ORLEANS, LA.

[h_a = 120 ft.; reduction factor, 0.6; local time, 1^h slow.]

9.3	8.3	8.1	8.4	8.8	8.6	8.6	9.2	5.5	132	111	97	97	64	53	75	94	20	Jan.
11.4	10.6	9.6	9.6	9.5	9.6	9.6	10.4	6.2	116	141	74	103	94	54	30	60	6	Feb.
11.7	10.8	9.7	9.6	9.7	9.5	9.5	10.3	6.2	112	112	76	133	147	56	45	56	8	Mar.
11.9	11.2	9.4	9.0	8.7	8.6	8.5	9.7	5.8	73	71	80	168	194	48	37	45	4	Apr.
10.5	9.9	8.7	7.8	7.7	7.5	7.6	8.3	5.0	59	101	55	143	103	98	29	45	12	May.
9.1	8.3	7.1	6.5	6.1	5.6	5.4	7.0	4.2	37	90	71	151	131	128	56	41	16	June.
8.0	7.6	6.7	5.7	5.6	5.4	5.3	6.4	3.8	49	40	56	120	139	136	85	69	18	July.
7.9	7.2	5.9	5.2	5.1	5.2	5.3	6.3	3.8	83	73	57	74	100	150	100	91	16	Aug.
9.0	7.8	6.7	6.4	6.1	6.2	6.3	7.6	4.6	101	205	111	136	42	24	18	64	19	Sept.
9.0	7.3	7.1	7.9	8.3	8.1	7.9	8.7	5.2	165	273	49	45	37	41	35	80	19	Oct.
9.1	7.9	8.1	8.3	8.4	8.5	8.3	8.8	5.3	177	168	77	118	80	32	19	43	6	Nov.
9.7	8.6	8.9	9.0	8.8	8.6	8.6	9.6	5.8	171	107	80	126	113	38	26	77	5	Dec.
9.7	8.8	8.0	7.8	7.7	7.6	7.6	8.5	5.1	1,273	1,492	884	1,514	1,243	857	555	766	148	Year.

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891–1895—Continued.

NEW YORK, N. Y.

[λ=40° 43′ N.; φ=74° W.] [Seventy-fifth Meridian Time.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	10.7	10.6	10.9	10.8	10.8	11.2	11.3	11.4	11.9	12.4	13.0	13.2	13.3	12.9	12.8	12.8	12.5
Feb	12.8	12.4	12.1	12.2	12.3	12.5	12.6	12.5	13.1	13.4	13.4	13.6	13.6	13.5	13.9	13.8	13.4
Mar	12.8	12.5	12.8	12.8	12.6	12.4	12.7	13.2	13.9	14.3	14.5	14.9	14.6	14.7	14.9	14.6	14.6
Apr	11.1	10.8	10.4	10.4	10.4	10.7	10.8	11.3	12.1	12.5	13.1	13.4	13.8	14.0	14.0	14.3	14.4
May	9.9	9.7	9.5	9.3	9.4	9.2	9.5	10.0	10.4	10.8	11.2	11.6	12.3	12.9	13.4	13.7	13.7
June	7.8	7.7	7.6	7.5	7.8	7.5	7.8	8.3	8.8	9.2	9.6	9.9	10.5	10.9	11.3	11.5	11.6
July	8.4	8.0	8.0	7.7	7.6	7.6	7.7	8.1	8.6	9.0	9.4	9.9	10.7	11.1	11.2	11.1	10.9
Aug.	7.9	7.6	7.2	7.3	7.3	7.5	7.6	7.8	8.1	8.4	8.6	9.0	9.5	10.1	10.8	10.9	10.9
Sept	8.3	8.2	7.9	8.0	8.2	8.5	8.3	8.7	9.4	9.8	10.1	10.4	10.9	10.9	11.1	11.1	11.2
Oct	10.7	10.3	10.3	10.2	10.3	10.6	10.4	10.8	11.6	12.5	12.7	12.9	13.4	13.8	14.1	14.3	13.4
Nov.	11.9	11.7	11.6	11.1	10.9	11.1	11.2	11.2	11.8	12.4	12.9	13.0	13.3	13.3	13.3	12.9	12.9
Dec	12.1	11.8	11.6	11.9	12.0	12.0	11.7	11.9	12.3	12.6	12.7	13.1	13.5	13.6	13.8	13.6	13.6
Year	10.4	10.1	10.0	9.9	10.0	10.1	10.1	10.4	11.0	11.4	11.8	12.1	12.4	12.6	12.9	12.9	12.8

PHILADELPHIA, PA.

[λ=39° 57′ N.; φ=75° 9′ W.]

Jan	10.2	10.1	10.0	10.0	10.0	10.2	10.4	10.6	11.3	11.9	12.4	12.5	12.9	12.6	12.7	12.5	11.8
Feb	11.7	11.5	11.7	11.9	11.7	11.6	11.7	12.0	12.7	13.3	13.5	13.7	14.0	14.3	14.3	13.8	13.4
Mar	11.8	11.3	11.3	11.4	11.2	11.2	11.6	12.2	13.1	14.2	14.2	14.4	14.5	14.2	14.1	14.1	13.5
Apr	9.8	9.5	9.3	9.2	9.2	9.3	9.6	10.9	12.3	12.5	12.9	12.9	13.5	14.0	13.9	13.7	13.5
May	9.1	8.8	8.6	8.5	8.4	8.4	8.6	9.5	10.1	10.5	11.0	11.3	11.9	12.3	12.3	12.7	12.7
June	7.7	7.7	7.6	7.6	7.6	7.6	8.2	9.0	9.5	9.6	9.9	10.2	10.9	11.0	11.5	11.7	12.0
July	7.4	7.3	7.3	7.3	7.2	7.2	7.9	8.7	9.1	9.5	9.9	10.4	10.8	11.2	11.5	11.7	11.6
Aug.	7.3	7.2	7.0	6.9	7.1	7.1	7.3	8.2	8.7	9.1	9.3	9.7	10.1	10.6	10.6	11.1	10.7
Sept	7.1	7.0	7.1	7.5	7.5	7.6	8.1	8.9	9.8	10.3	10.6	11.0	11.3	11.4	11.5	11.3	10.9
Oct	9.0	8.6	8.7	8.7	9.0	9.0	9.0	9.9	10.9	12.0	12.4	12.4	12.8	12.9	12.9	12.6	11.7
Nov.	9.7	9.7	9.9	9.5	9.5	9.5	9.6	9.6	10.7	11.4	12.1	12.4	12.7	12.8	12.6	12.0	11.2
Dec	9.9	9.9	9.7	9.4	9.3	9.4	9.4	10.0	10.5	11.3	12.0	12.4	12.7	12.7	12.3	12.0	11.2
Year	9.2	9.0	9.0	9.0	9.0	9.0	9.3	10.0	10.7	11.3	11.7	11.9	12.3	12.5	12.5	12.4	12.0

PITTSBURG, PA.

[λ=40° 32′ N.; φ=80° 2′ W.]

Jan	6.6	6.4	6.4	6.5	6.7	6.6	6.6	6.9	7.4	7.8	8.2	8.4	8.7	8.5	8.6	8.4	7.9
Feb	7.2	7.0	7.0	6.8	6.8	6.6	7.1	7.2	7.5	8.1	8.7	8.6	9.0	9.0	8.9	8.8	8.4
Mar	6.8	6.3	6.4	6.6	6.5	6.3	6.3	6.5	7.2	8.0	8.6	8.6	9.0	9.2	9.4	9.3	9.2
Apr	5.7	5.5	5.4	5.3	5.3	5.3	5.8	6.3	7.2	7.9	8.3	8.5	9.1	9.0	9.2	9.2	8.9
May	4.6	4.5	4.4	4.2	4.3	4.4	4.8	5.4	6.2	6.9	7.6	7.6	8.2	8.1	8.3	8.1	7.9
June	4.0	3.9	3.9	3.8	3.7	3.7	4.3	4.9	5.6	6.4	6.9	7.3	7.7	7.6	7.8	7.6	7.8
July	3.7	3.3	3.2	3.3	3.2	3.3	3.5	4.1	4.9	5.8	6.4	6.4	7.2	7.5	7.5	7.6	7.4
Aug.	3.7	3.6	3.4	3.4	3.4	3.3	3.4	3.8	4.4	5.3	5.8	6.2	6.9	6.8	7.0	7.1	7.0
Sept	4.1	4.0	4.0	3.8	4.1	4.1	4.1	4.6	5.3	6.1	6.8	6.9	7.6	7.5	7.9	8.0	7.9
Oct	4.9	4.9	5.0	4.9	5.0	5.0	5.0	5.2	5.8	6.7	7.6	7.8	8.2	8.2	8.6	8.2	7.8
Nov.	6.5	6.1	6.0	6.4	6.3	6.4	6.4	6.7	7.0	7.6	8.4	8.7	9.3	9.1	9.0	8.8	8.4
Dec	6.5	6.4	6.4	6.2	6.3	6.3	6.5	6.7	7.3	7.8	8.1	8.3	8.7	8.7	8.6	8.2	7.6
Year	5.4	5.2	5.1	5.1	5.1	5.1	5.3	5.7	6.3	7.0	7.6	7.8	8.3	8.3	8.4	8.3	8.0

PORTLAND, OREG.

[λ=45° 32′ N.; φ=122° 43′ W.]

Jan	6.9	6.5	6.8	6.4	6.3	6.2	6.5	6.5	6.8	6.9	6.8	7.1	7.1	7.4	7.7	8.0	8.0
Feb	6.9	6.8	6.9	6.9	6.9	7.1	7.0	6.9	7.0	7.2	7.3	7.5	7.9	7.7	7.9	8.4	8.7
Mar	7.2	6.9	7.2	7.2	7.4	7.1	6.8	6.6	6.5	6.9	6.8	7.1	8.0	8.5	9.2	9.2	9.2
Apr	7.9	7.4	7.2	7.2	6.7	6.6	6.8	7.0	6.7	6.9	7.5	8.3	9.1	9.0	9.3	9.6	9.9
May	7.7	7.3	7.0	6.4	6.2	6.1	6.1	6.0	5.9	6.3	6.9	7.4	7.7	8.0	8.1	8.6	9.0
June	7.4	7.1	6.4	5.4	5.1	5.0	4.9	4.6	4.8	5.5	6.7	7.1	7.5	7.8	8.0	8.0	8.6
July	8.6	7.7	6.6	6.2	5.9	5.3	4.7	4.6	4.5	5.3	6.6	7.2	7.3	7.2	7.6	7.8	7.9
Aug.	8.4	7.3	6.1	4.9	4.2	4.2	3.8	3.7	3.6	3.8	5.1	6.4	7.4	7.3	7.6	8.0	8.5
Sept	6.6	6.1	6.2	5.7	5.9	5.7	5.7	5.9	5.7	5.3	5.7	6.4	7.5	7.7	7.9	8.3	8.2
Oct	6.8	7.1	6.9	6.8	6.8	6.8	7.2	7.0	7.1	6.8	6.6	6.9	7.5	7.8	8.0	8.4	8.0
Nov.	7.4	7.9	8.2	8.0	8.0	7.8	7.9	7.9	7.6	7.5	7.6	7.6	8.2	8.2	8.4	8.7	8.7
Dec	8.2	8.6	8.7	8.3	8.1	8.3	8.5	8.5	8.6	8.5	8.7	9.2	10.3	10.1	9.9	10.1	10.2
Year	7.5	7.2	7.0	6.6	6.5	6.4	6.3	6.3	6.2	6.4	6.9	7.4	8.0	8.1	8.3	8.6	8.7

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891–1895—Continued.

NEW YORK, N. Y.

[h_a = 200 ft.; 326 ft. (*a*); reduction factor, 0.44; local time, 4^m fast.] [Seventy-fifth Meridian Time.]

6^h	7^h	8^h	9^h	10^h	11^h	Mid.	Mean.	Red. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1891–95.
12.1	11.6	11.3	11.2	11.0	10.9	10.8	11.7	5.1	89	81	24	26	82	171	84	187	0	Jan.
13.3	12.9	12.9	13.0	13.0	13.1	13.3	13.1	5.8	57	116	16	36	53	105	73	221	0	Feb.
13.5	12.7	12.4	12.5	12.5	12.9	12.8	13.4	5.9	73	132	19	59	58	109	75	218	1	Mar.
13.8	12.8	12.2	12.1	11.6	11.3	11.1	12.2	9.7	56	83	43	101	83	102	66	186	0	Apr.
13.4	12.7	11.9	11.3	11.1	10.5	9.8	11.1	4.9	41	88	56	123	97	124	71	144	0	May.
11.1	10.0	9.3	9.2	8.7	8.3	8.3	9.1	4.0	36	109	43	135	105	152	37	103	1	June.
10.5	9.9	9.3	9.4	9.0	8.6	8.6	9.2	4.0	32	56	18	90	163	184	55	144	1	July.
10.5	9.3	9.0	8.7	8.5	8.6	8.4	8.7	3.8	70	68	24	97	172	127	55	130	1	Aug.
10.6	9.7	9.6	9.7	9.1	8.8	8.8	9.5	4.2	52	84	27	92	138	139	56	132	1	Sept.
12.8	12.4	12.5	12.2	11.8	11.5	11.4	12.0	5.3	57	89	30	51	87	158	73	198	1	Oct.
12.6	13.0	12.5	12.5	12.2	12.1	12.0	12.2	5.4	56	92	28	69	76	156	84	157	0	Nov.
13.2	12.9	12.8	13.0	13.0	12.8	12.4	12.7	11.9	53	72	23	30	78	202	86	199	0	Dec.
12.3	11.7	11.3	11.2	12.0	10.8	10.6	11.2	4.9	671	1,070	351	908	1,191	1,729	816	2,017	8	Year.

a 326 feet from March 15, 1895.

PHILADELPHIA, PA.

[h_a = 184 feet.; reduction factor, 0.55; local time, 0^m.]

11.3	10.9	10.6	10.3	10.2	10.0	10.1	11.1	6.1	54	119	43	42	40	144	64	234	3	Jan.
12.7	12.4	12.0	12.1	12.1	11.8	11.9	12.6	6.9	59	139	29	30	31	105	55	229	0	Feb.
12.3	11.8	11.6	11.4	11.3	11.1	11.1	12.4	6.8	79	148	47	41	36	100	52	239	1	Mar.
12.7	11.9	11.2	10.8	10.7	10.4	10.0	11.4	6.3	66	110	52	62	59	139	43	188	0	Apr.
12.1	10.9	10.2	9.9	9.7	9.5	9.1	10.3	5.7	58	92	60	70	62	178	60	164	1	May.
11.7	10.6	9.2	8.8	8.4	8.0	8.0	9.3	5.1	48	112	76	62	53	186	63	119	0	June.
11.2	10.0	9.0	8.6	8.1	8.1	7.7	9.1	5.0	65	67	42	64	71	200	81	154	0	July.
9.8	8.8	8.0	7.8	7.8	7.4	7.3	8.5	4.7	87	89	42	67	88	175	57	138	1	Aug.
10.2	9.1	8.9	8.8	8.1	7.9	7.5	9.1	5.0	69	104	65	69	69	151	65	125	1	Sept.
10.5	10.3	10.1	10.0	9.5	9.4	9.1	10.5	5.8	76	110	55	31	50	131	81	209	2	Oct.
10.5	10.2	10.2	10.5	10.1	10.0	9.6	10.7	5.9	85	95	41	46	66	119	73	192	1	Nov.
10.6	10.7	10.5	10.5	10.6	10.2	9.8	10.7	5.9	66	84	31	36	48	168	79	231	0	Dec.
11.3	10.6	10.1	10.0	9.7	9.5	9.3	10.5	5.8	814	1,270	583	622	673	1,796	774	2,223	11	Year.

PITTSBURG, PA.

[h_a = 123 ft.; reduction factor, 0.6; local time, 20^m slow.]

7.2	6.8	7.0	7.0	7.2	7.2	6.9	7.3	4.3	41	26	31	111	52	159	155	166	2	Jan.
7.9	7.6	7.3	7.1	7.1	6.9	6.8	7.6	4.6	39	40	50	97	33	103	101	213	1	Feb.
8.6	7.7	7.0	7.1	7.0	7.1	7.1	7.6	4.6	84	59	41	111	50	97	86	211	4	Mar.
8.1	7.3	6.6	6.5	6.2	5.8	5.9	7.0	4.2	99	56	68	108	44	88	92	154	10	Apr.
7.8	6.9	6.1	5.5	5.3	4.8	4.7	6.1	3.6	82	36	39	78	68	125	108	182	24	May.
7.7	6.7	5.8	5.1	4.6	4.4	4.0	5.6	3.4	88	73	53	99	70	132	70	110	23	June.
6.8	6.3	5.2	4.8	4.6	4.0	3.9	5.2	3.1	109	80	47	89	62	116	75	154	10	July.
7.0	6.1	5.0	4.6	4.2	4.1	3.8	5.0	3.0	153	77	52	47	58	88	89	159	20	Aug.
7.2	6.4	5.7	5.2	4.9	4.7	4.3	5.6	3.4	107	47	68	117	58	101	89	114	19	Sept.
7.0	6.4	6.0	5.8	5.4	5.1	5.0	6.2	3.7	74	33	50	95	47	103	124	202	15	Oct.
7.7	7.3	7.2	7.2	6.9	6.9	6.6	7.4	4.4	57	17	39	130	74	121	127	153	3	Nov.
7.2	6.7	6.4	6.6	6.7	6.9	6.6	7.2	4.3	48	21	28	101	85	147	164	143	3	Dec.
7.5	6.8	6.3	6.0	5.8	5.7	5.5	6.5	3.9	982	568	565	1,184	702	1,380	1,281	1,962	135	Year.

PORTLAND, OREG.

[h_a = 213 ft.; reduction factor, 0.50; local time, 3^h 11^m slow.]

7.8	7.6	7.5	6.6	6.6	6.6	6.7	7.0	3.5	93	84	54	126	151	104	21	80	12	Jan.
8.5	8.4	8.4	7.7	7.4	7.2	7.1	7.5	3.8	81	75	42	97	189	100	14	65	14	Feb.
9.3	9.1	8.7	8.1	7.6	7.0	7.0	7.7	3.8	70	48	42	90	192	125	32	128	17	Mar.
9.9	9.8	9.2	8.6	7.6	7.3	7.4	8.1	4.0	94	22	15	98	188	133	31	127	12	Apr.
9.1	9.3	9.2	9.5	9.4	8.6	7.9	7.6	3.8	166	35	18	76	126	89	33	186	14	May.
8.6	8.8	8.8	9.0	8.8	7.9	7.8	7.1	3.6	165	35	10	66	112	93	26	198	14	June.
8.1	8.5	9.0	9.6	9.4	8.9	8.7	7.2	3.6	271	25	9	43	58	32	13	280	13	July.
8.6	9.1	9.3	9.5	8.9	8.8	9.1	6.8	3.4	197	14	7	37	57	25	27	349	30	Aug.
8.5	8.5	8.5	8.3	7.9	7.3	6.9	6.9	3.4	131	21	20	65	174	74	24	190	21	Sept.
8.1	8.3	7.6	7.4	7.1	6.9	6.9	7.3	3.6	118	31	16	76	148	89	18	223	15	Oct.
8.8	8.3	8.0	7.6	7.3	7.5	7.7	8.0	4.0	61	31	22	117	175	121	25	156	12	Nov.
10.0	9.4	8.8	8.2	8.1	7.9	7.9	8.9	4.4	52	33	55	141	245	97	20	94	7	Dec.
8.8	8.8	8.6	8.3	8.0	7.7	7.6	7.5	3.8	1,498	454	310	1,033	1,835	1,083	283	2,076	182	Year.

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891-1895—Continued.

ST. LOUIS, MO.

[λ=38° 38′ N.; φ=90° 12′ W.] [Seventy-fifth Meridian Time.]

1891-95.	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	12.4	12.0	11.9	11.7	11.6	11.6	11.6	11.2	11.6	12.0	12.3	12.7	13.1	13.3	13.5	13.5	13.4
Feb	12.3	12.1	12.1	12.0	11.7	11.6	11.3	11.2	12.1	12.6	13.1	13.1	13.4	13.4	13.6	13.7	13.7
Mar	13.0	12.5	12.2	12.4	12.4	12.4	12.5	12.6	13.5	14.1	14.1	14.4	14.7	15.0	15.5	15.5	15.5
Apr	11.1	11.0	11.2	11.1	11.0	11.0	11.1	11.3	12.1	12.6	13.0	13.1	13.6	13.9	14.3	14.4	14.5
May	9.9	9.8	10.0	9.9	9.5	9.9	10.0	10.5	11.3	11.5	12.5	12.8	13.3	13.6	13.8	13.8	13.7
June	8.4	8.1	7.9	7.8	7.8	7.8	7.5	7.9	8.6	9.5	9.9	10.0	10.8	11.1	11.7	11.9	11.8
July	8.2	7.9	8.0	7.6	7.5	7.5	7.4	8.0	8.6	9.3	9.8	10.3	10.7	11.0	11.3	11.5	11.1
Aug	7.5	7.2	7.0	6.9	6.7	6.9	6.8	6.9	7.5	7.8	8.5	9.0	9.7	9.7	10.0	9.8	9.8
Sept	9.2	8.7	8.5	8.0	8.0	7.7	7.2	7.5	8.0	9.0	9.7	10.2	10.4	10.8	11.2	11.4	11.4
Oct	9.9	9.8	9.4	9.3	9.3	9.3	9.3	9.3	10.1	11.2	11.7	12.0	12.5	12.4	12.7	13.1	13.0
Nov	11.6	11.5	11.6	11.4	11.6	11.5	11.4	11.2	11.8	12.2	12.6	13.1	13.4	13.2	13.4	13.5	13.5
Dec	12.6	12.2	12.1	11.5	11.7	11.7	12.0	11.9	11.9	12.0	12.5	12.8	13.3	13.4	14.0	14.1	14.1
Year	10.5	10.2	10.2	10.0	9.9	9.9	9.8	10.0	10.6	11.2	11.6	12.0	12.4	12.6	12.9	13.0	13.0

ST. PAUL, MINN.

[λ=44° 58′ N.; φ=93° 3′ W.]

Jan	6.9	6.4	6.3	6.2	6.4	6.4	6.5	6.1	6.3	6.8	7.3	8.0	8.4	8.4	8.6	8.7	8.3
Feb. *a*	7.8	7.3	7.0	6.8	6.8	6.6	6.7	6.4	6.5	7.0	7.8	8.6	9.3	9.5	9.9	10.1	10.3
Mar. *a*	7.5	7.0	6.6	6.8	6.7	6.6	6.8	6.7	7.1	7.7	8.7	9.4	10.0	10.1	10.3	10.7	10.4
Apr	7.5	7.1	7.1	7.2	7.5	7.6	7.8	7.7	8.4	9.5	10.2	11.3	11.5	11.5	11.2	11.2	10.9
May	6.4	6.2	6.0	5.9	5.9	6.1	6.3	6.9	7.7	8.7	9.6	10.4	10.6	10.7	10.7	10.7	10.5
June	5.2	5.0	5.1	5.0	5.3	5.2	5.3	5.6	6.8	7.7	8.7	9.5	9.9	10.0	10.1	10.1	9.9
July	4.5	4.5	4.6	4.4	4.4	4.6	4.9	5.1	5.6	6.7	7.7	8.5	9.1	9.1	9.3	9.2	9.0
Aug	4.5	4.2	4.1	4.0	4.4	4.3	4.3	4.6	5.5	6.2	7.2	8.0	8.5	8.7	8.8	9.0	8.9
Sept	6.6	6.2	5.8	5.8	5.5	5.5	5.5	5.6	6.5	7.6	8.8	9.7	10.2	10.5	10.9	10.6	10.3
Oct	6.8	6.5	6.6	6.4	6.5	6.6	6.8	6.6	7.0	8.1	8.8	9.8	10.4	10.2	10.4	10.3	9.7
Nov	7.4	7.3	7.3	7.4	7.2	7.4	7.5	7.5	7.4	7.7	8.4	9.2	9.7	9.5	9.6	9.6	9.3
Dec	6.7	6.6	6.6	6.8	7.0	7.3	7.3	7.2	7.2	7.5	7.9	8.3	8.3	8.5	8.6	8.7	8.2
Year	6.5	6.2	6.1	6.1	6.1	6.2	6.3	6.3	6.8	7.6	8.4	9.2	9.7	9.7	9.9	9.9	9.6

a 464 hours of direction record lost in 1892.

SALT LAKE CITY, UTAH.

[λ=40° 46′ N.; φ=111° 54′ W.]

Jan	3.8	3.9	3.7	3.7	3.8	3.7	3.7	3.8	3.8	4.1	4.1	4.3	5.2	5.6	6.2	6.5	6.7
Feb	4.0	4.2	4.2	4.1	3.9	4.3	4.1	4.1	4.0	4.0	4.3	4.9	5.7	7.0	7.6	7.7	7.9
Mar	5.0	5.3	5.2	5.1	4.8	4.8	4.6	4.3	4.6	4.7	5.0	6.2	7.7	9.2	10.2	10.5	10.6
Apr	4.6	4.5	4.5	4.2	4.4	4.3	4.4	4.3	4.4	4.8	5.9	7.6	8.7	10.2	10.6	10.9	11.2
May	4.4	4.5	4.4	4.5	4.4	4.3	4.2	4.3	4.2	4.4	5.8	7.4	9.1	10.1	10.6	10.7	10.6
June	5.0	5.2	4.8	4.7	4.5	4.1	4.0	4.0	3.6	4.1	5.2	6.8	8.5	9.5	10.1	10.1	10.0
July	4.9	4.6	4.4	4.1	3.9	4.1	3.8	3.9	3.5	3.5	3.9	5.2	6.7	7.8	8.4	8.8	9.1
Aug	5.0	4.9	4.8	4.4	4.2	4.3	4.2	4.0	3.8	3.3	3.5	4.5	6.0	6.9	7.9	8.4	8.7
Sept	5.0	5.0	5.0	5.2	5.1	5.2	5.0	5.1	4.7	4.6	4.7	5.8	7.7	9.0	10.2	10.5	10.6
Oct	4.2	4.5	4.4	4.3	4.0	4.0	4.1	4.4	4.3	3.8	3.8	4.4	5.7	6.9	8.3	9.0	9.4
Nov	4.6	4.4	4.4	4.3	4.4	4.5	4.5	4.4	4.4	4.6	4.5	4.6	5.5	6.4	8.0	8.5	8.3
Dec	4.4	4.3	4.4	4.5	4.4	4.8	4.8	4.8	4.5	4.6	4.7	5.1	6.0	6.5	7.0	7.4	7.1
Year	4.6	4.6	4.5	4.4	4.3	4.4	4.3	4.3	4.2	4.2	4.6	5.6	6.9	7.9	8.8	9.1	9.2

SAN DIEGO, CAL.

[λ=32° 43′ N.; φ=117° 10′ W.]

Jan	3.9	3.8	3.4	3.6	3.7	3.7	3.5	3.9	3.7	3.7	3.5	2.8	3.2	4.2	5.5	6.7	7.5
Feb	4.1	3.9	3.7	3.7	3.8	3.9	3.7	4.0	4.2	4.2	4.1	3.7	4.5	5.7	7.0	8.0	8.9
Mar	4.0	4.1	4.0	3.9	4.1	4.0	4.0	4.0	4.0	3.8	3.7	4.1	5.5	6.8	8.0	8.8	9.2
Apr	3.0	3.0	3.0	3.1	3.2	3.4	3.3	3.4	3.5	3.0	3.2	4.2	6.2	7.6	8.8	9.5	9.7
May	3.3	3.2	3.4	3.4	3.6	3.6	3.7	3.5	3.2	3.3	3.8	5.1	7.0	8.1	9.1	9.7	9.8
June	2.7	2.7	2.8	2.8	2.9	3.0	2.9	2.8	2.8	2.9	3.6	4.9	7.1	8.2	8.7	9.5	9.5
July	2.4	2.1	2.2	2.1	2.1	2.4	2.4	2.5	2.6	2.6	3.3	4.8	6.8	8.1	9.0	9.4	9.5
Aug	2.3	2.1	2.1	2.2	2.0	2.1	2.0	2.2	2.4	2.4	3.1	4.3	6.3	7.9	9.1	9.3	9.4
Sept	2.5	2.5	2.5	2.5	2.7	2.7	2.7	2.7	2.8	2.7	2.9	4.2	6.2	7.9	9.2	9.7	9.6
Oct	2.4	2.6	2.6	2.4	2.5	2.6	2.7	2.9	2.8	2.7	2.6	3.2	4.8	6.7	8.3	9.0	9.1
Nov	3.1	2.9	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	2.8	2.6	4.0	5.4	6.8	8.3	8.4
Dec	3.6	3.7	3.8	3.9	3.8	3.7	3.5	3.8	3.7	3.9	3.6	3.0	3.4	4.4	6.0	7.1	7.9
Year	3.1	3.0	3.0	3.0	3.1	3.2	3.1	3.2	3.2	3.2	3.4	3.9	5.4	6.8	8.0	8.8	9.0

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891–1895—Continued.

ST. LOUIS, MO.

[h_a = 210 ft.; reduction factor, 0.50; local time, 1h 1m slow.] [Seventy-fifth Meridian Time.]

6h	7h	8h	9h	10h	11h	Mid.	Mean.	Red. vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1891–95.
12.8	12.3	12.1	12.2	12.3	12.3	12.2	12.3	6.1	67	71	31	100	88	101	94	191	1	Jan.
13.4	12.3	11.5	11.7	12.0	12.1	12.1	12.4	6.2	75	70	37	92	69	99	68	166	0	Feb.
15.3	14.2	13.0	13.1	12.9	13.1	13.3	13.7	6.8	93	72	47	122	86	120	78	127	0	Mar.
14.2	13.6	12.0	11.1	10.9	10.6	11.0	12.2	6.1	65	89	58	154	94	99	63	97	1	Apr.
13.5	12.7	11.1	10.4	10.1	10.2	10.0	11.4	5.7	105	82	37	124	116	128	54	97	1	May.
11.6	11.0	9.8	9.0	8.8	9.0	8.6	9.4	4.7	69	57	41	97	151	164	71	66	3	June.
11.1	10.6	9.9	8.9	8.7	8.5	8.4	9.3	4.6	89	106	40	73	126	167	68	74	1	July.
9.8	9.1	8.0	7.9	7.8	8.0	7.9	8.2	4.1	131	121	50	68	106	134	62	64	7	Aug.
11.1	10.0	9.1	9.3	9.5	9.5	9.6	9.4	4.7	93	79	30	102	153	158	28	74	3	Sept.
11.9	10.6	10.3	10.4	10.3	10.3	10.3	10.8	5.4	82	44	28	103	151	120	83	129	3	Oct.
12.9	12.0	11.9	12.3	12.0	11.9	12.0	12.2	6.1	81	50	28	141	112	93	79	137	0	Nov.
13.5	12.9	12.8	13.0	13.1	13.1	12.9	12.7	6.4	70	50	28	116	138	125	89	127	0	Dec.
12.6	11.8	11.0	10.8	10.7	10.7	10.7	11.2	5.6	1,019	891	455	1,293	1,389	1,509	838	1,349	21	Year.

ST. PAUL, MINN.

[h_a = 124 ft.; reduction factor, 0.6; local time, 1h 12m slow.]

8.0	7.3	6.9	6.7	6.8	6.9	7.3	7.4	4.4	11	26	32	179	27	139	119	189	21	Jan.
10.0	9.1	8.2	7.9	7.7	7.7	7.8	8.0	4.8	16	44	26	172	36	136	107	132	8	Feb.
10.0	9.0	8.1	7.5	7.5	7.4	7.5	8.2	4.9	21	91	43	158	30	100	79	171	11	Mar.
10.6	10.1	8.6	7.5	7.5	7.6	7.3	8.9	5.3	26	113	61	161	30	63	59	141	12	Apr.
10.2	9.6	8.1	6.8	6.6	6.5	6.6	8.1	4.9	41	101	39	173	51	87	49	183	19	May.
9.8	9.3	8.1	6.6	6.1	6.0	6.0	7.4	4.4	19	65	47	264	51	107	69	89	10	June.
9.0	8.4	7.2	5.7	4.8	4.7	4.7	6.5	3.9	19	41	41	221	51	113	79	149	29	July.
8.5	7.5	6.3	5.6	4.9	4.6	4.6	6.1	3.7	34	45	56	196	50	77	75	176	35	Aug.
9.8	8.4	7.0	6.6	6.8	6.8	6.8	7.7	4.6	11	38	39	268	69	100	83	88	25	Sept.
8.8	7.7	7.2	7.0	7.1	6.9	6.9	7.9	4.7	7	30	33	207	45	130	119	143	30	Oct.
8.4	7.8	7.7	7.6	7.4	7.4	7.3	8.0	4.8	19	24	31	217	40	90	130	152	16	Nov.
7.6	7.2	7.0	7.0	6.9	6.8	6.8	7.4	4.4	19	25	30	211	53	125	122	151	9	Dec.
9.2	8.4	7.5	6.9	6.7	6.6	6.6	7.6	4.6	243	642	479	2,427	532	1,268	1,090	1,766	225	Year.

SALT LAKE CITY, UTAH.

[h_a = 90 ft.; reduction factor, 0.7; local time 2h 27m slow.]

6.4	5.7	4.8	4.2	4.0	4.3	4.3	4.6	3.2	28	20	104	166	102	60	117	131	11	Jan.
7.6	7.3	6.1	5.0	4.7	4.4	4.4	5.2	3.6	25	35	61	153	80	77	94	137	14	Feb.
9.8	8.8	8.0	6.4	5.2	5.0	5.1	6.5	4.5	74	42	60	168	92	56	71	168	12	Mar.
10.8	9.6	8.2	6.7	5.5	4.9	5.0	6.7	4.7	59	55	49	142	58	63	65	201	27	Apr.
10.1	9.8	9.2	7.1	5.4	5.6	5.0	6.7	4.7	62	53	61	150	65	65	60	204	22	May.
9.9	8.9	8.1	6.7	5.5	6.0	5.5	6.4	4.5	72	51	70	184	61	52	38	180	10	June.
9.1	8.5	7.7	7.0	6.2	6.3	5.5	5.9	4.1	64	71	95	194	86	43	31	154	4	July.
9.2	8.3	7.3	6.1	5.6	5.4	5.4	5.7	4.0	53	60	86	217	92	53	34	143	4	Aug.
10.6	9.2	8.0	6.1	5.4	5.1	4.9	6.6	4.6	53	61	76	219	65	43	48	160	1	Sept.
8.9	7.3	5.1	4.2	4.0	4.1	4.4	5.3	3.7	64	49	78	189	55	36	71	182	17	Oct.
7.4	6.2	4.9	4.4	4.6	4.8	4.9	5.3	3.7	50	35	58	224	74	62	70	139	8	Nov.
6.6	5.6	4.8	4.4	4.4	4.3	4.2	5.2	3.6	28	28	62	252	91	77	65	123	17	Dec.
8.9	7.9	6.8	5.7	5.0	5.0	4.9	5.8	4.0	634	561	888	2241	936	682	785	1,883	151	Year.

SAN DIEGO, CAL.

[h_a = 70 ft.; reduction factor, 0.8; local time 2h 49m slow.]

8.0	7.7	6.3	4.7	3.9	3.8	3.7	4.5	3.6	150	137	22	31	33	51	120	169	31	Jan.
8.9	8.5	7.4	5.8	4.3	3.8	3.9	5.2	4.1	75	76	25	37	41	87	176	134	25	Feb.
9.3	8.9	8.0	6.6	5.1	4.3	4.0	5.5	4.4	66	61	17	27	47	108	225	152	42	Mar.
9.5	8.9	7.9	6.9	5.3	3.8	3.0	5.3	4.2	65	37	6	7	23	115	270	168	28	Apr.
9.7	9.0	8.4	7.2	6.0	4.9	4.0	5.7	4.6	35	20	8	13	63	170	286	132	17	May.
9.2	8.7	8.0	6.9	5.5	4.4	3.4	5.3	4.2	28	15	5	12	61	206	272	89	31	June.
9.2	8.5	7.8	7.1	5.8	4.6	3.4	5.0	4.0	35	8	3	5	34	198	282	139	40	July.
9.1	8.4	7.4	6.6	5.0	3.9	2.9	4.8	3.8	24	8	1	5	33	185	327	107	54	Aug.
9.3	8.5	7.5	6.2	4.6	3.5	2.9	5.0	4.0	48	22	6	7	29	104	244	231	28	Sept.
9.0	7.8	6.4	4.6	3.3	2.7	2.6	4.4	3.5	91	59	15	25	50	94	170	175	49	Oct.
8.3	7.3	5.7	3.7	2.9	2.8	3.0	4.2	3.4	106	111	39	31	38	66	124	151	55	Nov.
7.8	7.1	5.8	4.3	3.7	3.7	3.8	4.5	3.6	94	191	61	38	52	41	100	138	29	Dec.
8.9	8.3	7.2	5.9	4.6	3.8	3.4	5.0	4.0	815	746	208	239	503	1,427	2,597	1,785	428	Year.

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891–1895—Continued.

SAN FRANCISCO, CAL.

[λ = 37° 48′ N.; φ = 122° 26′ W.] [Seventy-fifth Meridian Time.]

1891–95.	1h a. m.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h
Jan	6.1	5.9	5.9	5.8	6.1	6.0	6.2	6.3	6.6	6.6	6.8	7.5	8.0	8.3	8.8	9.1	9.6
Feb	7.7	6.9	6.5	6.5	6.4	6.0	6.0	6.0	5.8	5.8	6.0	7.0	7.7	7.8	8.1	8.8	10.1
Mar	8.1	7.7	7.1	7.0	6.6	6.6	6.5	6.5	5.9	5.9	6.4	7.1	8.0	8.5	9.5	11.3	12.7
Apr	9.7	8.6	7.5	7.2	6.8	6.1	5.7	6.0	5.9	6.5	7.0	8.2	8.8	10.1	12.1	14.5	16.4
May	10.3	9.3	8.9	8.4	7.8	7.3	7.2	6.9	6.9	7.0	7.7	8.3	9.1	10.9	13.7	15.6	17.1
June	12.1	10.9	10.0	9.4	8.8	8.1	7.6	7.3	7.1	7.0	7.7	8.6	10.1	12.4	15.7	18.5	20.4
July	13.2	11.6	10.7	10.0	9.6	8.9	8.3	8.2	8.2	8.1	8.7	9.2	10.6	12.4	15.7	18.6	20.7
Aug	11.6	10.4	9.8	9.2	8.9	8.1	7.7	7.6	7.1	7.0	7.6	7.7	9.1	10.7	13.6	16.3	19.0
Sept	9.9	8.9	8.3	7.6	7.1	6.8	6.4	6.3	6.5	6.3	6.9	7.3	8.3	9.1	11.5	14.0	16.4
Oct	7.7	6.5	6.2	5.8	5.3	5.3	5.0	5.0	4.9	4.8	5.0	5.2	5.9	6.7	8.1	10.0	12.1
Nov	5.9	5.6	5.4	5.3	5.3	5.5	5.4	5.5	5.7	5.4	5.6	5.9	6.2	6.3	6.5	7.1	8.6
Dec	6.7	6.9	6.7	6.9	6.9	6.7	6.9	7.1	7.2	7.5	7.5	7.7	8.2	8.1	8.5	8.6	8.9
Year	9.1	8.3	7.8	7.4	7.1	6.8	6.6	6.6	6.5	6.5	6.9	7.5	8.3	9.3	11.0	12.7	14.3

SANTA FE, N. MEX.

[λ = 35° 41′ N.; φ = 105° 57′ W.]

Jan	5.5	5.8	5.7	5.5	6.1	6.0	5.9	6.4	6.5	6.9	7.0	7.9	8.9	9.9	10.0	9.4	8.9
Feb	5.9	6.0	6.1	6.0	5.9	5.9	5.9	5.9	6.0	6.1	7.1	8.1	9.1	9.7	10.1	9.8	9.6
Mar	6.3	5.9	5.8	5.5	5.3	5.3	5.3	5.3	5.2	5.7	8.0	9.8	11.1	12.0	12.5	12.7	12.5
Apr	7.1	7.0	6.4	6.1	5.8	5.2	5.0	5.0	5.2	6.5	8.5	10.1	11.0	11.9	12.6	12.6	13.2
May	6.8	6.9	6.4	5.9	5.3	5.3	5.1	4.8	4.8	6.3	8.1	9.2	9.8	10.5	11.6	12.4	12.4
June	7.9	7.5	7.0	6.5	5.9	5.6	5.3	5.0	4.6	5.8	7.2	8.3	9.1	10.0	11.1	11.4	11.6
July	6.7	6.4	6.0	5.3	4.9	4.5	4.0	3.6	3.9	4.6	5.8	6.5	7.3	7.8	8.7	9.5	9.6
Aug	5.9	5.5	5.0	4.7	4.4	4.0	3.9	3.9	3.7	4.3	5.5	6.0	6.6	7.2	8.0	8.8	8.4
Sept	6.5	6.1	5.4	4.8	4.7	4.2	4.2	3.9	3.9	3.9	5.0	6.0	7.0	7.9	8.6	9.4	9.5
Oct	6.3	5.7	5.0	4.8	4.5	4.5	4.3	4.2	4.3	4.7	5.5	6.8	7.8	8.4	8.8	9.2	9.5
Nov	5.2	5.1	4.9	5.1	5.3	5.3	5.8	5.7	5.7	5.7	6.6	8.3	9.3	9.8	9.7	9.7	9.5
Dec	5.9	5.8	5.5	5.6	5.6	5.4	5.5	5.9	6.2	6.6	7.0	8.1	8.7	9.5	9.8	9.6	9.3
Year	6.3	6.2	5.8	5.5	5.3	5.1	5.0	5.0	5.0	5.6	6.8	7.9	8.8	9.6	10.1	10.4	10.3

SAVANNAH, GA.

[λ = 32° 5′ N.; φ = 81° 5′ W.]

Jan	7.5	7.2	7.4	7.6	7.5	7.4	7.6	7.3	7.5	8.3	9.2	9.7	10.3	10.4	10.4	10.3	9.5
Feb	8.2	7.9	8.0	8.2	8.5	8.7	8.3	8.2	8.8	9.9	10.6	11.2	11.5	11.6	11.6	11.7	11.0
Mar	7.9	7.9	7.7	7.4	7.4	7.4	7.3	7.6	8.9	9.7	9.8	10.2	10.4	10.8	10.9	11.1	10.8
Apr	7.4	6.8	6.6	6.6	6.5	6.6	6.6	7.3	8.7	9.5	10.1	10.6	11.2	11.8	12.4	12.6	12.5
May	6.7	6.1	5.8	5.7	5.8	5.8	6.2	7.2	8.1	8.2	8.6	9.2	9.3	10.4	11.1	11.7	11.6
June	5.5	5.3	5.2	5.0	4.8	5.1	5.6	6.3	7.1	7.4	7.7	8.2	8.7	9.5	10.3	10.7	11.1
July	5.5	5.2	5.1	5.0	5.2	5.3	5.3	6.2	6.6	6.7	6.9	7.3	7.9	8.9	9.5	10.0	10.0
Aug	5.0	4.8	4.9	4.8	4.7	4.7	4.9	5.3	5.9	6.2	6.6	7.1	7.4	8.0	8.7	9.3	9.0
Sept	4.8	4.8	5.0	5.0	5.1	5.3	5.3	5.8	6.7	7.7	8.4	9.1	9.4	9.7	10.1	10.0	9.5
Oct	6.8	6.5	7.0	6.9	7.2	7.4	7.4	7.7	8.6	9.4	10.0	10.2	10.4	10.5	10.5	10.5	10.1
Nov	6.8	6.8	6.8	7.0	7.0	7.2	7.2	7.1	7.4	8.1	8.6	9.1	9.0	9.4	9.3	9.4	8.6
Dec	6.9	6.7	7.0	7.0	7.0	7.2	7.0	6.8	7.3	7.9	8.5	9.0	9.2	9.0	9.2	9.1	8.3
Year	6.6	6.3	6.4	6.4	6.4	6.5	6.6	6.9	7.6	8.2	8.8	9.2	9.6	10.0	10.3	10.5	10.2

WASHINGTON, D. C.

[λ = 38° 54′ N.; φ = 77° 3′ W.]

Jan	5.7	5.9	5.8	5.8	6.0	6.0	6.3	6.4	6.5	7.8	8.7	9.1	10.0	10.0	10.1	9.6	8.3
Feb	7.3	7.2	6.8	6.9	6.9	7.0	7.2	7.2	8.1	9.5	10.4	10.8	11.6	11.5	11.4	11.5	10.4
Mar	7.4	6.9	6.7	6.7	6.6	6.6	6.4	6.9	8.5	9.9	10.4	10.7	11.2	11.4	11.7	11.6	10.9
Apr	6.4	6.3	5.8	5.8	5.6	5.6	5.8	7.4	8.8	9.4	9.8	10.7	11.2	11.5	11.7	11.6	11.3
May	4.6	4.4	4.4	4.4	4.5	4.4	5.1	6 5	7.7	8.3	8.7	9.2	9.4	9.3	9.5	9.5	9.4
June	3.8	3.7	3.5	3.6	3.6	3.6	4.4	5.6	6.4	6.9	7.4	7.8	8.0	8.3	8.4	8.1	7.5
July	3.5	3.5	3.4	3.5	3.4	3.2	3.6	4.9	5.7	6.3	6.9	7.3	7.7	7.9	7.8	7.7	7.2
Aug	3.3	3.2	3.2	3.2	3.2	3.1	3.5	4.3	5.4	6.1	6.6	6.9	7.4	7.5	7.5	7.2	7.0
Sept	3.7	3.5	3.5	3.5	3.2	3.7	3.7	4.2	5.5	6.8	7.3	7.7	7.9	8.0	7.8	7.7	7.3
Oct	4.5	4.5	4.7	4.6	4.6	4.5	4.7	4.8	6.5	8.2	9.1	9.6	10.0	10.2	9.8	9.3	8.1
Nov	5.8	5.6	5.6	5.5	5.4	5.3	5.6	5.6	6.7	8.2	9.2	9.6	10.2	10.3	10.1	9.4	8.0
Dec	5.6	5.3	5.0	4.8	5.4	5.3	5.2	5.2	5.8	7.1	8.2	8.6	9.1	9.0	9.1	8.3	7.2
Year	5.1	5.0	4.9	4.9	4.9	4.9	5.1	5.8	6.8	7.9	8.6	9.0	9.5	9.6	9.6	9.3	8.6

AVERAGE HOURLY VELOCITY OF THE WIND, ETC., FOR THE FIVE YEARS 1891-1895—Continued.

SAN FRANCISCO, CAL.

[h. = 167 ft.; reduction factor, 0.57; local time 3h 10m slow.] [Seventy-fifth Meridian Time.]

6h	7h	8h	9h	10h	11h	Mid.	Mean.	Red vel.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.	1891-95.
9.5	9.0	8.2	7.9	7.4	7.0	6.7	7.3	4.2	106	49	41	130	41	102	88	178	12	Jan.
11.3	11.5	11.3	10.3	9.5	9.2	8.3	7.9	4.5	64	44	29	90	64	155	118	103	10	Feb.
14.0	14.8	14.4	13.4	12.2	10.9	9.6	9.2	5.2	37	34	27	80	65	235	191	69	7	Mar.
17.7	18.4	18.0	16.6	14.4	12.1	10.4	10.6	6.0	12	15	11	56	56	298	218	46	9	Apr.
18.1	18.3	18.3	17.6	15.8	13.5	11.9	11.5	6.6	16	16	6	33	54	385	201	28	5	May.
21.7	21.9	22.0	21.1	19.0	17.2	14.3	13.3	7.6	3	9	6	24	39	404	221	10	4	June.
22.1	22.5	22.2	21.7	19.9	17.5	15.3	13.9	7.9	2	4	4	10	65	479	176	3	1	July.
20.7	20.9	21.1	20.5	18.4	16.2	13.7	12.6	7.2	1	5	3	10	96	437	187	4	2	Aug.
18.5	18.9	19.0	18.0	16.0	13.2	11.3	10.9	6.2	15	8	9	29	73	340	206	24	13	Sept.
13.6	14.1	14.6	14.1	12.2	10.2	8.6	8.2	4.7	42	24	17	44	53	266	227	56	17	Oct.
9.4	9.9	10.3	9.5	8.5	7.7	6.7	6.8	3.9	89	42	31	81	57	144	135	121	20	Nov.
8.9	8.7	8.2	8.0	7.2	7.0	6.9	7.6	4.3	127	70	55	139	55	79	77	138	5	Dec.
15.5	15.7	15.6	14.9	13.4	11.8	10.3	10.0	5.7	514	320	239	722	717	3,325	2,044	779	104	Year.

SANTA FE, N. MEX.

[h. = 50 ft.; reduction factor, 0.9; local time 2h 4m slow.]

8.4	6.9	5.1	4.7	4.9	5.1	5.2	6.8	6.1	94	251	57	82	43	96	37	72	13	Jan.
9.1	8.5	6.9	5.7	5.3	6.0	6.0	7.1	6.4	79	150	48	76	52	131	43	82	17	Feb.
12.4	11.9	11.0	7.9	7.0	6.8	6.6	8.2	7.4	78	116	41	101	60	168	47	122	10	Mar.
13.0	12.9	12.1	9.6	7.1	7.1	7.3	8.7	7.8	71	92	48	121	51	172	47	112	7	Apr.
12.5	12.6	11.8	9.9	7.6	7.2	7.2	8.3	7.5	45	97	53	158	58	198	40	89	7	May.
11.4	11.5	10.9	9.6	7.8	7.8	8.2	8.2	7.4	34	75	50	198	56	206	32	65	5	June.
10.0	9.5	9.7	9.2	7.9	7.1	6.7	6.9	6.2	51	113	86	176	53	137	42	73	12	July.
8.5	8.6	8.0	7.4	7.2	7.1	6.9	6.2	5.6	53	124	92	190	54	104	33	77	19	Aug.
9.5	8.9	7.8	6.3	6.8	7.3	7.5	6.5	5.8	37	100	57	201	54	155	39	68	21	Sept.
8.9	8.0	6.0	5.4	5.9	6.1	6.2	6.3	5.7	47	116	47	206	41	148	37	80	21	Oct.
9.1	7.0	5.0	5.2	5.4	5.5	5.6	6.6	5.9	86	178	41	146	38	109	28	72	23	Nov.
8.8	7.0	5.6	5.7	6.1	6.5	6.8	6.9	6.2	96	239	47	90	35	91	51	74	22	Dec.
10.1	9.4	8.3	7.2	6.6	6.6	6.7	7.2	6.5	769	1,651	667	1,732	595	1,715	474	986	176	Year.

SAVANNAH, GA.

[h. = 86 ft.; reduction factor, 0.8; local time 24m slow.]

8.7	8.0	7.8	7.7	7.7	7.7	7.8	8.4	6.7	63	99	40	37	71	120	148	163	3	Jan.
10.2	8.8	8.2	8.0	7.9	7.9	8.0	9.3	7.4	54	128	35	59	85	98	88	128	2	Feb.
10.0	9.0	8.2	8.1	7.7	7.8	8.2	8.8	7.0	46	72	58	94	141	95	82	155	1	Mar.
13.7	9.9	8.3	7.9	7.9	7.6	7.6	9.0	7.2	33	62	61	103	217	87	80	72	4	Apr.
11.1	9.5	7.7	7.3	7.0	6.9	7.0	8.1	6.5	41	68	71	126	194	88	72	76	7	May.
10.8	9.2	7.4	6.7	6.4	6.0	5.9	7.3	5.8	25	76	69	157	196	121	49	23	3	June.
9.6	8.1	6.7	6.4	6.0	5.5	5.8	6.9	5.5	30	69	35	96	154	210	108	37	4	July.
8.7	7.7	6.5	5.9	5.7	5.6	5.3	6.4	5.1	39	68	44	100	166	190	85	49	4	Aug.
8.5	6.7	6.3	6.0	5.4	5.1	5.1	6.9	5.5	67	200	96	145	94	40	35	36	7	Sept.
8.6	7.5	7.1	7.1	7.2	7.0	7.1	8.3	6.6	134	202	54	70	49	51	67	115	3	Oct.
7.2	7.1	6.8	6.7	6.8	6.8	7.0	7.6	6.0	99	111	39	67	69	89	76	165	5	Nov.
7.4	7.0	6.9	7.1	7.3	7.1	7.2	7.6	6.0	79	128	49	64	97	81	78	161	3	Dec.
9.5	8.2	7.3	7.1	6.9	6.8	6.9	7.9	6.3	708	1,284	653	1,122	1,533	1,270	969	1,179	46	Year.

WASHINGTON, D. C.

[h. = 67 ft.; reduction factor, 0.8; local time 8m slow.]

6.9	6.9	6.8	6.6	6.5	6.0	5.8	7.2	5.8	99	72	34	38	137	71	84	193	16	Jan.
9.2	8.5	7.8	7.6	7.7	7.5	7.5	8.6	6.9	93	98	25	27	113	63	62	187	8	Feb.
9.9	8.5	7.6	7.6	7.5	7.5	7.3	8.6	6.9	109	116	39	49	104	57	57	204	10	Mar.
10.0	8.4	7.0	6.5	6.6	6.7	6.5	8.2	6.6	71	89	37	74	145	54	52	191	6	Apr.
8.6	7.6	6.3	5.6	5.4	4.8	4.8	6.8	5.4	65	94	48	65	189	61	76	133	6	May.
6.9	5.7	4.7	4.1	3.8	3.8	3.9	5.6	4.5	75	97	53	59	161	88	64	102	21	June.
6.8	5.6	4.2	3.8	3.5	3.5	3.4	5.2	4.1	82	64	35	54	193	85	79	133	19	July.
6.3	5.1	4.0	3.6	3.4	3.5	3.4	4.9	3.9	100	92	54	76	174	58	52	110	28	Aug.
6.1	4.8	4.0	3.9	3.7	3.5	3.5	5.2	4.1	91	101	84	64	151	68	50	88	24	Sept.
6.3	5.5	5.3	5.3	5.2	5.2	5.1	6.5	5.2	105	91	29	41	125	62	68	203	21	Oct.
6.9	6.3	6.3	5.9	5.9	5.9	5.7	7.1	5.7	103	63	25	49	161	43	67	197	11	Nov.
6.3	6.1	6.2	6.1	5.8	5.7	5.5	6.5	5.2	110	44	28	37	172	66	78	207	22	Dec.
7.5	6.6	5.8	5.6	5.4	5.3	5.2	6.7	5.4	1,101	1,021	491	634	1,826	776	790	1,928	198	Year.

Blank page retained for pagination

PART III.

MONTHLY AND ANNUAL METEOROLOGICAL SUMMARIES FOR ONE HUNDRED AND FORTY-TWO WEATHER BUREAU STATIONS.

EXPLANATION OF THE TABLES.

For a detailed account of the methods of reduction, etc., the reader is referred to the article on that subject, page 37, Report of the Chief of the Weather Bureau, 1891–92.

Pressure.—The barometer used at Weather Bureau stations for personal observations is the ordinary portable mercurial open cistern. Each instrument is compared with the substandard at Washington before being issued, and a certificate is given showing both the corrections to the attached thermometer and the so-called correction for instrumental error. The latter is not applied except when it exceeds $\pm .006$.

The monthly means and the extremes given in the summaries have been reduced to 32° F., but not to standard gravity. The latter correction is given for each station at the head of the table. Both means and extremes have been deduced from the personal observations at 8 a. m. and 8 p. m., seventy-fifth meridian time.

Temperature.—The temperature of the air at 8 a. m. and 8 p. m., seventy-fifth meridian time, is obtained by the use of the whirled dry-bulb thermometer. The latter is a part of the whirled psychrometer and is mounted in the wooden-roof thermometer shelter adopted in 1885. The means of these observations are given in the columns headed 8 a. m. and 8 p. m., respectively.

The maximum thermometer used is of the mercurial Negretti and Zambra pattern, having a constriction in the bore of the tube below the scale.

The minimum temperature is obtained by the use of the ordinary Rutherford alcohol minimum thermometer. Both instruments are read and recorded twice daily, at 8 a. m. and 8 p. m., seventy-fifth meridian time. The maximum thermometer is set daily at 8 a. m. and the minimum at 8 p. m. The extremes given in the summaries are for the civil day, midnight to midnight. The monthly means have been obtained by dividing the sum of the mean maxima and mean minima temperatures by 2.

Moisture.—The monthly means of the dew-point, relative humidity, and vapor pressure are given as computed directly from the original daily observations.

In using the tables by means of which the amount of atmospheric moisture is computed from the readings of the whirled psychrometer, that one which gives the influence on the psychrometer of the prevailing pressure has been neglected. Caution should be exercised in using the published vapor pressure, dew-point, and relative humidity for high stations as computed by tables appropriate for low stations. The accuracy at present attained is confessedly below the demands of special laboratory studies, the needs of climatologists, and others, but answers fairly well for the use of forecast officials in the current daily routine of weather predictions.

The rain gauges used at the regular Weather Bureau stations have a circular catchment area of about 8 inches diameter, and the snow, hail, or sleet caught within them is melted and measured as water. The rain gauge proper is set within an inclosing cylinder of 8 inches diameter and 2 feet high, which serves as an overflow attachment in the case of heavy rains and as a snow gauge in the winter season.

The sum total of the depth of rain and melted snow is measured to within 0.01 inch not only at the end of every shower, but also at 8 a. m. and 8 p. m., standard time, daily. By adding these two regular observations we obtain the total precipitation for the twenty-four hours preceding 8 p. m. of the civil day to which it is accredited.

The snow caught and retained in the gauge is melted and measured as water. No correction is applied for the snow that is lost out of the gauge by the eddying action of the wind; consequently in some cases the record is less than would be given if the observer had measured cylinders of snow cut from the spots representing the average snowfall on the ground. When it is known that the catch of the snow gauge is markedly deficient, an independent ground measurement is made and used as the official record. The loss of both rain and snow caused by high winds is undoubtedly larger at the regular telegraph stations of the Weather Bureau than is the case at the voluntary stations whose gauges are located in the open country and near the ground, but this loss does not appear to be so large as to make the monthly and annual sums derived from these two classes of gauges wholly inconsistent with each other; on the contrary, except at a few stations, the differences between the annual rainfall at city and country gauges are not larger than is plausibly due to actual differences in the geographical distribution of rain.

By the maximum precipitation in twenty-four hours is meant the actual measurements for any twenty-four hours; it does not refer to the rate of rainfall for twenty-four hours, as deduced from short, heavy showers.

The number of days with precipitation amounting to 0.01 and 0.04 inch, respectively, relates to the rainfall from 8 p. m. to 8 p. m. and not from midnight to midnight.

The cloudiness recorded in the summaries is derived from personal observations. The proportion of sky covered with clouds is estimated by the observer at 8 a. m. and 8 p. m., seventy-fifth meridian time, on a scale of 0–10.

The two simultaneous observations can not be combined into a normal daily mean in the present state of our knowledge of the diurnal variation in cloudiness, and are therefore given separately. In order, however, to obtain a general record of the sunshine as affecting the growth of plants, the observer keeps some memoranda of the cloudiness, sufficient to enable him at the end of the day to assign a percentage representing the average condition of the sky from sunrise to sunset; the resulting average for each month is given in the column of "daylight."

The number of days that are clear, as given under "number of days, etc.," include those on which the daylight cloudiness has been 0, 1, 2, or 3 tenths; the days partly cloudy are those on which the daylight cloudiness has been 4, 5, 6, or 7 tenths; the cloudy days are those having 8, 9, or 10 tenths of cloudiness during daylight.

Wind.—The velocity of the wind is recorded at all Weather Bureau stations; the direction and velocity are recorded at about one-half of the stations on what is known as the "triple register." The records from 28 of the stations that are furnished with triple registers will be found in Part II. On some of these instruments the direction of the wind is recorded every five minutes, while on the latest pattern a record is made every minute.

The maximum velocities given are for five-minute periods.

A wind velocity of 40 miles per hour is considered as a gale.

Number of days.—The number of days with snow includes all of those on which at least 0.01 inch of melted snow, corresponding to about one-tenth of an inch of unmelted snow, has fallen in the twenty-four hours preceding 8 p. m.

The number of days with hail includes all of those on which at least a trace of hail fell.

No record of amounts of dew is given.

The number of days with fog includes all of those on which fog prevailed for at least an hour, and was dense enough to obscure objects 1,000 feet distant.

References and abbreviations.—H = height of barometer cistern above mean sea level; h_t = height of thermometer above ground; h_r = height of rain gauge above ground; h_a = height of anemometer above ground.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896.

ABILENE, TEX.

[λ = 32° 23′ N.; φ = 99° 40′ W.; gravity corr., −0.03.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	28.29	28.89	27.84	37.6	48.0	54.9	35.8	45.4	74	16	33	36	84	67	.202	.226	1.44	0.80	4.6	5.2	6.1
February	28.23	28.59	27.71	40.8	54.4	61.4	38.9	50.2	74	24	32	34	72	48	.189	.201	.78	.37	3.9	4.2	4.5
March	28.19	28.65	27.74	43.3	61.1	68.1	41.1	54.6	90	23	35	33	73	39	.216	.194	.14	.06	5.2	4.1	5.0
April	28.16	28.75	27.81	58.9	74.2	79.5	57.5	68.5	96	28	50	48	74	44	.389	.376	1.11	.98	4.8	4.8	5.6
May	28.08	28.32	27.79	68.9	86.2	90.0	67.5	78.8	105	52	60	53	74	36	.523	.429	.70	.66	3.6	4.2	4.3
June	28.15	28.43	27.87	73.4	90.9	95.5	70.7	83.1	105	56	61	53	66	31	.537	.420	2.17	1.40	3.3	2.3	3.4
July	28.24	28.40	28.08	73.9	89.0	93.0	72.5	82.8	99	66	64	57	73	37	.607	.471	1.68	.86	2.9	3.2	4.3
August	28.24	28.46	27.99	73.9	89.9	94.9	73.1	84.0	101	61	61	56	66	36	.540	.458	1.54	1.48	1.9	2.5	4.3
September	28.21	28.53	27.96	65.3	78.7	85.3	64.2	74.8	99	42	57	55	77	50	.491	.448	4.14	3.58	4.2	3.6	4.9
October	28.24	28.47	28.00	54.9	64.5	71.1	53.4	62.2	86	43	51	54	87	70	.384	.421	4.18	1.43	4.7	5.2	5.8
November	28.29	28.82	27.84	46.8	55.6	62.9	43.1	53.0	82	21	39	40	74	58	.276	.281	.38	.37	4.6	2.1	3.4
December	28.36	28.76	27.94	39.9	53.5	60.9	38.0	49.4	76	17	32	34	76	52	.194	.211	2.48	1.96	2.7	2.4	3.5
Year	28.22	28.89	27.71	56.5	70.5	76.5	54.6	65.6	105	16	48	46	75	47	.379	.345	20.74	3.58	3.8	3.6	4.6

ALBANY, N. Y.

[λ = 42° 39′ N.; φ = 73° 45′ W.; gravity corr., −0.01.]

January	30.11	30.51	29.53	17.4	21.4	27.0	13.5	20.2	40	−14	14	17	84	81	.088	.097	0.98	0.37	6.1	6.1	6.5
February	29.79	30.51	28.64	21.9	26.3	32.7	17.0	24.8	51	−16	18	21	84	81	.110	.129	4.03	1.89	6.6	6.9	6.7
March	29.89	30.55	29.12	24.1	28.6	35.2	19.0	27.1	58	− 3	20	23	83	78	.116	.126	4.66	1.22	5.7	4.4	5.6
April	30.02	30.45	29.57	44.9	53.0	60.6	39.8	50.2	88	22	39	42	79	67	.250	.291	.98	.34	4.9	4.1	4.9
May	29.91	30.33	29.59	59.8	65.8	74.1	53.2	63.6	91	42	50	49	73	58	.376	.369	1.55	.69	5.6	4.5	5.7
June	29.88	30.22	29.48	64.4	68.6	77.7	57.7	67.7	91	47	56	56	76	66	.460	.459	2.49	.66	4.4	4.9	5.3
July	29.90	30.27	29.52	70.7	75.4	83.8	64.6	74.2	94	56	63	63	78	67	.593	.592	3.57	1.70	5.1	5.9	5.3
August	29.93	30.25	29.63	67.8	73.9	82.4	62.7	72.6	95	50	62	61	82	66	.573	.569	2.25	.88	4.0	3.7	3.6
September	29.95	30.27	29.51	57.7	63.7	72.0	52.5	62.2	90	40	52	54	83	72	.407	.430	3.31	1.38	4.7	4.6	5.2
October	29.96	30.54	29.52	44.5	49.3	56.0	40.8	48.4	67	29	41	42	87	76	.261	.272	1.53	1.03	6.1	5.7	6.9
November	30.09	30.69	29.42	41.2	44.4	51.4	36.7	44.0	67	29	38	38	87	78	.241	.243	1.80	.77	7.0	5.5	6.6
December	30.09	30.85	29.33	22.8	26.9	33.4	19.0	26.2	50	− 7	19	22	84	79	.112	.121	.73	.50	5.3	5.6	6.3
Year	29.96	30.85	28.64	44.8	49.8	57.2	39.7	48.4	95	−16	39	41	82	72	.299	.308	27.88	1.89	5.5	5.2	5.7

ALPENA, MICH.

[λ = 45° 5′ N.; φ = 83° 30′ W.; gravity corr., 0.00.]

January	29.42	29.91	28.89	21.3	23.0	26.6	17.6	22.1	36	− 6	17	18	82	78	.098	.101	1.56	0.54	8.7	7.5	8.2
February	29.18	29.86	28.58	18.6	22.0	27.6	14.1	20.8	41	−11	13	16	77	76	.087	.097	.91	.26	6.5	3.5	5.1
March	29.36	29.87	28.62	19.0	25.5	30.5	15.5	23.0	52	0	14	19	77	75	.086	.112	.49	.30	5.5	4.3	5.0
April	29.37	29.92	28.92	40.4	44.2	51.3	35.2	43.2	78	13	36	37	86	77	.234	.234	2.46	.54	6.8	6.1	6.3
May	29.28	29.73	28.67	55.3	55.5	65.4	47.7	56.6	90	35	47	46	74	72	.326	.317	2.94	1.52	4.8	4.5	5.3
June	29.32	29.63	28.99	60.7	64.9	70.7	51.9	61.3	86	41	51	52	72	67	.388	.407	3.09	1.50	3.1	2.8	3.6
July	29.34	29.55	29.04	63.2	68.0	74.5	56.8	65.6	89	46	56	57	77	70	.446	.474	.62	.27	5.1	5.1	6.1
August	29.35	29.82	28.98	62.4	66.8	74.4	56.3	65.4	93	40	57	58	82	74	.478	.496	6.78	2.44	4.2	4.1	4.8
September	29.36	29.72	28.74	50.8	55.4	61.0	45.9	53.4	75	28	47	49	88	86	.341	.360	6.00	2.81	5.9	6.2	6.2
October	29.40	29.80	28.94	39.1	43.6	49.8	35.8	42.8	65	25	36	37	87	78	.216	.228	.84	.42	5.2	4.8	5.2
November	29.38	29.89	28.56	33.7	34.8	41.5	29.1	35.3	64	8	30	30	87	83	.180	.183	3.44	1.13	7.6	6.9	7.4
December	29.45	30.00	28.87	24.5	28.0	31.9	21.4	26.6	47	4	21	23	85	81	.119	.127	1.01	.50	7.9	6.8	7.4
Year	29.35	30.00	28.56	40.8	44.3	50.4	35.6	43.0	93	−11	35	37	81	76	.250	.261	30.14	2.81	5.9	5.2	5.9

AMARILLO, TEX.

[λ = 35° 13′ N.; φ = 101° 50′ W.; gravity corr., −0.02.]

January	26.28	26.74	25.93	31.4	42.0	51.5	27.6	39.6	68	8	23	21	73	49	.128	.123	0.76	0.60	4.0	4.7	5.5
February	26.24	26.61	25.68	31.4	44.8	52.0	28.4	40.2	73	13	23	20	71	43	.122	.111	.41	.22	4.3	4.3	4.7
March	26.21	26.64	25.76	32.3	50.9	57.0	28.9	43.0	82	14	20	17	66	34	.113	.098	.21	.12	4.7	5.2	5.2
April	26.15	26.69	25.45	49.0	68.8	74.4	45.2	59.8	86	24	33	26	60	25	.217	.171	1.95	1.70	4.2	4.6	4.7
May	26.15	26.36	25.90	58.4	78.7	83.1	55.7	69.4	98	42	46	32	66	26	.334	.219	2.20	1.12	4.6	5.9	5.0
June	26.27	26.55	25.96	66.3	84.3	89.3	62.7	76.0	99	51	54	45	67	31	.423	.324	2.31	.66	5.6	6.6	5.5
July	26.34	26.46	26.19	66.4	79.6	85.2	63.8	74.5	92	59	60	56	81	49	.516	.461	7.04	2.44	5.6	5.8	5.6
August	26.34	26.57	26.08	66.6	84.2	89.2	64.7	77.0	96	52	55	50	68	34	.437	.367	.68	.39	3.6	5.3	4.4
September	26.30	26.58	26.03	56.4	72.3	78.1	54.8	66.4	95	38	51	48	83	47	.386	.355	2.45	.78	4.8	5.3	5.0
October	26.30	26.57	25.92	46.4	56.5	64.5	43.8	54.2	82	33	42	44	86	65	.280	.290	3.09	1.50	6.5	6.2	6.1
November	26.28	26.74	25.79	34.3	45.7	55.9	29.6	42.8	82	8	27	25	77	46	.162	.158	.35	.31	3.9	3.7	4.0
December	26.35	26.76	25.96	34.9	47.1	55.5	31.1	43.3	72	17	26	25	70	46	.146	.143	2.83	2.60	3.1	3.1	3.2
Year	26.27	26.76	25.45	47.8	62.9	69.6	44.7	57.2	99	8	38	34	72	41	.272	.235	24.28	2.60	4.6	5.1	4.9

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896.

ABILENE, TEX.

[H = 1,749 ft.; h_t = 47 ft.; h_r = 36 ft.; h_a = 54 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	8.2	N.	38	NW.	0	15	3	1	11	14	7	4	6	1	11	4	16	9	6	0	0	5	1	0	9	1	0
February	10.4	SW.	46	NW.	2	6	7	2	3	9	8	11	10	2	12	12	5	6	3	0	0	0	0	0	4	1	0
March	12.1	N.	44	NW.	1	17	4	1	7	11	11	4	7	0	8	20	3	4	3	0	0	2	0	0	7	0	0
April	14.8	SE.	60	SW.	3	4	0	2	22	17	12	0	3	0	7	16	7	2	2	0	0	1	0	2	1	3	0
May	13.9	S.	30	SW.	0	3	2	1	19	21	13	0	3	0	14	11	6	3	3	0	0	0	0	14	0	3	0
June	9.6	SE.	30	NW.	0	4	5	2	26	14	6	2	1	0	16	12	2	6	6	0	0	0	0	25	0	5	0
July	9.5	S.	31	SE.	0	2	5	0	20	30	4	0	1	0	11	14	6	7	5	0	0	0	0	23	0	4	0
August	8.9	S.	25	NW.	0	4	1	2	27	15	11	0	1	0	15	11	5	3	3	0	0	0	0	27	0	4	0
September	8.9	SE.	34	SW.	0	12	3	1	16	13	7	1	7	0	11	8	11	6	5	0	0	0	0	13	0	1	0
October	7.4	S.	36	NW.	0	9	5	2	17	11	5	1	12	0	9	9	13	14	10	0	0	1	0	0	0	2	0
November	12.2	SW.	40	S.	1	12	8	1	8	15	11	0	5	0	18	7	5	3	1	0	0	1	2	0	5	1	0
December	8.2	SW.	32	SW.	0	11	3	1	10	11	17	5	4	0	17	9	5	5	4	0	0	1	0	0	9	1	0
Year	10.3	SE.	60	SW.	7	99	46	16	186	182	112	28	60	3	149	133	84	68	51	0	0	11	3	104	35	26	0

ALBANY, N. Y.

[H = 97 ft.; h_t = 84 ft.; h_r = 99 ft.; h_a = 113 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.4	N.	28	W.	0	20	1	0	3	12	2	12	12	0	7	11	13	8	7	8	0	1	22	0	30	0	0
February	9.5	W.	48	E.	1	14	1	0	3	15	0	14	11	0	7	8	14	15	9	12	0	1	13	0	25	0	0
March	11.1	W.	38	W.	0	10	2	1	4	12	1	17	15	0	11	9	11	15	12	9	0	2	14	0	28	0	0
April	8.0	S.	36	W.	0	12	2	3	5	18	1	7	12	0	13	9	8	7	5	1	0	0	1	0	10	2	0
May	8.9	S.	36	SE.	0	9	1	4	4	27	0	10	7	0	8	16	7	12	9	0	0	0	0	2	0	2	0
June	7.7	S.	25	SE.	0	5	2	2	6	25	1	12	7	0	10	13	7	10	7	0	0	0	0	1	0	3	0
July	7.5	S.	26	W.	0	3	4	0	6	24	1	15	9	0	11	14	6	14	11	0	0	0	0	4	0	5	0
August	6.7	S.	34	W.	0	5	6	3	6	24	2	9	7	0	17	13	1	10	6	0	0	0	0	9	0	2	0
September	8.2	S.	36	SE.	0	12	1	1	9	20	0	8	9	0	13	9	8	9	8	0	0	0	0	0	0	2	0
October	7.3	N.	25	SE.	0	19	1	0	4	12	2	11	12	1	8	3	20	14	6	0	0	2	0	0	3	0	0
November	8.6	S.	36	SE.	0	7	1	0	5	23	1	11	12	0	7	10	13	13	9	1	0	0	1	0	10	1	0
December	8.1	S.	32	SE.	0	15	1	1	1	24	0	5	15	0	6	13	12	3	3	1	0	0	14	0	24	0	1
Year	8.2	S.	48	E.	1	131	23	15	56	236	11	131	128	1	118	128	120	130	92	32	0	6	65	16	130	17	1

ALPENA, MICH.

[H = 609 ft.; h_t = 61 ft.; h_r = 54 ft.; h_a = 65 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.5	W.	34	NW.	0	5	3	6	8	7	6	15	11	1	4	6	21	14	8	13	0	0	20	0	31	0	0
February	11.1	NW.	35	NW.	0	2	3	5	4	3	8	12	21	0	10	13	6	11	6	10	0	0	17	0	28	0	0
March	11.3	NW.	38	NW.	0	7	5	2	9	3	8	10	18	0	9	14	8	11	4	6	0	0	18	0	29	0	1
April	10.5	SE.	35	SE.	0	6	2	10	14	7	3	5	12	1	6	11	13	17	13	3	0	1	2	0	9	4	1
May	10.5	SE.	43	SW.	2	3	3	8	10	4	8	7	10	0	9	13	9	14	11	0	0	2	0	1	0	5	0
June	7.7	SE.	27	W.	0	6	2	5	18	3	3	12	11	0	17	8	5	11	7	0	1	0	0	0	0	4	0
July	7.5	NW.	31	NW.	0	6	5	5	8	7	7	6	18	0	7	14	10	8	4	0	0	1	0	0	0	1	0
August	8.0	NW.	38	N.	0	2	4	2	12	5	12	8	17	0	13	13	5	16	15	0	1	0	0	1	0	6	0
September	9.5	NW.	40	NW.	1	6	5	6	6	8	8	5	16	0	8	11	11	17	13	0	0	0	0	0	1	0	0
October	9.0	NW.	28	SE.	0	5	2	3	14	5	8	8	17	0	11	12	8	10	5	2	0	2	0	0	9	0	0
November	11.6	SW.	37	SW.	0	0	2	5	5	8	11	18	11	0	6	6	18	17	12	4	0	1	7	0	20	1	0
December	8.8	SW.	36	NW.	0	5	4	5	1	10	17	9	11	0	3	11	17	8	6	6	0	0	13	0	28	0	0
Year	9.6	NW.	43	SW.	3	53	40	62	118	70	99	115	173	2	103	132	131	154	104	44	2	7	77	2	155	21	2

AMARILLO, TEX.

[H = 3,691 ft.; h_t = 54 ft.; h_r = 46 ft.; h_a = 61 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	15.2	S.	48	SW.	5	17	2	1	8	18	4	7	5	0	8	13	10	5	3	2	0	4	1	0	24	0	0
February	15.9	N.	66	N.	9	17	1	2	2	10	12	8	6	0	12	10	7	8	3	6	0	0	1	0	20	0	0
March	19.7	S.	62	N.	13	13	4	4	3	17	4	12	5	0	13	8	10	6	3	2	0	0	2	0	20	0	0
April	20.7	S.	66	W.	11	3	0	0	2	33	10	8	4	0	12	9	9	8	5	0	2	1	0	0	2	5	0
May	19.5	S.	60	S.	13	7	2	3	2	28	13	4	2	1	12	13	6	6	5	0	1	0	0	8	0	7	0
June	17.6	S.	64	N.	12	9	2	10	11	21	3	2	1	1	7	15	8	8	7	0	0	1	0	18	0	10	0
July	15.9	S.	56	W.	4	6	0	4	5	38	4	4	0	1	12	9	10	10	10	0	0	0	0	4	0	8	0
August	15.0	S.	46	S.	3	6	0	1	2	47	3	1	2	0	14	11	6	4	3	0	0	0	0	20	0	1	0
September	15.0	S.	48	N.	3	13	1	2	3	28	9	3	1	0	11	8	11	8	7	0	0	1	0	5	0	4	0
October	12.9	S.	46	W.	3	7	1	8	4	25	4	4	9	0	8	6	17	9	7	0	0	0	0	0	0	0	0
November	16.2	S.	56	S.	9	12	5	4	1	25	8	2	3	0	16	8	6	4	2	0	0	1	3	0	17	1	0
December	14.1	S.	42	SE.	2	14	5	1	4	16	10	7	5	0	18	9	4	3	3	0	0	3	0	0	16	0	0
Year	16.5	S.	66	N.	87	124	23	40	47	306	84	62	43	3	143	119	104	79	58	10	3	11	7	55	99	36	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

ASTORIA, OREG.

[λ=46° 57′ N.; φ=124° W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January						48.0	38.8	43.4	58	29							12.54	1.84			
February						51.6	41.3	46.4	62	31							10.48	1.37			
March						50.7	37.8	44.2	61	24							5.72	.73			
April						53.1	40.2	46.6	64	32							9.19	2.01			
May						57.6	44.9	51.2	68	39							6.96	1.12			
June						65.1	50.4	57.8	84	43							3.35	1.42			
July						71.7	56.5	64.1	86	51							.01	.01			
August						69.8	57.5	63.6	85	56							1.81	.45			
September						67.3	51.7	59.5	84	45							2.62	.94			
October						60.0	48.5	54.2	70	45							6.44	2.53			
November						46.0	37.1	41.6	58	19							16.56	2.38			
December						50.3	41.6	46.0	59	33							19.14	4.31			
Year						57.6	45.5	51.6	86	19							94.82	4.31			

ATLANTA, GA.

[λ=33° 45′ N.; φ=84° 23′ W.; gravity corr., —0.03.]

January	28.98	29.34	28.46	36.9	43.6	48.8	34.8	41.8	67	14	33	38	86	81	.202	.239	3.12	1.39	5.9	5.6	5.6
February	28.83	29.30	28.04	39.7	48.4	54.5	36.1	45.3	69	10	32	37	73	54	.199	.198	3.04	.96	5.8	3.8	4.3
March	28.91	29.34	28.23	42.9	52.7	58.7	39.7	49.2	80	24	38	38	81	58	.242	.248	3.29	1.02	6.1	5.7	5.8
April	29.00	29.22	28.76	58.8	69.8	75.7	55.7	65.7	89	36	49	51	70	53	.371	.404	.58	.30	4.7	3.7	4.1
May	28.91	29.16	28.76	68.5	78.1	85.0	64.8	74.9	91	57	62	60	80	57	.557	.536	1.95	.88	3.8	5.5	4.7
June	28.87	29.14	28.58	70.2	78.2	83.9	66.4	75.2	94	55	64	64	81	64	.603	.601	2.66	.71	4.2	5.1	4.0
July	28.97	29.16	28.57	72.8	79.8	86.2	70.2	78.2	96	60	70	70	89	73	.724	.724	7.55	3.26	6.3	6.2	5.3
August	28.93	29.07	28.80	74.1	82.8	90.0	70.7	80.4	96	64	68	66	80	59	.678	.651	1.97	1.06	3.8	4.8	3.0
September	28.88	29.20	28.54	67.7	78.9	85.3	64.1	74.7	97	47	59	58	75	49	.517	.493	1.36	1.16	3.6	2.8	3.5
October	28.88	29.04	28.52	54.9	64.4	70.4	52.5	61.4	79	40	47	46	76	54	.339	.333	1.28	.90	3.7	2.8	4.2
November	29.03	29.34	28.59	50.8	57.5	63.6	47.5	55.6	77	27	47	47	86	71	.345	.352	5.90	2.15	5.3	3.6	5.0
December	29.02	29.49	28.60	38.7	47.0	52.4	35.9	44.2	69	20	33	37	79	69	.193	.230	1.42	.88	3.8	3.1	4.1
Year	28.93	29.49	28.04	56.3	65.1	71.2	53.2	62.2	97	10	50	50	80	62	.414	.417	34.12	3.26	4.8	4.4	4.5

ATLANTIC CITY, N. J.

[λ=39° 22′ N.; φ=74° 25′ W.; gravity corr., —0.01.]

January																					
February																					
March																					
April																					
May																					
June																					
July																					
August																					
September																					
October																					
November	30.17	30.70	29.59	48.9	50.2	55.7	44.7	50.2	70	28	44	46	85	85	.208	.324	1.98	0.72	5.6	4.4	5.4
December	30.14	30.85	29.61	31.7	36.0	42.0	27.5	34.8	59	10	26	29	80	74	.152	.169	.85	.58	4.3	3.1	4.0
Year																					

AUGUSTA, GA.

[λ=33° 28′ N.; φ=81° 54′ W.; gravity corr., —0.03.]

January	30.00	30.34	29.47	38.6	47.5	54.1	36.4	45.2	70	18	35	37	86	68	.212	.236	3.58	1.42	5.7	5.4	5.6
February	29.83	30.39	28.92	42.2	52.1	60.7	38.6	49.6	75	15	35	36	76	57	.220	.237	6.77	2.66	5.6	4.2	4.2
March	29.90	30.41	29.10	45.8	58.3	65.4	42.5	54.0	87	28	40	39	79	50	.264	.258	1.41	.51	5.8	3.7	5.0
April	29.99	30.26	29.76	59.9	70.9	79.6	56.7	68.2	93	39	52	52	76	54	.412	.413	2.71	1.26	4.3	3.9	3.7
May	29.87	30.18	29.68	70.8	79.8	88.1	66.7	77.4	96	55	63	63	78	58	.587	.581	3.09	1.73	4.4	5.3	5.1
June	29.83	30.04	29.50	74.0	79.0	88.6	69.1	78.8	99	58	67	66	79	67	.667	.649	3.61	1.17	4.0	5.6	5.4
July	29.92	30.13	29.48	76.4	81.7	90.9	73.0	82.0	100	63	72	72	86	73	.780	.776	9.89	5.65	5.4	6.6	6.1
August	29.88	30.03	29.74	75.3	82.3	91.8	72.1	82.0	100	58	70	70	83	68	.729	.745	3.31	1.90	3.5	4.0	4.6
September	29.85	30.19	29.29	68.8	78.7	87.9	65.4	76.6	101	43	63	62	81	58	.588	.577	1.71	1.49	2.6	2.7	3.4
October	29.87	30.09	29.52	55.4	65.7	75.5	53.4	64.4	84	38	49	52	81	63	.366	.403	.40	.38	4.6	3.3	4.1
November	30.03	30.34	29.59	52.1	60.6	70.5	49.2	59.8	82	34	49	52	91	75	.369	.414	3.74	1.68	5.4	3.8	4.7
December	30.04	30.58	29.54	37.3	47.6	55.8	35.1	45.4	71	21	33	38	85	69	.199	.237	3.23	1.94	4.1	2.9	3.8
Year	29.92	30.58	28.92	58.0	67.0	75.7	54.8	65.3	101	15	52	53	82	63	.449	.460	43.45	5.65	4.6	4.3	4.6

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

ASTORIA, OREG.

[H = — ft.; h_t = 39 ft.; h_r = 56 ft.; h_a = 60 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Wind. Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	.....	E.	....	.....	....	1	1	11	4	3	8	1	2	0	3	4	24	27	23	4	0	0	0	0	2	0	0
February	.....	SW.	....	.....	....	0	1	3	4	3	12	3	3	0	4	5	20	23	22	2	0	1	0	0	2	0	0
March	.....	W.	....	.....	....	2	2	5	1	0	5	9	7	0	11	7	13	15	15	2	0	5	0	0	4	0	0
April	.....	W.	....	.....	....	1	1	1	2	1	9	11	4	0	6	3	21	24	19	0	0	0	0	0	0	0	0
May	.....	W.	....	.....	....	0	0	2	0	1	8	12	8	0	8	6	17	21	18	0	0	0	0	0	0	0	0
June	.....	W.	....	.....	....	0	1	0	0	1	6	13	9	0	15	9	6	10	9	0	0	0	0	0	0	0	0
July	.....	W.	....	.....	....	0	0	0	0	0	5	25	1	0	20	6	5	1	0	0	0	0	0	0	0	0	0
August	.....	W.	....	.....	....	0	0	0	0	0	10	18	2	1	5	7	19	10	8	0	0	1	0	0	0	0	0
September	.....	SW.	....	.....	....	0	3	4	0	0	12	6	5	0	16	4	10	9	7	0	0	2	0	0	0	1	0
October	.....	SW.	....	.....	....	4	0	2	0	2	13	8	2	0	12	5	14	13	10	0	0	6	0	0	0	0	0
November	.....	SW.	....	.....	....	2	4	7	3	1	8	3	2	0	7	4	19	19	19	4	0	0	1	0	6	1	0
December	.....	E.	....	.....	....	1	3	12	4	5	4	1	1	0	1	7	23	23	23	0	0	4	0	0	0	0	0
Year	.....	W.	....	.....	....	11	16	47	18	17	100	110	46	1	108	67	191	195	173	12	0	19	1	0	14	2	0

ATLANTA, GA.

[H = 1,131 ft.; h_t = 92 ft.; h_r = 85 ft.; h_a = 126 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.3	NW.	35	NW.	0	1	6	15	7	1	4	8	20	0	10	7	14	10	8	0	0	2	1	0	11	1	0
February	12.4	NW.	46	SW.	2	1	3	3	6	3	14	10	18	0	14	9	6	9	9	0	0	2	0	0	9	1	0
March	11.8	NW.	44	SW.	2	2	2	7	6	8	8	12	17	0	10	9	12	12	8	1	1	0	0	0	5	1	0
April	9.7	NW.	38	NW.	0	1	4	7	9	7	10	8	13	1	15	7	8	6	3	0	0	0	0	0	0	3	0
May	7.9	SW.	30	NE.	0	4	5	6	6	5	20	11	5	0	12	13	6	8	6	0	0	0	0	5	0	2	0
June	8.5	NW.	34	SW.	0	6	8	6	9	2	13	6	10	0	16	9	5	14	11	0	0	0	0	5	0	2	0
July	7.8	NW.	34	NE.	0	5	6	5	12	3	8	11	11	1	8	17	6	18	16	0	0	0	0	8	0	7	0
August	7.2	NE.	37	SW.	0	6	10	12	5	6	8	7	8	0	21	8	2	6	5	0	1	0	0	17	0	5	0
September	8.3	E.	32	NW.	0	3	10	17	5	3	4	8	10	0	17	9	4	2	2	0	0	0	0	10	0	0	0
October	9.6	NW.	31	N.	0	1	15	6	7	1	4	6	22	0	15	9	7	7	4	0	0	0	0	0	0	0	0
November	9.3	E.	28	NW.	0	3	4	13	16	3	5	1	15	0	15	4	11	12	9	0	0	0	0	0	2	2	0
December	9.5	NW.	32	NW.	0	5	7	9	7	4	2	9	19	0	17	5	9	4	4	1	0	2	0	0	12	0	0
Year	9.4	NW.	46	SW.	4	38	80	106	95	46	100	97	168	2	170	106	90	108	85	2	2	6	1	45	39	24	0

ATLANTIC CITY, N. J.

[H = 53 ft.; h_t = 68 ft.; h_r = 57 ft.; h_a = 76 ft.

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
February	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
March	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
April	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
May	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
June	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
July	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
August	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
September	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
October	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
November	12.3	SW.	34	SE.	0	12	1	4	7	2	20	5	9	0	10	11	9	8	7	1	1	1	1	0	3	0	0
December	12.9	N.	48	NE.	2	15	4	1	0	3	13	12	14	0	15	10	6	5	4	2	0	0	5	0	21	0	0
Year	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

AUGUSTA, GA.

[H = 180 ft.; h_t = 89 ft.; h_r = 54 ft.; h_a = 103 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	5.2	NE.	26	SW.	0	6	16	6	2	2	5	8	9	8	10	9	12	7	7	0	1	2	0	0	8	1	0
February	7.9	SW.	46	SW.	1	7	1	3	1	7	17	14	7	1	15	6	8	9	9	0	0	0	0	0	9	0	0
March	7.6	W.	32	W.	0	2	6	2	7	9	6	18	9	3	11	11	9	6	5	0	0	0	0	0	3	0	0
April	5.9	SE.	46	NW.	1	3	4	7	18	8	5	5	4	6	17	8	5	9	5	0	1	1	0	3	0	4	0
May	4.5	SE.	30	NW.	0	2	7	4	15	6	9	7	5	7	10	12	9	10	8	0	0	0	0	15	0	8	0
June	5.0	SE.	30	N.	0	3	10	5	12	2	5	9	9	5	8	15	7	15	12	0	0	0	0	10	0	6	0
July	5.0	W.	48	SW.	1	5	4	3	10	10	9	13	8	0	5	14	12	13	11	0	0	0	0	17	0	8	0
August	4.5	SE.	26	NW.	0	5	13	4	15	7	7	4	4	3	13	13	5	12	6	0	0	1	0	22	0	8	0
September	5.0	SE.	30	N.	0	8	13	7	14	6	3	5	2	2	17	10	3	5	4	0	0	1	0	10	0	1	0
October	5.4	W.	22	NE.	0	10	9	4	5	1	2	8	14	9	17	5	9	2	1	0	0	0	0	0	0	0	0
November	5.1	NE.	26	SE.	0	7	9	7	6	5	3	12	7	4	13	8	9	8	5	0	0	3	0	0	0	0	0
December	5.2	NW.	19	W.	0	15	8	0	4	3	4	5	20	3	17	6	8	6	6	1	0	1	0	0	11	0	0
Year	5.5	SE	48	SW.	3	73	100	52	109	66	75	108	98	51	153	117	96	102	79	1	2	9	0	77	31	36	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

BAKER CITY, OREG.

[λ=44° 50′ N.; φ=117° 50′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	26.41	26.78	25.92	26.6	31.8	37.2	23.4	30.3	51	—3	20	24	74	71	.115	.130	1.57	0.35	7.0	8.0	7.4
February	26.54	26.91	26.05	30.3	35.8	43.9	27.4	35.6	56	17	22	25	71	57	.117	.131	.84	.39	4.8	6.8	6.0
March	26.42	26.83	25.89	30.3	42.8	46.1	27.6	36.8	62	8	23	24	72	50	.126	.137	1.09	.28	5.9	5.7	6.1
April	26.32	26.80	25.98	33.4	45.5	49.8	32.0	40.9	59	24	26	27	74	52	.143	.151	1.07	.28	6.9	8.3	7.6
May	26.38	26.72	26.12	38.7	52.6	55.9	37.0	46.4	79	26	34	34	83	52	.198	.207	2.38	.68	7.2	7.5	7.5
June	26.46	26.68	26.18	48.6	69.2	72.1	47.2	59.6	90	34	40	44	73	44	.249	.292	1.49	.91	3.4	4.5	4.0
July	26.46	26.61	26.26	55.7	81.4	85.0	54.5	69.8	96	47	45	50	67	37	.303	.376	.97	.40	2.7	3.2	2.9
August	26.47	26.58	26.32	53.8	77.6	81.4	52.1	66.8	93	41	47	60	79	55	.333	.522	.36	.14	4.3	4.3	4.6
September	26.45	26.71	26.19	43.1	66.7	70.1	41.4	55.8	88	29	33	34	68	32	.193	.205	.20	.15	2.6	3.5	2.8
October	26.47	26.73	26.12	37.8	56.7	62.7	35.0	48.8	81	24	28	32	66	43	.150	.185	.31	.18	4.1	4.0	4.2
November	26.42	26.93	25.99	27.6	32.1	37.5	23.8	30.6	62	—8	21	24	76	72	.126	.136	1.91	.71	5.1	7.6	6.3
December	26.51	26.88	26.08	32.2	35.4	40.4	29.1	34.8	48	14	27	29	82	76	.147	.156	1.18	.31	7.6	8.8	8.1
Year	26.44	26.93	25.89	38.2	52.5	56.8	35.9	46.4	96	—8	30	34	74	53	.183	.219	13.37	.91	5.1	6.0	5.6

BALTIMORE, MD.

[λ=39° 18′ N.; φ=76° 37′ W.; gravity corr., —0.01.]

January	30.06	30.40	29.47	30.2	34.2	39.2	28.0	33.6	59	9	22	24	69	64	.124	.133	2.62	1.95	6.4	5.4	5.3
February	29.79	30.41	28.83	31.3	36.6	44.2	27.9	36.0	61	5	24	25	72	61	.141	.149	7.07	3.48	5.2	4.9	6.0
March	29.89	30.51	29.01	33.8	39.3	46.4	29.8	38.1	69	16	23	25	64	57	.140	.144	4.70	1.28	4.9	4.3	5.1
April	30.00	30.40	29.59	53.2	58.2	65.3	48.0	56.6	94	31	43	42	69	58	.299	.299	1.44	.70	5.6	4.4	5.4
May	29.90	30.26	29.57	65.8	70.1	78.0	60.0	69.0	96	47	54	56	70	65	.435	.467	1.61	.44	6.9	6.5	6.6
June	29.86	30.14	29.45	68.6	72.9	79.3	63.3	71.3	93	54	58	61	71	68	.501	.552	3.94	1.28	6.5	5.5	6.3
July	29.91	30.24	29.61	75.6	78.2	85.8	69.7	77.8	96	61	66	66	72	69	.638	.663	6.32	2.06	6.1	6.4	6.3
August	29.92	30.20	29.70	74.2	77.2	85.5	67.0	76.2	98	54	63	63	68	62	.591	.596	1.93	.85	3.4	3.2	4.0
September	29.92	30.22	29.54	64.9	68.9	77.2	59.5	68.4	94	46	55	57	71	67	.454	.489	4.14	1.46	5.4	4.0	5.0
October	29.93	30.36	29.55	51.1	54.3	63.0	46.5	54.8	77	36	40	42	67	65	.258	.279	1.11	.81	5.4	3.1	4.6
November	30.09	30.62	29.50	47.4	51.5	59.8	42.2	51.0	75	29	39	40	74	66	.260	.267	3.34	1.21	6.2	4.6	6.3
December	30.08	30.78	29.61	32.5	37.3	43.4	29.5	36.4	66	14	23	26	67	63	.130	.147	.37	.21	5.3	4.0	6.6
Year	29.95	30.78	28.83	52.4	56.6	63.9	47.6	55.8	98	5	42	44	70	64	.331	.349	38.59	3.48	5.6	4.7	5.7

BINGHAMTON, N. Y.

[λ=42° 08′ N.; φ=75° 55′ W.; gravity corr., —0.01.]

January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	29.64	28.73	41.7	.....	54.3	38.4	46.4	72	25	37	.....	84	.....	.230	.....	3.63	2.19	7.4	.....	7.4
November	.....	29.72	28.80	40.2	.....	52.4	35.3	43.8	69	19	34	.....	80	.....	.213	.....	1.78	.86	8.0	.....	7.4
December	.....	29.88	28.69	23.6	.....	34.4	19.9	27.2	56	—7	18	.....	80	.....	.106	.....	.77	.43	7.6	.....	7.4
Year	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

BISMARCK, N. DAK.

[λ=46° 47′ N.; φ=100° 38′ W.; gravity corr., 0.00.]

January	28.30	28.91	27.63	4.9	8.7	16.5	—0.3	8.1	48	—23	—2	—2	69	59	.045	.044	0.81	0.32	6.7	4.8	6.5
February	28.17	28.72	27.62	10.6	19.6	28.2	4.4	16.3	58	—19	1	8	64	58	.053	.072	.31	.22	6.4	3.8	5.1
March	28.24	28.80	27.30	11.9	22.8	29.9	8.0	19.0	69	—14	4	13	66	63	.059	.091	.84	.24	7.0	5.4	5.6
April	28.13	28.62	27.53	34.8	47.4	52.0	32.3	42.2	79	18	27	32	71	57	.153	.192	2.23	.22	7.0	5.3	6.2
May	28.06	28.45	27.59	49.3	64.6	69.3	45.3	57.3	92	34	43	47	78	55	.283	.335	1.98	.88	6.5	5.1	5.4
June	28.18	28.52	27.55	58.5	74.1	78.2	53.0	65.6	96	42	52	55	80	54	.397	.445	2.64	1.30	4.6	4.8	4.0
July	28.26	28.56	27.94	60.2	77.2	81.4	56.1	68.8	103	43	55	54	82	46	.440	.417	1.03	.42	4.7	3.0	4.1
August	28.23	28.61	27.86	56.0	76.9	81.8	52.7	67.2	98	40	49	48	77	38	.355	.350	1.77	.85	3.9	2.5	3.5
September	28.24	28.62	27.65	43.5	60.4	67.5	41.4	54.4	93	22	38	42	81	53	.239	.273	1.42	.53	6.1	3.4	4.4
October	28.26	28.65	27.78	31.9	45.7	54.5	29.4	42.0	77	13	25	31	74	57	.137	.175	.48	.31	5.5	3.8	4.0
November	28.33	28.94	27.82	5.2	7.8	14.6	—0.2	7.2	48	—22	—1	0	73	68	.048	.047	3.10	.77	7.5	6.0	6.9
December	28.23	28.90	27.80	15.6	21.0	27.5	10.5	19.0	46	—23	9	10	74	61	.072	.070	.03	.01	5.7	3.9	5.5
Year	28.22	28.94	27.30	31.9	43.8	50.1	27.7	38.9	103	—23	25	28	74	56	.190	.209	16.64	1.30	6.0	4.3	5.1

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

BAKER CITY, OREG.

[H=3,470 ft.; h_t=49 ft.; h_r=38 ft.; h_a=55 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	6.3	S.	33	SW.	0	3	0	1	18	22	2	1	10	5	4	9	18	14	8	7	0	0	8	0	22	0	0
February	5.7	SE.	44	NW.	1	7	3	1	17	10	2	2	11	5	5	13	11	9	8	7	0	0	1	0	20	0	0
March	5.6	S.	26	NW.	0	3	7	0	12	17	4	3	14	2	5	14	12	15	16	8	0	0	4	0	21	0	0
April	6.1	SE.	32	SE.	0	6	0	0	19	8	8	1	14	4	1	13	16	17	12	6	0	0	0	0	15	2	0
May	5.3	NW.	27	SW.	0	9	3	1	13	8	4	3	17	4	3	9	19	17	14	4	0	0	0	0	5	1	0
June	5.0	S.	19	E.	0	10	6	1	3	23	1	0	15	1	16	8	6	6	6	0	1	0	0	1	0	4	0
July	5.0	S.	26	NW.	0	7	2	1	1	26	0	1	21	3	19	9	3	5	4	0	0	0	0	7	0	4	0
August	5.0	S.	28	W.	0	5	0	0	5	25	1	2	21	3	13	9	9	5	4	0	0	0	0	4	0	0	0
September	5.4	S.	22	W.	0	1	1	0	3	32	0	1	21	1	21	4	5	3	1	0	0	0	0	0	1	0	0
October	5.9	S.	22	SE.	0	4	0	0	10	25	0	0	17	6	13	10	8	5	2	0	0	0	0	0	10	0	0
November	7.7	SE.	36	SW.	0	4	0	0	19	13	10	2	10	2	5	12	13	17	11	10	0	0	8	0	24	0	0
December	6.4	SE.	28	S.	0	2	0	1	30	15	4	2	7	1	2	6	23	11	9	4	0	0	1	0	21	0	0
Year	5.8	S.	44	NW.	1	61	22	6	150	224	36	18	178	37	107	116	143	124	89	46	1	0	22	12	139	11	0

BALTIMORE, MD.

[H=123 ft.; h_t=68 ft.; h_r=73 ft.; h_a=82 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	8.5	W.	35	NE.	0	12	7	7	3	4	9	13	7	0	9	10	12	4	3	1	0	1	5	0	21	0	0
February	10.5	W.	40	W.	2	12	8	6	0	5	9	9	8	1	6	12	11	12	9	4	0	4	4	0	17	0	0
March	10.8	NW.	50	S.	1	9	7	2	7	7	4	12	14	0	12	7	12	14	9	7	0	2	0	0	20	0	0
April	8.4	SE.	36	W.	0	4	4	2	15	7	8	2	17	1	9	12	9	8	7	0	0	2	0	2	1	0	0
May	7.6	SW.	35	N.	0	4	9	6	10	6	15	6	5	1	5	12	14	9	7	0	0	0	0	5	0	4	0
June	6.9	SW.	30	S.	0	11	5	9	8	8	13	4	2	0	6	11	13	13	10	0	0	0	0	3	0	5	0
July	7.3	SW.	36	N.	0	10	0	2	3	11	23	8	5	0	4	14	13	15	15	0	1	0	0	9	0	7	0
August	4.3	N.	25	N.	0	12	7	1	7	4	10	11	10	0	15	11	5	8	7	0	0	0	0	10	0	4	0
September	4.8	SW.	36	E.	0	8	8	5	11	8	8	4	8	0	10	10	10	10	8	0	0	1	0	3	0	2	0
October	4.8	N.	19	N.	0	16	6	3	9	4	3	10	11	0	12	9	10	6	4	0	0	0	0	0	0	0	0
November	4.4	SW.	22	W.	0	6	4	7	11	3	9	9	10	1	5	14	11	11	9	1	0	1	0	0	3	0	0
December	4.5	W.	25	W.	0	8	5	6	4	1	13	15	10	0	4	14	13	5	4	3	0	2	5	0	20	0	0
Year	6.9	SW.	50	S.	3	112	70	56	88	68	124	103	107	4	97	136	133	115	92	16	1	13	14	32	82	22	0

BINGHAMTON, N. Y.

[H=875 ft.; h_t=79 ft.; h_r=71 ft.; h_a=90 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	NW.	25	S.	0	2	8	3	0	2	0	6	10	0	5	6	20	12	9	0	0	0	0	0	9	0	0
November	.....	W.	34	SW.	0	4	2	3	8	4	2	6	6	0	3	9	18	14	9	3	0	0	2	0	11	0	0
December	.....	W.	28	W.	0	6	8	2	1	1	3	4	6	0	4	7	20	10	4	6	0	0	13	0	24	0	0
Year	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

BISMARCK, N. DAK.

[H=1,674 ft.; h_t=16 ft.; h_r=2 ft.; h_a=29 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.3	NW.	46	NW.	2	9	7	16	4	1	1	2	21	1	9	7	15	7	5	7	0	0	23	0	29	0	0
February	9.8	NW.	48	NW.	1	8	6	4	1	7	4	4	24	0	10	11	8	6	3	6	0	0	16	0	27	0	0
March	9.6	NW.	44	NW.	1	12	12	4	3	12	1	3	15	0	2	24	5	8	4	7	0	0	18	0	30	0	1
April	13.2	N.	43	NW.	2	15	11	8	9	7	1	4	5	0	8	9	13	8	6	2	0	0	2	0	16	3	2
May	12.1	NW.	44	NW.	2	9	6	13	9	6	0	3	16	0	8	18	5	17	14	0	0	1	0	1	0	5	0
June	10.3	SE.	47	SW.	1	15	2	6	10	8	7	1	10	1	19	8	3	11	9	0	0	0	0	1	0	11	0
July	7.4	E.	34	N.	0	11	8	11	7	5	4	5	10	1	17	8	6	8	5	0	0	1	0	6	0	9	0
August	8.9	N.	36	NW.	0	17	7	7	9	6	3	2	9	2	20	8	3	10	7	0	1	0	0	6	0	8	2
September	9.1	NW.	36	NW.	0	11	8	6	5	5	3	2	17	3	14	9	7	11	8	0	0	0	0	1	4	2	0
October	8.2	NW.	37	NW.	0	13	8	6	8	0	4	2	18	3	20	6	5	5	3	0	0	0	0	0	19	0	2
November	10.4	NW.	54	NW.	2	3	8	8	7	0	2	2	31	1	6	9	15	14	11	14	0	1	29	0	30	0	0
December	6.5	NW.	29	S.	0	4	9	9	6	4	3	3	20	4	11	8	12	3	0	2	0	0	18	0	30	0	2
Year	9.6	NW.	54	NW.	11	127	90	98	78	61	33	33	196	16	144	125	97	108	75	38	1	3	106	15	185	38	9

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

BLOCK ISLAND, R. I.

[λ=41° 10′ N.; φ=71° 36′ W.; gravity corr., —0.01.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	30.14	30.50	29.66	27.1	29.9	33.5	23.4	28.4	48	— 4	18	23	67	73	.106	.128	2.02	0.82	5.6	5.0	6.3
February	29.84	30.43	28.84	30.3	33.0	37.9	25.7	31.8	50	— 3	23	26	74	75	.134	.152	4.85	1.50	6.2	3.8	6.0
March	29.91	30.51	29.10	31.4	33.5	37.6	27.6	32.6	54	16	24	28	74	80	.138	.159	5.14	1.16	5.1	3.8	6.3
April	30.10	30.47	29.55	42.7	43.6	49.6	37.8	43.7	71	26	37	38	80	82	.229	.241	1.73	.87	3.8	3.9	5.4
May	30.00	30.35	29.62	55.3	54.9	60.2	48.8	54.5	81	38	50	49	85	82	.374	.358	3.95	1.53	3.4	4.6	5.8
June	29.96	30.32	29.49	61.6	61.1	67.8	56.0	61.9	78	50	57	57	85	88	.468	.476	3.27	1.02	3.5	4.5	5.9
July	30.01	30.39	29.66	68.0	68.4	73.6	63.5	68.6	82	59	65	65	89	89	.613	.614	3.51	1.04	4.3	4.1	6.2
August	30.01	30.28	29.74	69.0	68.8	74.2	63.8	69.0	86	56	64	65	83	88	.602	.627	2.08	1.03	3.7	3.2	5.2
September	30.02	30.37	29.56	62.0	63.0	66.9	58.0	62.4	74	44	57	58	84	86	.475	.496	7.76	4.88	5.6	4.4	5.6
October	30.00	30.52	29.50	52.0	53.2	56.2	48.4	52.3	69	38	46	48	82	82	.330	.346	5.26	1.65	6.0	5.3	5.7
November	30.18	30.77	29.64	48.3	49.4	52.7	43.8	48.2	64	30	43	44	82	83	.292	.307	2.47	.57	5.5	3.9	5.8
December	30.12	30.89	29.47	33.2	35.6	39.1	29.6	34.3	54	11	26	28	72	73	.150	.162	2.55	.94	3.4	3.3	4.7
Year	30.02	30.89	28.84	48.4	49.5	54.1	43.9	49.0	86	— 4	42	44	80	82	.326	.339	44.59	4.88	4.7	4.2	5.7

BOSTON, MASS.

[λ=42° 21′ N.; φ=71° 4′ W.; gravity corr., —0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	30.03	30.38	29.47	22.0	26.2	30.6	19.2	24.9	45	—10	15	20	72	74	.093	.112	2.25	1.41	5.6	5.8	5.2
February	29.71	30.30	28.75	25.3	29.6	36.8	20.6	28.7	56	—11	18	22	71	73	.110	.131	3.94	1.48	6.0	5.3	5.2
March	29.77	30.38	28.88	29.4	32.6	39.5	24.4	32.0	64	12	20	25	68	74	.123	.143	5.41	1.09	5.1	4.6	5.5
April	29.98	30.37	29.36	44.6	47.9	55.4	39.1	47.2	84	25	32	34	62	62	.189	.212	1.56	.61	4.7	4.8	4.7
May	29.88	30.29	29.48	58.7	60.7	69.8	50.8	60.3	94	38	45	46	63	62	.312	.324	1.68	.51	5.5	5.3	5.4
June	29.83	30.24	29.36	63.9	66.6	74.4	57.8	66.1	92	49	53	56	70	70	.420	.453	2.71	1.25	5.4	4.8	4.8
July	29.87	30.28	29.50	70.2	71.4	79.6	64.0	71.8	93	57	60	62	73	74	.537	.572	2.90	.83	6.1	5.4	5.4
August	29.89	30.19	29.64	69.1	70.3	78.3	63.1	70.7	95	52	60	61	73	74	.532	.559	2.15	.77	4.3	4.0	4.6
September	29.91	30.26	29.41	60.0	61.6	69.8	54.6	62.2	90	40	53	54	79	79	.421	.441	6.40	2.10	6.2	5.3	5.8
October	29.90	30.46	29.38	48.1	51.1	56.6	43.7	50.2	76	33	40	42	75	73	.263	.279	3.15	1.05	7.0	5.2	6.9
November	30.05	30.66	29.48	44.4	46.1	54.5	38.5	46.5	72	22	38	39	79	78	.249	.259	3.70	1.04	6.9	5.8	6.9
December	30.00	30.76	29.31	26.8	31.2	37.6	23.1	30.4	58	4	19	21	71	65	.115	.124	1.70	.99	5.3	3.6	5.0
Year	29.90	30.76	28.75	46.9	49.6	56.9	41.6	49.2	95	—11	38	40	72	72	.280	.301	37.55	2.10	5.7	5.0	5.4

BUFFALO, N. Y.

[λ=42° 53′ N.; φ=78° 53′ W.; gravity corr., —0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.30	29.70	28.79	24.1	25.9	29.3	20.4	24.8	40	—4	19	20	79	76	.108	.111	3.28	2.02	9.5	7.7	8.7
February	29.04	29.75	28.26	24.6	25.2	31.1	18.6	24.8	57	—9	20	20	82	78	.121	.116	5.02	1.45	8.5	7.8	8.1
March	29.18	29.76	28.53	22.4	26.3	32.6	18.0	25.3	59	5	18	20	80	76	.102	.112	3.61	.91	6.3	5.4	6.4
April	29.26	29.76	28.85	45.2	48.3	55.2	37.8	46.5	78	18	38	41	77	75	.251	.274	.93	.27	5.4	7.4	6.6
May	29.17	29.50	28.75	57.3	59.0	66.2	50.8	58.5	83	43	47	48	70	66	.328	.337	2.51	.92	4.0	4.2	5.4
June	29.16	29.43	28.77	64.6	68.7	73.8	57.9	65.8	85	45	53	54	67	61	.413	.425	1.46	.54	4.6	4.1	5.0
July	29.20	29.50	28.89	68.7	72.4	76.7	63.6	70.2	86	54	60	60	74	66	.532	.523	6.35	3.56	5.1	3.2	5.9
August	29.22	29.57	28.92	67.0	70.6	75.5	61.7	68.6	85	50	57	58	72	64	.491	.492	3.68	.84	6.6	5.2	6.2
September	29.21	29.52	28.76	58.9	62.0	67.9	52.4	60.2	81	35	50	51	72	69	.371	.394	4.39	1.30	5.5	4.8	5.8
October	29.23	29.67	28.84	45.3	48.3	53.0	41.9	47.4	73	34	37	38	73	67	.225	.235	1.90	.93	6.6	4.4	6.5
November	29.29	29.78	28.58	42.0	43.2	49.3	36.0	42.6	68	18	35	35	75	72	.216	.215	3.32	.75	7.8	6.1	7.9
December	29.32	29.93	28.75	28.4	30.8	35.5	24.8	30.2	57	8	24	23	81	73	.132	.129	.84	.43	8.5	5.6	8.5
Year	29.22	29.93	28.26	45.7	48.5	53.8	40.3	47.1	86	—9	38	39	75	70	.274	.280	37.29	3.56	6.5	5.5	6.8

CAIRO, ILL.

[λ=37° N.; φ=89° 10′ W.; gravity corr., —0.02.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.77	30.36	29.15	33.5	40.5	44.2	31.4	37.8	61	8	27	34	76	77	.158	.203	1.45	0.77	6.4	5.8	6.5
February	29.63	30.16	29.14	34.3	41.8	46.4	32.5	39.4	71	13	27	32	76	69	.154	.184	1.69	.78	5.8	4.9	5.3
March	29.68	30.16	29.22	38.2	47.0	49.5	36.6	43.0	70	22	33	35	81	66	.201	.227	3.97	1.31	5.5	6.4	6.5
April	29.68	30.00	29.40	60.5	69.7	73.9	57.6	65.8	85	36	53	53	76	57	.421	.428	2.57	.91	6.3	5.7	5.4
May	29.59	29.86	29.30	68.9	77.1	81.9	63.9	72.9	90	56	62	65	81	68	.570	.626	10.82	3.16	5.4	5.1	5.6
June	29.60	29.86	29.33	70.3	77.8	82.1	66.6	74.4	89	58	65	68	84	73	.630	.695	4.73	1.49	5.7	4.3	5.6
July	29.66	29.82	29.48	74.5	81.2	87.8	71.3	79.6	98	61	69	70	82	71	.707	.757	2.31	.70	4.6	6.2	5.3
August	29.66	29.95	29.44	73.2	82.2	88.0	70.2	79.1	97	59	66	68	80	64	.661	.715	1.78	.81	2.5	3.7	3.3
September	29.64	30.01	29.38	62.7	72.3	78.5	60.3	69.4	97	44	58	60	84	68	.498	.555	2.95	1.23	4.0	4.4	5.1
October	29.67	29.92	29.34	50.3	61.4	68.2	48.4	58.3	82	34	46	47	85	60	.318	.336	1.73	1.01	4.0	3.5	4.1
November	29.79	30.31	29.29	44.5	51.3	58.5	41.7	50.1	77	16	39	40	80	67	.260	.277	4.18	1.22	7.4	5.9	6.6
December	29.83	30.35	29.34	36.6	45.5	50.4	35.4	42.9	70	18	30	32	76	61	.169	.192	1.18	.47	5.1	4.7	5.6
Year	29.68	30.36	29.14	54.0	62.3	67.4	51.3	59.4	98	8	48	50	80	67	.396	.433	39.36	3.16	5.2	5.0	5.4

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

BLOCK ISLAND, R. I.

[H = 27 ft.; h_t = 39 ft.; h_r = 3 ft.; h_a = 48 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	20.6	NE.	66	E.	10	4	22	5	2	0	4	4	21	0	4	15	12	8	6	5	0	0	10	0	31	0	1
February	23.1	NW.	55	E.	14	2	11	2	5	1	7	11	19	0	8	12	9	12	12	4	0	5	5	0	22	0	0
March	21.0	NW.	72	NE.	10	0	10	1	5	2	9	5	30	0	7	12	12	19	16	11	0	4	9	0	25	0	1
April	15.2	E.	47	NE.	4	2	7	15	6	1	12	5	12	0	4	22	4	9	7	1	0	2	0	0	4	1	0
May	14.6	SW.	48	NE.	2	0	8	10	5	2	24	9	4	0	5	21	5	9	9	0	0	5	0	0	0	2	1
June	13.6	SW.	64	E.	2	1	4	7	3	0	21	12	12	0	6	15	9	11	7	0	0	7	0	0	0	0	0
July	13.6	SW.	36	SW.	0	0	4	5	4	1	32	9	7	0	3	20	8	12	10	0	0	13	0	0	0	0	0
August	10.7	SW.	46	N.	1	0	9	7	2	2	22	13	7	0	10	15	6	9	8	0	0	6	0	0	0	0	0
September	17.5	SW.	75	NE.	5	3	12	4	7	2	15	10	7	0	7	14	9	11	10	0	0	7	0	0	0	2	0
October	21.1	NE.	78	NE.	8	3	24	1	1	5	9	5	14	0	9	14	8	10	9	0	0	0	0	0	0	0	0
November	15.8	SW.	46	W.	1	3	13	2	4	4	17	6	11	0	6	17	7	10	9	1	0	3	0	0	3	0	0
December	19.4	NE.	80	NE.	8	4	21	0	2	1	8	11	15	0	11	16	4	8	7	4	0	0	7	0	18	0	1
Year	17.2	SW.	80	NE.	65	22	145	59	46	21	180	100	159	0	80	193	93	128	110	26	0	52	31	0	103	5	4

BOSTON, MASS.

[H = 125 ft.; h_t = 115 ft.; h_r = 154 ft.; h_a = 181 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	12.4	NW.	40	NE.	1	19	1	5	1	3	6	11	16	0	14	6	11	11	7	8	0	0	14	0	31	0	1
February	15.0	NW.	58	SE.	3	7	3	5	3	3	4	21	12	0	11	6	12	12	12	8	0	0	8	0	23	0	1
March	16.4	W.	50	NE.	5	6	5	1	4	6	5	16	19	0	12	9	10	15	13	8	0	1	9	0	27	0	1
April	11.5	E.	40	W.	1	5	9	10	5	4	6	8	13	0	13	9	8	8	8	3	1	0	0	0	7	1	0
May	10.7	W.	42	W.	1	2	11	6	8	6	11	12	6	0	10	11	10	9	6	0	0	0	0	1	0	3	0
June	10.5	W.	38	NE.	0	5	5	9	3	3	14	14	7	0	13	8	9	9	7	0	0	1	0	2	0	1	0
July	10.1	SW.	29	NE.	0	5	7	4	3	7	19	12	5	0	11	9	11	12	11	0	0	0	0	2	0	3	0
August	8.3	SW.	35	N.	0	6	4	8	4	12	12	9	7	0	12	13	6	13	11	0	0	0	0	2	0	3	0
September	11.2	SW.	41	NE.	1	6	8	3	5	4	15	7	11	1	10	8	12	14	11	0	0	2	0	1	0	3	0
October	11.6	W.	50	NE.	2	16	8	1	4	4	10	12	7	0	8	6	17	16	9	0	0	0	0	0	0	0	0
November	11.1	NW.	33	SW.	0	3	1	1	6	4	18	7	19	1	7	4	19	13	12	2	0	2	0	0	8	0	0
December	12.6	SW.	40	N.	1	5	3	0	3	2	17	16	16	0	12	9	10	4	3	2	0	0	10	0	23	0	1
Year	11.8	W.	58	SE.	15	85	65	53	49	58	137	145	138	2	133	98	135	136	110	31	1	6	41	8	119	14	4

BUFFALO, N. Y.

[H = 768 ft.; h_t = 178 ft.; h_r = 168 ft.; h_a = 206 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.3	NW.	48	NW.	2	1	6	11	6	3	6	13	14	2	0	7	24	16	10	14	0	2	17	0	29	0	0
February	16.1	NW.	64	W.	7	4	7	8	4	1	13	8	13	0	0	11	18	19	14	15	0	2	11	0	26	0	0
March	17.8	W.	54	W.	10	5	13	4	1	3	9	19	8	0	6	16	9	12	11	9	0	3	19	0	28	2	0
April	14.1	SW.	54	W.	2	0	5	8	4	7	20	10	6	0	5	11	14	10	7	1	1	5	2	0	9	3	0
May	14.6	SW.	53	W.	6	1	4	11	2	8	18	17	1	0	11	11	9	12	10	0	0	1	0	0	0	9	1
June	11.3	SW.	42	W.	2	3	7	6	5	3	18	11	7	0	9	16	5	8	8	0	1	1	0	0	0	6	0
July	12.2	W.	46	SW.	3	5	6	1	2	6	30	9	3	0	8	14	9	11	10	0	0	2	0	0	0	3	0
August	12.2	W.	48	W.	3	4	4	0	3	5	26	12	8	0	2	19	10	14	12	0	1	0	0	0	0	9	0
September	13.3	SW.	57	W.	3	6	4	9	4	7	18	9	3	0	11	8	11	13	11	0	0	0	0	0	0	1	0
October	13.6	W.	48	S.	3	5	6	13	4	4	10	10	10	0	7	7	17	9	8	1	0	0	0	0	0	0	0
November	19.1	W.	72	W.	10	3	3	3	4	9	14	17	6	1	2	8	20	17	12	3	0	2	3	0	13	0	0
December	16.9	W.	56	W.	9	6	7	9	3	3	13	13	8	0	0	9	22	11	6	6	0	3	12	0	20	0	0
Year	14.2	W.	72	W.	60	43	72	83	42	59	195	148	87	3	61	137	168	152	119	49	3	21	64	0	125	33	1

CAIRO, ILL.

[H = 359 ft.; h_t = 87 ft.; h_r = 78 ft.; h_a = 93 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.9	S.	34	S.	0	8	10	3	9	17	1	4	9	1	9	7	15	8	5	1	0	1	2	0	18	0	0
February	10.7	S.	36	SW.	0	14	8	0	0	15	9	3	13	1	8	11	10	9	6	2	0	1	3	0	14	0	0
March	10.0	N.	36	NW.	0	15	7	5	8	10	2	4	11	0	8	9	14	11	11	2	0	1	0	0	12	2	0
April	10.3	S.	36	SE.	0	4	5	6	8	22	8	2	5	0	4	20	6	11	8	0	1	0	0	0	0	7	0
May	7.3	S.	60	NW.	3	1	3	7	14	16	7	5	7	2	6	14	11	14	13	0	1	0	0	0	0	12	0
June	7.0	S.	40	S.	1	10	9	3	9	14	7	2	6	0	6	15	9	11	9	0	0	0	0	0	0	12	0
July	6.5	S.	33	SW.	0	8	8	3	3	24	9	5	1	1	7	15	9	10	8	0	0	0	0	12	0	15	0
August	6.2	S.	30	SW.	0	18	8	3	3	20	6	3	1	0	17	12	2	4	3	0	0	0	0	15	0	5	0
September	7.3	S.	45	W.	1	11	7	5	7	16	6	5	2	1	6	16	6	7	7	0	0	1	0	6	0	4	0
October	7.1	SE.	34	SW.	0	8	6	4	13	8	7	4	11	1	13	13	5	6	3	0	0	1	0	0	0	0	0
November	11.6	SE.	51	S.	1	9	2	2	19	13	1	0	13	1	4	10	16	12	10	0	0	0	3	0	5	2	0
December	8.1	S.	26	S.	0	9	9	3	8	17	5	1	9	1	9	10	12	8	5	0	0	1	0	0	11	1	0
Year	8.3	S.	60	NW.	6	115	77	44	101	192	68	38	88	9	99	152	115	111	88	5	2	6	8	33	60	60	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

FORT CANBY, WASH.

[λ=46° 16′ N.; φ=124° 4′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.68	30.29	28.78	43.0	43.8	46.6	39.0	42.8	58	32	41	41	93	91	.263	.265	11.53	1.99	7.1	8.3	8.4
February	29.95	30.38	29.31	44.4	46.8	49.6	41.8	45.7	65	31	43	43	94	89	.276	.284	8.15	1.20	7.0	6.9	7.9
March	29.84	30.36	29.40	40.7	46.2	49.5	38.2	43.8	65	22	38	40	91	81	.239	.253	4.83	.81	5.1	5.4	6.1
April	29.74	30.14	29.39	42.8	46.9	51.1	40.2	45.6	61	34	41	42	93	84	.257	.267	6.99	1.50	7.9	6.7	7.4
May	29.86	30.39	29.32	47.4	50.7	55.1	44.3	49.7	65	38	45	46	90	85	.297	.313	4.84	.91	8.0	6.1	6.8
June	29.92	30.14	29.60	52.6	57.4	62.0	50.8	56.4	88	46	49	51	90	80	.352	.372	2.70	1.15	5.8	4.6	5.1
July	29.88	30.04	29.70	57.3	62.3	66.7	55.6	61.2	77	52	55	56	91	82	.430	.455	.00	.00	6.2	4.6	4.9
August	29.86	29.99	29.75	58.4	61.0	65.6	55.5	60.6	89	51	56	56	92	86	.454	.453	1.22	.52	7.0	5.0	7.5
September	29.82	30.05	29.52	53.7	58.2	63.4	51.1	57.2	89	47	50	52	91	83	.368	.385	1.75	.88	4.1	3.8	5.7
October	29.81	30.05	29.34	51.2	54.2	58.0	48.4	53.2	72	45	49	50	92	88	.348	.367	5.40	1.98	4.7	5.0	6.8
November	29.76	30.18	29.32	40.0	42.1	45.3	36.6	41.0	54	20	38	38	91	87	.237	.239	15.12	3.00	6.0	6.7	7.1
December	29.75	30.08	29.12	46.0	46.9	49.4	41.9	45.6	54	33	44	44	94	90	.296	.291	16.04	2.82	6.6	8.2	8.4
Year	29.82	30.39	28.78	48.1	51.4	55.2	45.3	50.2	89	20	46	47	92	85	.318	.328	78.57	3.00	6.3	5.9	6.8

CAPE HENRY, VA.

[λ=36° 56′ N.; φ=76° W.; gravity corr., —0.02.]

January	.....	.....	.....	.....	.....	42.7	32.2	37.4	64	16	.....	.....	.....	.....	.....	.....	1.19	0.69	.....	.....	.....
February	.....	.....	.....	.....	.....	50.0	33.3	41.6	69	10	.....	.....	.....	.....	.....	.....	6.89	4.23	.....	.....	.....
March	.....	.....	.....	.....	.....	54.7	37.2	46.0	74	24	.....	.....	.....	.....	.....	.....	1.38	.32	.....	.....	.....
April	.....	.....	.....	.....	.....	66.4	49.8	58.1	96	34	.....	.....	.....	.....	.....	.....	1.73	.78	.....	.....	.....
May	.....	.....	.....	.....	.....	78.1	61.5	69.8	96	44	.....	.....	.....	.....	.....	.....	10.61	3.00	.....	.....	.....
June	.....	.....	.....	.....	.....	80.9	66.8	73.8	96	58	.....	.....	.....	.....	.....	.....	5.09	1.48	.....	.....	.....
July	.....	.....	.....	.....	.....	87.6	71.0	79.3	100	63	.....	.....	.....	.....	.....	.....	6.43	1.50	.....	.....	.....
August	.....	.....	.....	.....	.....	86.4	71.3	78.8	100	58	.....	.....	.....	.....	.....	.....	2.42	2.42	.....	.....	.....
September	.....	.....	.....	.....	.....	78.5	65.6	72.0	95	52	.....	.....	.....	.....	.....	.....	4.17	1.34	.....	.....	.....
October	.....	.....	.....	.....	.....	65.7	53.2	59.4	77	45	.....	.....	.....	.....	.....	.....	2.42	.64	.....	.....	.....
November	.....	.....	.....	.....	.....	64.3	49.2	56.8	79	34	.....	.....	.....	.....	.....	.....	2.21	.80	.....	.....	.....
December	.....	.....	.....	.....	.....	47.9	35.5	41.7	66	21	.....	.....	.....	.....	.....	.....	2.53	1.35	.....	.....	.....
Year	.....	.....	.....	.....	.....	66.9	52.2	59.6	100	10	.....	.....	.....	.....	.....	.....	47.07	4.23	.....	.....	.....

CARSON CITY, NEV.

[λ=39° 10′ N.; φ=119° 46′ W.; gravity corr., —0.02.]

January	25.29	25.62	24.92	35.3	45.5	51.0	29.7	40.4	60	12	22	22	60	40	.124	.121	5.26	1.13	6.2	7.3	5.3
February	25.42	25.64	24.92	32.9	48.9	53.9	28.5	41.2	64	15	17	15	50	26	.093	.089	.02	.01	1.8	3.9	2.7
March	25.27	25.59	24.75	36.2	50.0	53.1	30.7	41.9	67	24	23	21	58	33	.128	.117	1.82	.71	4.7	5.6	5.0
April	25.20	25.56	24.91	35.2	49.3	52.7	32.6	42.6	65	21	21	22	55	35	.114	.121	1.35	.64	6.0	5.5	5.7
May	25.26	25.50	25.04	41.5	58.7	61.9	39.4	50.6	82	26	30	28	62	33	.171	.161	.93	.66	3.8	4.1	4.0
June	25.30	25.47	25.13	50.1	76.6	80.4	48.2	64.3	88	41	38	32	65	21	.233	.184	.12	.12	1.0	2.8	2.3
July	25.34	25.47	25.17	53.3	81.0	86.6	52.0	69.3	97	42	46	43	77	29	.317	.291	.63	.24	1.6	3.2	2.9
August	25.35	25.48	25.22	49.9	78.1	82.9	48.3	65.6	92	39	42	40	77	28	.277	.253	1.30	.77	2.1	3.5	3.3
September	25.27	25.48	24.92	43.6	69.8	74.5	41.0	57.8	86	32	37	35	80	30	.225	.211	.38	.38	1.3	3.7	3.0
October	25.27	25.48	24.84	35.8	61.9	69.3	32.6	51.0	83	22	30	30	80	32	.164	.166	.30	.30	1.6	3.7	3.0
November	25.26	25.57	24.88	33.2	45.9	51.9	29.0	40.4	71	7	23	24	67	44	.127	.130	1.53	1.11	2.5	5.9	5.2
December	25.34	25.70	24.93	29.8	43.7	51.0	25.3	38.2	63	15	20	25	66	48	.109	.135	.80	.50	2.2	4.2	3.9
Year	25.30	25.70	24.75	39.7	59.1	64.1	36.4	50.3	97	7	29	28	66	33	.174	.165	14.44	1.13	2.9	4.4	3.9

CHARLESTON, S. C.

[λ=32° 47′ N.; φ=79° 56′ W.; gravity corr., —0.03.]

January	30.17	30.51	29.70	43.7	48.7	54.6	41.9	48.2	64	27	40	44	86	84	.255	.296	4.34	1.49	4.4	4.0	4.4
February	30.01	30.56	29.15	47.1	52.4	60.8	44.0	52.4	72	18	42	45	82	77	.287	.323	4.04	1.79	4.4	3.7	4.0
March	30.08	30.56	29.28	50.9	55.1	63.5	47.5	55.5	81	35	45	48	81	78	.321	.352	3.64	2.80	4.1	3.9	4.0
April	30.17	30.43	29.89	63.0	64.3	73.3	59.4	66.4	89	44	56	57	80	78	.481	.479	.71	.54	4.0	2.1	3.1
May	30.06	30.31	29.87	74.4	74.4	83.2	70.5	76.8	96	55	66	68	76	79	.654	.680	.52	.13	4.4	4.6	4.4
June	30.00	30.20	29.68	76.9	78.0	84.8	72.7	78.8	94	64	70	71	81	80	.749	.774	7.57	2.11	6.1	5.8	5.9
July	30.11	30.31	29.84	80.7	80.5	88.1	76.6	82.4	98	70	74	74	80	82	.837	.845	10.58	2.91	5.6	6.1	5.8
August	30.06	30.17	29.91	78.7	79.4	87.4	74.9	81.2	95	64	73	73	83	81	.812	.820	4.72	1.22	4.7	5.0	4.9
September	30.02	30.35	29.77	74.0	76.4	83.8	70.9	77.4	94	59	68	68	82	76	.712	.693	2.75	1.66	3.9	3.6	3.8
October	30.03	30.27	29.73	61.2	66.1	73.8	59.6	66.7	85	50	55	58	81	76	.447	.491	1.38	.88	4.9	4.3	4.7
November	30.20	30.48	29.84	58.0	62.4	70.0	56.2	63.1	80	40	54	56	87	80	.434	.469	1.77	1.10	4.2	3.5	4.8
December	30.20	30.69	29.65	43.6	49.6	57.0	42.0	49.5	68	29	37	40	78	70	.236	.261	5.76	3.40	3.8	3.7	4.0
Year	30.09	30.69	29.15	62.7	65.6	73.4	59.7	66.5	98	18	57	58	81	78	.519	.540	47.78	3.40	4.5	4.2	4.5

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

FORT CANBY, WASH.

[H = 179 ft.; h_t = 10 ft.; h_r = 2 ft.; h_a = 34 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	22.8	S.	73	S.	17	6	1	13	11	16	8	4	3	0	3	3	25	26	24	2	1	3	0	0	1	0	0
February	16.7	W.	67	S.	8	4	0	12	6	13	6	14	3	0	3	5	21	22	22	1	4	7	0	0	1	0	0
March	12.1	N.	57	S.	3	16	3	14	4	5	2	14	3	1	10	5	15	17	17	4	3	5	0	0	4	0	0
April	14.0	W.	60	S.	7	6	1	8	5	12	6	16	5	1	5	3	22	24	21	0	2	1	0	0	0	0	0
May	12.0	W.	49	S.	6	7	3	3	3	7	9	17	13	0	5	12	14	19	18	0	1	2	0	0	0	0	0
June	10.2	NW.	54	SE.	2	13	2	4	7	8	4	8	14	0	12	10	8	9	7	0	0	4	0	0	3	0	0
July	6.9	N.	35	N.	0	24	1	1	2	2	1	2	22	7	12	9	10	0	0	0	0	2	0	0	0	0	0
August	9.3	N.	36	S.	0	14	1	2	13	12	4	3	13	0	3	7	21	9	9	0	0	9	0	0	0	0	0
September	8.5	N.	52	S.	1	17	5	3	6	7	6	2	14	0	9	8	13	5	3	0	0	10	0	0	0	0	0
October	9.4	SE.	66	S.	3	10	3	5	15	10	4	6	9	0	5	8	18	12	11	0	0	7	0	0	0	1	0
November	19.4	E.	82	SE.	13	11	1	21	5	8	0	5	9	0	6	4	20	20	20	2	1	1	2	0	7	0	0
December	21.1	SE.	78	SE.	16	2	1	10	21	17	6	0	5	0	1	5	25	24	24	0	0	8	0	0	0	0	0
Year	13.5	N.	82	SE.	76	130	22	96	98	117	56	91	113	9	74	79	213	187	176	9	12	59	2	0	13	1	0

CAPE HENRY, VA.

[H = — ft.; h_t = 5 ft.; h_r = 6 ft.; h_a = 34 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	.....	.....	.....	.....	.....	6	1	3	3	1	4	2	11	0	9	14	8	6	5	1	0	0	2	0	13	0	0
February	.....	.....	.....	.....	.....	3	1	2	5	0	8	6	4	0	10	6	13	11	9	4	0	4	2	0	10	0	0
March	.....	.....	.....	.....	.....	4	1	5	5	2	2	4	8	0	11	7	13	8	8	2	6	1	0	0	7	0	0
April	.....	.....	.....	.....	.....	3	4	3	2	10	4	2	2	0	12	8	10	9	6	0	0	0	0	1	0	0	0
May	.....	.....	.....	.....	.....	1	6	1	8	5	7	3	0	0	7	12	12	16	12	0	0	0	0	6	0	4	0
June	.....	.....	.....	.....	.....	0	4	4	9	6	6	0	1	0	9	10	11	10	10	0	0	0	0	4	0	2	0
July	.....	.....	.....	.....	.....	1	2	1	10	2	15	0	0	0	9	10	12	13	12	0	0	0	0	9	0	2	0
August	.....	.....	.....	.....	.....	1	6	0	10	4	8	0	2	0	17	11	3	2	2	0	0	0	0	10	0	0	0
September	.....	.....	.....	.....	.....	2	6	1	11	4	4	0	2	0	9	15	6	9	8	0	0	0	0	3	0	1	0
October	.....	.....	.....	.....	.....	2	6	0	3	5	8	0	7	0	12	5	14	9	7	0	0	0	0	0	0	0	0
November	.....	.....	.....	.....	.....	6	3	0	9	2	5	1	4	0	7	10	13	9	7	0	0	0	0	0	0	0	0
December	.....	.....	.....	.....	.....	6	5	0	4	2	5	1	8	0	7	9	15	5	5	2	0	2	0	0	8	0	0
Year	.....	.....	.....	.....	.....	35	45	20	79	43	76	19	49	0	119	117	130	107	91	9	0	7	4	33	38	9	0

CARSON CITY, NEV.

[H = 4,720 ft.; h_t = 18 ft. (*); h_r = 42 ft.; h_a = 92 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	.....	SW.	.....	.....	.....	11	2	5	8	8	13	2	2	11	15	4	12	10	7	1	0	0	0	0	20	0	0
February	.....	N.	.....	.....	.....	13	4	7	2	4	2	9	9	8	23	4	2	2	0	1	0	0	0	0	22	0	0
March	.....	SW.	.....	.....	.....	1	6	2	5	10	12	7	6	13	14	5	12	13	9	5	0	0	1	0	18	0	0
April	.....	SW.	.....	.....	.....	3	3	0	1	3	18	12	12	8	10	11	9	14	6	12	0	0	0	0	11	0	0
May	.....	NW.	.....	.....	.....	3	1	0	2	0	18	15	19	4	14	13	4	6	4	2	1	0	0	0	9	2	0
June	.....	W.	.....	.....	.....	0	2	0	1	5	14	16	8	12	19	11	0	1	1	0	0	0	0	0	0	2	0
July	.....	W.	.....	.....	.....	1	1	0	0	7	7	18	9	19	17	10	4	7	5	0	1	0	0	10	0	10	0
August	.....	W.	.....	.....	.....	0	0	0	1	3	16	17	6	19	19	7	5	4	4	0	0	0	0	3	0	5	0
September	.....	SW.	.....	.....	.....	1	3	1	4	2	13	7	13	16	18	9	3	2	2	0	0	0	0	0	1	1	0
October	.....	NE.	.....	.....	.....	2	9	3	3	4	8	7	6	20	16	13	2	1	1	1	0	0	0	0	12	0	0
November	.....	SW.	.....	.....	.....	1	3	0	2	6	18	4	6	11	7	16	7	7	5	2	0	0	3	0	18	0	0
December	.....	SW.	.....	.....	.....	2	7	4	7	4	14	3	8	13	17	9	5	5	5	2	0	0	0	0	26	0	0
Year	.....	SW.	.....	.....	.....	38	41	31	36	56	153	117	104	154	189	112	65	70	49	26	2	0	4	13	137	20	0

* Readings taken at Prof. C. W. Friend's observatory from June 15 to December 31. Height of thermometer, 18 feet; from January 1 to June 15, 47 feet.

CHARLESTON, S. C.

[H = 52 ft.; h_t = 60 ft.; h_r = 55 ft.; h_a = 72 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.6	NE.	33	NE.	0	10	16	7	4	5	5	6	9	0	12	12	7	10	6	0	0	6	0	0	3	0	0
February	9.7	SW.	43	W.	1	7	2	2	2	3	26	8	8	0	14	10	5	9	8	0	0	1	0	0	4	3	0
March	9.6	SW.	35	SW.	0	5	4	8	3	6	17	7	12	0	13	16	2	4	4	0	0	1	0	0	0	3	0
April	9.6	SW.	30	NE.	0	3	2	14	7	10	18	3	3	0	16	13	1	4	3	0	0	1	0	0	0	2	0
May	8.0	SW.	29	E.	0	1	2	9	2	17	27	4	0	0	10	19	2	7	4	0	0	0	0	5	0	9	0
June	7.9	SW.	35	SE.	0	2	8	5	11	10	18	4	2	0	3	22	5	16	13	0	0	0	0	5	0	13	0
July	7.8	SW.	36	S.	0	0	3	1	9	19	26	3	1	0	2	24	5	14	12	0	0	0	0	9	0	12	0
August	7.4	SW.	30	NW.	0	4	11	7	6	8	24	2	0	0	9	17	5	9	9	0	0	0	0	9	0	14	0
September	8.2	NE.	62	S.	1	5	20	8	7	7	7	3	3	0	14	14	2	4	3	0	0	1	0	2	0	2	0
October	8.3	NE.	33	NE.	0	7	21	4	6	2	9	6	7	0	12	11	8	7	5	0	0	2	0	0	0	2	0
November	7.4	NE.	28	N.	0	10	18	12	5	4	7	1	3	0	11	12	7	10	5	0	0	6	0	0	0	1	0
December	7.6	N.	40	NE.	1	22	10	10	3	0	5	4	8	0	14	9	8	8	7	0	0	2	0	0	4	0	0
Year	8.3	SW.	62	S.	3	76	117	87	65	91	189	51	56	0	130	179	57	102	79	0	0	20	0	30	11	61	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

CHARLOTTE, N. C.

[λ = 35° 13′ N.; φ = 80° 51′ W.; gravity corr., —0.02.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.35	29.68	28.84	34.1	42.5	48.1	32.1	40.1	63	14	28	30	78	62	.161	.181	2.26	1.17	4.8	3.9	5.0
February	29.15	29.68	28.19	37.8	46.4	53.9	34.7	44.3	70	6	30	29	73	55	.182	.187	5.40	1.91	5.0	4.4	4.8
March	29.24	29.77	28.48	42.1	51.9	58.7	37.7	48.2	77	26	33	31	70	46	.198	.191	1.55	.90	5.1	3.0	4.8
April	29.34	29.65	29.05	57.2	67.4	76.2	53.5	64.8	94	34	47	47	71	50	.359	.348	1.90	.75	2.9	3.7	3.5
May	29.24	29.54	29.04	68.6	77.1	86.1	64.4	75.2	95	49	59	58	73	55	.511	.489	1.68	.68	3.5	4.9	4.1
June	29.21	29.41	28.84	70.5	75.3	83.4	64.8	74.1	96	55	64	63	79	68	.595	.587	3.35	1.36	4.7	4.9	5.0
July	29.30	29.53	28.93	72.1	77.1	86.4	69.6	78.0	98	60	69	68	86	76	.703	.696	6.38	2.30	5.4	5.8	5.1
August	29.27	29.46	29.10	73.0	80.1	89.7	69.0	79.4	99	55	65	64	77	61	.632	.618	1.05	.51	3.0	4.3	3.6
September	29.24	29.56	28.80	65.1	73.6	83.3	62.0	72.6	99	47	59	59	81	62	.522	.519	4.69	2.18	3.7	1.9	3.0
October	29.25	29.50	28.91	51.8	61.3	69.0	49.1	59.0	80	34	44	45	77	58	.306	.314	.98	.48	3.2	2.3	4.1
November	29.40	29.80	28.96	49.6	57.4	64.9	46.4	55.6	75	33	45	45	84	65	.309	.324	3.67	2.00	4.4	3.5	5.0
December	29.39	29.95	28.96	34.8	43.7	50.0	33.2	41.6	68	18	29	33	77	67	.165	.195	1.87	1.09	3.9	2.5	4.2
Year	29.28	29.95	28.19	54.8	62.8	70.8	51.4	61.1	99	6	48	48	77	60	.387	.387	34.78	2.30	4.1	3.8	4.4

CHATTANOOGA, TENN.

[λ = 35° 4′ N.; φ = 85° 15′ W.; gravity corr., —0.03.]

January	29.38	29.86	28.84	36.2	43.8	49.4	33.9	41.6	64	12	31	33	81	68	.183	.205	2.90	0.93	5.7	5.7	6.4
February	29.23	29.74	28.52	37.2	46.8	53.0	34.4	43.7	70	8	30	29	75	53	.183	.178	4.84	1.26	6.3	3.5	5.2
March	29.30	29.77	28.74	42.1	50.8	57.9	38.3	48.1	84	25	33	36	71	59	.207	.233	3.21	.90	6.8	4.5	5.8
April	29.37	29.62	29.11	57.8	68.8	75.4	54.7	65.0	90	38	48	49	73	52	.372	.369	3.31	1.12	5.3	4.0	5.1
May	29.27	29.53	29.10	67.3	76.8	85.0	62.9	74.0	92	55	61	61	81	60	.538	.545	3.76	1.14	4.7	5.0	5.1
June	29.24	29.51	28.97	69.9	77.6	84.3	65.6	75.0	94	56	64	62	83	62	.609	.574	2.64	.85	4.3	5.7	5.3
July	29.33	29.51	29.05	73.3	79.4	86.6	70.4	78.5	96	57	69	69	87	72	.713	.714	5.80	1.50	6.1	6.7	6.0
August	29.30	29.46	29.15	73.2	82.7	90.9	70.0	80.4	97	63	67	66	81	58	.670	.653	1.90	1.61	3.7	4.1	4.1
September	29.27	29.58	29.00	64.7	76.6	85.2	61.0	73.1	98	43	58	57	78	52	.492	.487	2.01	1.20	3.1	3.3	3.7
October	29.29	29.47	28.94	50.9	63.9	71.3	49.3	60.3	81	35	46	46	84	54	.324	.328	1.06	.60	3.6	3.0	4.3
November	29.43	29.71	29.00	47.9	55.8	63.7	44.8	54.2	76	28	44	44	86	66	.309	.314	5.51	2.73	6.3	4.4	6.0
December	29.45	29.91	29.02	35.9	46.2	53.9	33.5	43.7	69	19	31	32	81	59	.179	.196	.83	.48	5.0	4.1	4.9
Year	29.32	29.91	28.52	54.7	64.1	71.4	51.6	61.5	98	8	48	49	80	60	.398	.400	37.77	2.73	5.1	4.5	5.2

CHEYENNE, WYO.

[λ = 41° 8′ N.; φ = 104° 48′ W.; gravity corr., —0.01.]

January	23.95	24.26	23.62	28.1	32.8	43.2	21.2	32.2	58	— 4	16	9	59	35	.091	.064	0.68	0.46	4.0	4.0	5.0
February	23.93	24.29	23.46	24.6	32.6	41.3	19.8	30.6	61	6	16	10	68	38	.090	.066	.31	.28	4.2	3.7	4.6
March	23.88	24.22	23.40	25.3	33.1	39.0	19.7	29.4	66	— 2	18	15	72	49	.099	.085	2.06	.50	6.0	6.2	6.3
April	23.87	24.22	23.49	31.7	50.8	54.5	28.6	41.6	71	8	23	26	70	40	.125	.138	2.08	1.24	5.0	5.3	5.4
May	23.91	24.17	23.57	43.0	59.9	64.3	39.3	51.8	80	26	32	34	65	41	.182	.195	2.85	2.06	5.0	6.1	5.9
June	24.09	24.31	23.73	55.0	71.1	76.0	49.7	62.8	88	39	42	45	63	42	.270	.309	1.41	.56	3.4	5.0	4.9
July	24.14	24.30	24.01	57.6	73.4	79.3	53.8	66.6	90	50	46	49	67	46	.317	.364	6.35	4.70	4.4	5.7	5.2
August	24.15	24.34	23.95	55.5	72.4	80.3	52.2	66.2	90	40	44	43	66	39	.293	.291	2.52	1.22	5.0	5.4	5.0
September	24.08	24.30	23.86	45.9	59.5	67.2	42.8	55.0	83	19	39	40	80	54	.246	.254	2.08	.65	4.7	4.6	5.5
October	24.04	24.35	23.73	35.2	48.8	59.6	32.4	46.0	75	23	23	27	61	44	.124	.145	.28	.28	3.3	4.4	4.5
November	23.93	24.24	23.37	23.2	31.6	42.3	17.6	30.0	68	—12	6	9	52	41	.060	.065	.14	.10	3.6	3.5	5.5
December	24.04	24.35	23.65	31.4	38.2	48.4	24.4	36.4	61	8	6	6	42	30	.064	.063	.03	.03	1.7	4.5	5.3
Year	24.00	24.35	23.40	38.0	50.4	58.0	33.5	45.7	90	—12	26	26	64	42	.163	.170	20.79	4.70	4.2	4.9	5.3

CHICAGO, ILL.

[λ = 41° 53′ N.; φ = 87° 37′ W.; gravity corr., —0.01.]

January	29.23	29.67	28.76	24.8	28.7	32.3	21.7	27.0	50	—9	21	23	83	78	.121	.131	1.12	.58	7.3	6.0	7.0
February	29.05	29.62	28.53	24.2	28.1	32.5	20.6	26.6	58	—9	19	21	80	72	.112	.120	3.48	1.52	6.3	5.3	5.3
March	29.16	29.68	28.47	27.8	33.2	37.3	25.2	31.2	58	6	20	24	72	68	.113	.138	1.26	.30	5.5	6.1	4.6
April	29.14	29.56	28.67	50.1	54.8	62.2	44.6	53.4	84	18	40	42	69	65	.282	.295	2.79	1.18	5.5	5.1	4.0
May	29.07	29.37	28.71	62.0	68.0	74.5	56.5	65.5	89	46	*51	50	*68	56	*.379	.381	4.16	1.47	4.9	5.0	3.4
June	29.11	29.41	28.78	64.6	68.1	73.9	60.1	67.0	89	50	55	54	73	64	.453	.444	2.82	.92	4.9	4.6	3.7
July	29.15	29.32	28.92	69.2	74.2	79.3	65.0	72.2	93	56	60	60	74	63	.533	.527	3.61	1.81	5.2	5.0	4.2
August	29.16	29.56	28.84	68.8	75.2	79.7	65.8	72.8	98	54	58	61	70	63	.517	.569	3.52	1.24	3.6	4.1	3.1
September	29.15	29.52	28.52	57.2	62.9	67.3	53.9	60.6	88	40	49	51	76	68	.365	.398	6.70	2.42	7.0	6.0	5.5
October	29.18	29.50	28.72	45.1	51.5	56.1	43.0	49.6	75	29	37	39	74	64	.236	.256	1.36	.92	4.6	3.0	4.5
November	29.22	29.73	28.66	35.6	39.4	45.9	30.8	38.4	70	6	30	33	81	78	.196	.216	2.16	.57	6.6	6.2	6.4
December	29.27	29.77	28.75	30.5	34.7	38.3	27.5	32.9	57	8	26	29	84	78	.148	.162	.16	.06	5.9	7.0	7.2
Year	29.16	29.77	28.47	46.7	51.6	56.6	42.9	49.8	98	—9	39	41	75	68	.288	.303	33.14	2.42	5.6	5.3	5.0

*Mean for 30 days only.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

CHARLOTTE, N. C.

[H = 773 ft.; h_t = 88 ft.; h_r = 60 ft.; h_a = 76 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Wind. Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	6.8	E.	25	NW.	0	2	13	14	11	10	7	0	3	2	13	8	10	6	5	1	0	4	1	0	14	0	0
February	9.7	SW.	42	SW.	1	2	7	4	4	14	15	4	7	1	12	8	9	10	8	1	0	0	2	0	10	0	0
March	9.0	S.	40	SW.	1	1	11	8	8	13	8	8	5	0	9	14	8	5	3	1	0	1	0	0	7	1	0
April	7.1	S.	28	W.	0	6	4	5	11	20	6	4	4	0	20	7	3	8	6	0	0	1	0	3	0	4	0
May	6.4	S.	24	SW.	0	5	12	7	10	15	11	2	0	0	16	12	3	10	6	0	1	0	0	9	0	9	0
June	5.7	NE.	24	W.	0	2	16	12	2	9	13	3	3	0	7	17	6	9	9	0	0	0	0	5	0	7	0
July	6.0	S.	36	S.	0	5	3	10	6	21	17	0	0	0	11	11	9	15	14	0	0	1	0	8	0	11	0
August	5.2	S.	25	NE.	0	1	16	12	9	16	5	2	1	0	17	11	3	8	6	0	0	0	0	19	0	10	0
September	5.5	NE.	26	SW.	0	3	21	12	8	5	5	3	3	0	19	10	1	7	7	0	0	1	0	6	0	5	0
October	6.2	NE.	25	S.	0	7	15	9	9	8	7	3	4	0	13	12	6	6	6	0	0	2	0	0	0	0	0
November	6.9	S.	26	SW.	0	2	16	6	9	21	4	0	2	0	11	10	9	7	6	0	0	5	0	0	0	0	0
December	6.8	NE.	26	S.	0	4	17	10	8	13	3	6	1	0	18	4	9	6	5	1	0	1	0	0	14	0	0
Year	6.8	S.	42	SW.	2	40	151	109	95	165	101	35	33	3	166	124	76	97	81	4	1	16	3	50	45	47	0

CHATTANOOGA, TENN.

[H = 762 ft.; h_t = 106 ft.; h_r = 97 ft.; h_a = 112 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	6.8	W.	28	W.	0	7	7	12	5	8	2	12	8	1	7	9	15	9	7	1	1	14	1	0	17	1	0
February	8.6	W.	38	W.	0	13	5	6	5	4	6	14	5	0	11	10	8	9	8	0	0	9	1	0	12	1	0
March	9.6	S.	37	S.	0	7	10	3	6	13	4	7	12	0	8	12	11	11	10	1	0	3	0	0	9	1	0
April	7.6	W.	37	NW.	0	2	9	3	9	9	8	12	8	0	10	12	8	11	10	0	0	2	0	0	0	5	0
May	5.7	SW.	46	W.	2	4	3	4	5	12	18	12	4	0	9	15	7	8	7	0	2	0	0	3	0	11	0
June	6.0	S.	33	NW.	0	5	7	6	6	11	9	8	8	0	9	14	7	6	6	0	1	3	0	6	0	7	0
July	5.7	SW.	37	SW.	0	9	7	1	7	14	17	5	2	0	5	17	9	15	12	0	0	4	0	11	0	16	0
August	5.1	NE.	25	NW.	0	10	13	2	5	6	10	5	11	0	15	13	3	7	5	0	0	0	0	21	0	10	0
September	5.6	NE.	34	NE.	0	7	14	7	5	4	8	9	6	0	17	10	3	8	6	0	0	0	0	13	0	5	0
October	6.3	W.	40	S.	1	7	7	2	11	5	9	11	10	0	14	11	6	3	2	0	0	4	0	0	0	0	0
November	6.8	S.	30	W.	0	5	5	1	11	19	6	2	11	0	10	7	13	13	10	0	0	11	0	0	2	3	1
December	6.6	NE.	31	NW.	0	8	11	5	8	6	7	6	11	0	12	11	8	5	4	0	0	10	0	0	14	1	0
Year	6.7	S.	46	W.	3	84	98	52	83	111	104	103	96	1	127	141	98	105	87	2	4	60	2	54	48	61	1

CHEYENNE, WYO.

[H = 6,105 ft.; h_t = 58 ft.; h_r = 50 ft.; h_a = 60 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	12.4	NW.	56	W.	4	6	1	0	2	4	8	19	21	1	7	22	2	3	3	3	0	0	5	0	26	0	0
February	14.6	NW.	58	NW.	3	7	2	1	0	1	3	10	34	0	12	12	5	3	1	3	0	0	6	0	27	0	0
March	15.0	NW.	52	NW.	6	8	3	2	4	6	3	16	20	0	2	22	7	11	8	11	0	0	10	0	24	0	0
April	11.9	NW.	44	NW.	2	6	2	4	0	11	5	10	21	1	6	17	7	6	5	5	0	0	2	0	16	0	0
May	13.5	NW.	52	W.	5	9	2	3	2	14	2	14	14	2	4	21	6	8	7	1	0	0	0	0	4	2	0
June	9.5	S.	40	NW.	1	6	1	2	5	15	6	9	14	2	10	18	2	8	7	0	0	0	0	0	0	2	0
July	8.3	S.	38	SE.	0	6	4	6	6	18	3	9	10	0	6	20	5	14	14	0	1	0	0	0	0	4	0
August	8.7	W.	36	S.	0	2	3	2	4	14	1	17	17	2	11	13	7	9	8	0	0	0	0	0	0	1	0
September	9.2	S.	37	NW.	0	8	5	3	1	16	8	5	14	0	12	8	10	14	12	1	0	2	0	0	2	3	0
October	8.9	NW.	37	NW.	0	11	8	0	2	8	7	7	19	0	14	11	6	2	2	2	0	0	0	0	12	0	0
November	13.2	W.	43	NW.	3	7	0	0	0	9	7	21	16	0	11	10	9	4	1	4	0	0	6	0	26	0	0
December	12.0	NW.	56	NW.	1	7	0	0	0	6	6	14	29	0	11	13	7	1	0	1	0	1	0	0	25	0	0
Year	11.4	NW.	58	NW.	25	83	31	23	26	122	59	151	229	8	106	187	73	83	68	31	1	3	29	0	162	12	0

CHICAGO, ILL.

[H = 824 ft.; h_t = 241 ft.; h_r = 238 ft.; h_a = 274 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	15.8	S.	44	S.	3	7	4	5	7	13	7	10	9	0	6	7	18	10	6	5	0	5	12	0	28	0	0
February	19.9	W.	48	W.	8	12	5	1	1	5	7	18	9	0	11	10	8	12	6	10	0	2	14	0	26	0	0
March	18.4	N.	57	S.	8	10	5	4	7	14	6	9	7	0	10	14	7	9	8	5	0	1	11	0	26	2	0
April	19.8	S.	60	S.	10	4	6	5	9	18	6	7	5	0	12	11	7	11	11	0	0	0	1	0	7	4	0
May	18.5	S.	62	S.	7	2	7	2	8	18	13	10	2	0	16	14	1	10	8	0	0	0	0	0	0	7	1
June	14.2	NE.	50	SW.	2	7	15	5	7	11	5	7	3	0	14	14	2	12	9	0	1	2	0	0	0	5	0
July	14.9	NE.	36	NE.	0	7	17	4	5	8	7	12	2	0	13	14	4	8	8	0	0	0	0	5	0	2	0
August	14.1	S.	36	NW.	0	8	7	5	2	14	9	11	6	0	18	13	0	6	5	0	1	0	0	6	0	5	1
September	16.5	NE.	42	N.	5	14	6	2	5	10	6	6	11	0	9	13	8	13	11	0	0	4	0	0	0	5	0
October	16.5	N.	62	S.	4	16	4	4	7	12	5	10	4	0	16	8	7	6	4	1	0	0	0	0	4	1	0
November	19.5	W.	53	W.	7	5	2	1	5	12	10	17	8	0	7	8	15	12	10	2	0	0	5	0	18	0	0
December	16.0	W.	47	S.	2	7	4	2	2	10	11	18	8	0	4	10	17	5	3	4	0	3	8	0	18	0	0
Year	17.0	S.	62	S.	56	99	82	40	65	145	92	135	74	0	136	136	94	114	89	27	2	17	51	11	127	31	2

a By observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

CINCINNATI, OHIO.

[λ = 39° 6′ N.; φ = 84° 30′ W.; gravity corr., —0.02.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.51	29.98	28.91	30.5	35.6	39.3	28.0	33.6	55	—1	24	28	75	72	.136	.162	1.49	0.65	7.4	6.1	6.6
February	29.31	29.87	28.65	30.9	36.0	42.2	27.7	35.0	70	—2	23	25	72	65	.133	.145	1.56	.43	6.0	7.0	6.1
March	29.42	29.96	28.85	32.5	40.0	44.7	28.9	36.8	68	12	25	26	72	57	.147	.154	3.20	1.15	5.9	5.6	5.9
April	29.44	29.84	29.15	55.4	66.5	71.6	51.7	61.6	87	28	44	43	65	49	.317	.302	.59	.39	5.0	4.3	4.4
May	29.35	29.63	29.12	65.5	76.0	81.0	61.4	71.2	92	56	55	53	70	48	.439	.421	2.17	.70	4.8	3.9	4.4
June	29.33	29.59	29.02	68.1	77.3	82.0	64.2	73.1	96	54	59	58	74	54	.517	.497	2.70	1.67	5.0	4.3	4.3
July	29.39	29.60	29.16	71.8	79.0	84.8	67.7	76.2	95	57	65	66	79	65	.625	.649	7.40	2.08	5.0	5.2	4.6
August	29.41	29.73	29.11	69.2	79.0	84.4	65.8	75.1	96	55	62	62	78	58	.573	.582	3.70	1.90	3.7	3.5	3.6
September	29.38	29.74	28.92	60.1	69.2	75.3	55.7	65.5	93	38	53	54	79	62	.423	.444	5.00	2.36	3.8	3.9	5.1
October	29.42	29.69	29.10	46.2	56.9	62.8	43.9	53.4	77	31	39	41	77	57	.251	.264	2.29	.69	2.8	3.1	3.8
November	29.53	29.96	28.97	43.7	49.2	56.4	39.5	48.0	71	15	35	a37	73	a65	.225	a.245	3.29	1.43	6.9	a4.7	6.4
December	29.55	30.04	29.08	33.8	40.5	44.8	31.4	38.1	61	14	27	28	77	60	.154	.156	1.09	.52	6.9	4.7	5.8
Year	29.42	30.04	28.65	50.6	58.8	64.1	47.2	55.6	96	—2	43	43	74	59	.328	.335	34.48	2.36	5.3	4.7	5.1

a For 29 days.

CLEVELAND, OHIO.

[λ = 41° 30′ N.; φ = 81° 42′ W.; gravity corr., —0.01.]

January	29.32	29.74	28.75	26.1	28.2	32.4	22.9	27.6	46	—2	23	23	86	78	.127	.128	1.58	0.44	8.4	6.5	7.7
February	29.09	29.74	28.51	26.1	28.6	34.3	21.1	27.7	60	—4	22	24	86	82	.130	.133	3.72	1.30	7.0	7.2	7.3
March	29.23	29.76	28.65	26.9	31.7	37.1	23.2	30.2	65	8	24	26	87	78	.135	.148	2.64	.81	6.0	6.8	6.8
April	29.27	29.76	28.97	50.4	55.6	61.6	45.2	53.4	85	22	43	40	77	72	.309	.330	4.72	1.65	4.5	4.6	5.7
May	29.19	29.49	28.80	63.0	68.8	73.7	57.9	65.8	84	47	55	55	76	64	.438	.445	1.53	.74	4.6	3.5	4.8
June	29.18	29.44	28.81	65.6	70.0	74.3	59.0	66.6	88	45	58	60	78	71	.499	.525	6.10	3.10	5.1	3.7	5.0
July	29.22	29.46	28.92	70.0	73.4	78.6	64.8	71.7	90	56	63	63	78	71	.582	.584	4.84	1.51	4.7	4.5	5.4
August	29.25	29.60	28.92	67.1	73.2	78.5	61.9	70.2	93	47	61	64	81	74	.552	.621	3.10	.71	5.4	3.7	4.7
September	29.22	29.56	28.70	58.5	63.3	68.9	54.4	61.6	88	44	53	56	83	78	.419	.468	3.72	1.04	6.0	5.2	6.1
October	29.24	29.61	28.87	44.1	50.4	56.1	41.0	48.6	76	29	37	40	76	68	.230	.257	.84	.45	6.0	4.2	4.8
November	29.31	29.72	28.68	41.9	44.7	51.4	36.9	44.2	70	17	35	36	78	73	.227	.235	1.59	.43	7.9	7.1	8.0
December	29.34	29.91	28.85	30.4	33.8	37.6	27.7	32.6	57	14	26	27	82	75	.143	.148	2.30	.80	8.1	6.9	7.8
Year	29.24	29.91	28.51	47.5	51.8	57.0	43.0	50.0	93	—4	42	43	81	74	.316	.335	36.68	3.10	6.1	5.3	6.2

COLUMBIA, MO.

[λ = 38° 58′ N.; φ = 92° 14′ W.; gravity corr., —0.0.2]

January	.....	29.90	28.88	.....	32.7	42.5	23.6	33.0	63	2	....	22	....	63	.....	.124	1.03	0.48	.....	5.8	6.9
February	.....	29.65	28.75	.....	35.9	45.7	26.2	36.0	76	5	....	21	....	55	.....	.119	1.58	.74	.....	5.4	6.4
March	.....	29.65	28.64	.....	41.5	50.5	29.0	39.8	81	11	....	27	....	56	.....	.161	1.13	.41	.....	6.0	6.9
April	.....	29.45	28.82	.....	64.6	75.1	52.1	63.6	90	21	....	48	....	57	.....	.363	3.08	.70	.....	6.4	6.4
May	.....	29.26	28.80	.....	72.4	82.3	60.0	71.2	90	48	....	62	....	70	.....	.555	5.61	2.50	.....	6.3	6.7
June	.....	29.39	28.93	.....	76.0	83.4	62.2	72.8	95	49	....	66	....	72	.....	.645	4.33	1.83	.....	5.1	5.9
July	.....	29.30	29.01	.....	80.2	88.5	66.4	77.4	97	53	....	71	....	74	.....	.763	3.79	1.56	.....	5.1	5.3
August	.....	29.47	28.89	.....	78.0	90.2	64.9	77.6	104	49	....	66	....	69	.....	.668	1.85	.94	.....	3.9	4.3
September	.....	29.49	28.88	.....	65.1	78.7	54.8	66.8	97	33	....	57	....	77	.....	.496	3.61	1.06	.....	6.0	6.4
October	.....	29.48	28.69	.....	54.0	68.5	41.6	55.0	82	23	....	44	....	70	.....	.299	2.45	.90	.....	3.5	4.4
November	.....	29.85	28.86	.....	42.2	54.1	32.1	43.1	77	6	....	34	....	72	.....	.222	1.61	.63	.....	5.0	6.6
December	.....	29.84	28.95	.....	39.1	49.1	29.5	39.3	72	12	....	32	....	77	.....	.187	1.11	.58	.....	4.4	6.4
Year	.....	29.90	28.64	.....	56.8	67.4	45.2	56.3	104	2	....	46	....	68	.....	.384	31.18	2.50	.....	5.2	6.0

COLUMBIA, S. C.

[λ = 34° N.; φ = 81° 3′ W.; gravity corr., —.]

January	.....	.....	.....	.....	.....	53.7	33.5	43.6	68	15	....	....	....	....	.....	.....	3.16	1.60	.....	.....	.....
February	.....	.....	.....	.....	.....	58.8	36.8	47.8	78	10	....	....	....	....	.....	.....	8.00	3.83	.....	.....	.....
March	.....	.....	.....	.....	.....	65.2	39.5	52.4	85	26	....	....	....	....	.....	.....	1.52	.60	.....	.....	.....
April	.....	.....	.....	.....	.....	80.7	55.6	68.2	96	36	....	....	....	....	.....	.....	.95	.65	.....	.....	.....
May	.....	.....	.....	.....	.....	89.4	65.8	77.6	99	51	....	....	....	....	.....	.....	3.66	1.00	.....	.....	.....
June	.....	.....	.....	.....	.....	89.2	68.1	78.6	99	56	....	....	....	....	.....	.....	3.28	.95	.....	.....	.....
July	.....	.....	.....	.....	.....	91.6	71.5	81.6	100	62	....	....	....	....	.....	.....	10.89	3.36	.....	.....	.....
August	.....	.....	.....	.....	.....	91.6	70.8	81.2	101	56	....	....	....	....	.....	.....	2.38	1.22	.....	.....	.....
September	.....	.....	.....	.....	.....	89.1	63.7	76.4	104	42	....	....	....	....	.....	.....	.74	.60	.....	.....	.....
October	.....	.....	.....	.....	.....	75.2	51.4	63.3	85	36	....	....	....	....	.....	.....	.42	.26	.....	.....	.....
November	.....	.....	.....	.....	.....	69.8	48.8	59.3	82	33	....	....	....	....	.....	.....	3.53	1.14	.....	.....	.....
December	.....	.....	.....	.....	.....	54.7	33.2	44.0	69	18	....	....	....	....	.....	.....	3.38	1.30	.....	.....	.....
Year	.....	.....	.....	.....	.....	75.8	53.2	64.5	104	10	....	....	....	....	.....	.....	41.89	3.83	.....	.....	.....

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

CINCINNATI, OHIO.

[H = 628 ft.; h_t = 152 ft.; h_r = 145 ft.; h_a = 157 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	7.8	NW.	27	NW.	0	1	6	12	11	5	10	7	10	0	7	10	14	11	9	3	0	5	4	0	17	0	0
February	11.0	SW.	40	W.	1	5	7	3	5	10	11	6	11	0	6	12	11	14	12	7	0	2	3	0	16	0	0
March	9.5	NW.	34	NW.	0	10	9	5	5	7	4	7	15	0	8	13	10	13	11	7	0	1	2	0	24	1	0
April	9.0	SE.	37	W.	0	2	5	3	17	13	6	5	9	0	13	14	3	7	2	0	1	1	0	0	2	0	0
May	6.7	SE.	34	W.	0	2	8	9	15	7	5	9	6	1	12	14	5	14	8	0	0	0	0	2	0	10	0
June	6.6	NW.	27	NW.	0	5	8	12	10	4	6	7	8	0	14	10	6	10	7	0	0	0	0	1	0	7	0
July	7.5	SW.	43	SW.	1	6	6	3	10	8	20	2	7	0	14	10	7	16	13	0	0	0	0	6	0	9	0
August	5.8	S.	50	NW.	2	7	9	6	11	14	2	4	9	0	18	10	3	8	7	0	1	0	0	8	0	6	0
September	6.4	E.	34	NW.	0	10	10	9	10	6	6	5	3	1	11	10	9	10	7	0	0	2	0	3	0	4	0
October	6.5	NW.	36	SW.	0	6	10	8	11	5	5	3	14	0	18	6	7	7	5	0	0	4	0	0	1	0	0
November	8.4	SE.	33	SW.	0	3	2	5	18	11	7	6	8	0	8	8	14	11	8	0	0	1	2	0	7	0	0
December	7.3	S.	29	S.	0	8	6	8	9	10	8	5	8	0	11	7	13	6	5	1	0	1	4	0	16	0	0
Year	7.7	SE.	50	NW.	4	65	86	83	132	100	90	66	108	2	140	124	102	127	94	18	2	17	15	20	83	37	0

CLEVELAND, OHIO.

[H = 762 ft.; h_t = 190 ft.; h_r = 161 ft.; h_a = 201 ft.]

January	13.1	SE.	44	W.	3	1	7	3	18	4	9	11	9	0	3	9	19	13	9	8	0	1	10	0	26	0	0
February	17.0	W.	61	W.	2	5	6	4	10	7	10	12	4	0	4	9	16	19	10	15	0	1	10	0	24	0	0
March	16.1	W.	52	NW.	5	3	11	1	14	4	6	9	14	0	4	12	15	13	11	11	0	0	14	0	28	1	0
April	14.1	SE.	56	W.	3	2	8	0	21	5	7	8	9	0	11	7	12	11	10	2	1	1	0	0	6	4	0
May	12.4	SE.	50	W.	3	4	4	6	17	4	14	9	4	0	11	11	9	12	10	0	0	0	0	0	0	10	0
June	9.6	SE.	41	W.	1	3	14	2	15	7	5	7	7	0	9	13	8	10	8	0	1	1	0	0	0	6	0
July	11.5	SE.	66	W.	1	8	7	1	19	6	10	5	6	0	7	15	9	14	13	0	0	1	0	1	0	8	0
August	10.6	SE.	58	W.	1	5	5	6	16	10	10	2	8	0	12	11	8	11	10	0	1	0	0	4	0	4	0
September	11.9	SE.	54	W.	1	2	12	1	19	9	9	2	6	0	8	8	14	14	11	0	0	0	0	0	0	4	0
October	13.4	SE.	49	NW.	1	2	5	9	12	12	6	6	10	0	13	7	11	10	5	0	0	1	0	0	1	0	0
November	18.1	SW.	44	S.	4	1	2	2	13	17	13	6	6	0	3	5	22	14	11	1	0	0	2	0	11	0	0
December	14.7	S.	48	NW.	1	5	6	2	12	11	13	5	8	0	4	6	21	13	10	8	0	3	11	0	20	0	0
Year	13.5	SE.	66	W.	26	41	87	37	186	96	112	82	91	0	89	113	164	154	118	45	3	9	47	5	116	37	0

COLUMBIA, MO.

[H = 783 ft.; h_t = 4 ft.; h_r = 2 ft.; h_a = 84 ft.]

January	8.7	NW.	32	SW.	0	1	3	7	5	0	4	4	7	0	9	4	18	7	3	3	0	0	4	0	26	0	0
February	10.1	NW.	36	NW.	0	5	3	1	1	1	6	3	9	0	9	6	14	6	4	3	0	0	3	0	22	0	0
March	10.7	NW.	37	SW.	0	4	4	3	3	3	5	2	7	0	7	6	18	9	6	5	0	1	2	0	20	2	0
April	12.0	SW.	39	SW.	0	0	5	4	5	6	8	1	1	0	8	6	16	13	11	0	0	1	0	0	3	7	1
May	8.6	S.	39	SW.	0	0	4	2	8	9	3	4	1	0	4	12	15	15	13	0	0	0	0	0	0	11	0
June	6.3	SE.	32	NW.	0	2	4	5	6	4	3	1	5	0	9	8	13	11	9	0	0	0	0	5	0	7	0
July	6.5	S.	23	SW.	0	5	2	1	6	8	7	1	1	0	10	11	10	11	9	0	0	0	0	11	0	10	0
August	6.6	S.	31	NW.	0	1	6	3	6	10	1	1	3	0	13	12	6	6	5	0	0	0	0	14	0	6	0
September	7.8	NW.	42	NW.	1	4	8	0	6	2	0	1	9	0	6	10	14	15	12	0	1	0	0	4	0	11	0
October	8.0	W.	37	SW.	0	3	4	3	4	3	4	5	5	0	14	9	8	7	6	0	0	1	0	0	3	0	0
November	11.1	SE.	32	S.	0	2	2	2	7	2	5	4	6	0	8	8	14	8	6	0	0	1	3	0	16	2	0
December	8.4	SW.	24	NW.	0	2	3	2	5	5	6	6	2	0	10	7	14	4	3	0	0	1	0	0	19	0	1
Year	8.7	SE.	42	NW.	1	29	48	33	62	53	52	33	56	0	107	99	160	112	87	11	1	5	12	34	109	56	2

COLUMBIA, S. C.

[H = — ft.; h_t = 5 ft.; h_r = 3 ft.; h_a = — ft.]

January	.....	.....	...	.....	....	2	10	1	5	1	6	3	3	0	7	12	12	7	6	0	0	1	0	0	13	2	0
February	.....	.....	...	.....	....	2	3	0	1	1	9	3	10	0	13	10	6	9	7	1	1	1	1	0	10	2	0
March	.....	.....	...	.....	....	1	9	0	3	2	7	3	6	0	10	15	6	8	6	1	0	0	0	0	4	1	0
April	.....	.....	...	.....	....	1	6	0	2	4	14	0	3	0	13	15	2	4	4	0	0	0	0	7	0	3	0
May	.....	.....	...	.....	....	0	7	0	2	3	10	2	6	1	11	17	3	11	9	0	0	1	0	14	0	9	0
June	.....	.....	...	.....	....	1	8	2	1	3	12	0	3	0	9	11	10	13	10	0	0	0	0	15	0	3	0
July	.....	.....	...	.....	....	1	3	1	3	3	14	2	4	0	9	12	10	9	8	0	0	0	0	23	0	4	0
August	.....	.....	...	.....	....	2	5	1	6	4	7	3	3	0	15	13	3	7	7	0	0	0	0	22	0	5	0
September	.....	.....	...	.....	....	1	10	3	3	5	4	0	3	1	18	8	4	4	3	0	0	0	0	16	0	1	0
October	.....	.....	...	.....	....	2	7	6	0	1	3	6	6	0	15	9	7	3	2	0	0	0	0	0	0	0	0
November	.....	.....	...	.....	....	2	10	2	1	2	7	2	4	0	10	10	10	8	8	0	0	3	0	0	0	1	0
December	.....	.....	...	.....	....	4	11	2	0	0	3	4	7	0	13	7	11	8	8	1	0	0	1	0	13	1	0
Year	.....	.....	...	.....	....	19	89	18	27	29	96	28	58	2	143	139	84	91	78	3	1	6	2	97	40	32	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

COLUMBUS, OHIO.

[λ = 39° 58′ N.; φ = 83° W; gravity corr., — 0.01.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.27	29.67	28.66	28.1	32.4	36.1	25.4	30.8	52	—3	24	26	86	78	.138	.150	2.34	0.78	8.5	6.4	8.0
February	29.06	29.64	28.39	28.0	32.7	38.8	24.8	31.8	65	—2	23	27	83	80	.138	.154	1.93	.46	7.1	6.9	7.2
March	29.19	29.71	28.57	29.1	35.8	41.9	25.5	33.7	67	7	26	28	87	74	.150	.169	3.04	.91	6.2	6.0	6.3
April	29.23	29.66	28.94	52.6	60.8	69.2	48.1	58.6	89	23	45	48	76	63	.329	.360	2.70	1.00	5.1	4.7	5.5
May	29.14	29.42	28.83	64.3	71.9	80.4	59.0	69.7	93	50	57	58	78	62	.465	.483	2.61	.78	5.9	5.2	5.7
June	29.13	29.36	28.80	66.8	72.2	81.0	60.5	70.8	90	48	60	61	79	71	.533	.557	3.38	1.10	5.4	5.3	5.6
July	29.18	29.39	28.94	69.9	76.1	84.1	64.7	74.4	95	52	65	66	85	72	.632	.654	9.47	3.01	6.2	6.6	6.3
August	29.20	29.52	28.93	67.4	75.0	83.2	62.6	72.9	94	51	62	64	84	70	.580	.623	3.53	1.03	4.4	5.1	5.5
September	29.17	29.52	28.69	58.2	65.7	73.8	52.7	63.2	94	36	54	56	87	72	.440	.464	5.93	2.38	5.8	5.9	6.8
October	29.20	29.49	28.86	43.6	52.3	59.7	41.0	50.4	77	25	39	42	85	70	.246	.276	.55	.22	5.1	5.0	5.8
November	29.30	29.69	28.65	41.0	45.7	54.0	36.5	45.2	72	16	36	37	84	73	.234	.244	3.53	1.14	7.6	5.4	7.5
December	29.31	29.82	28.83	30.3	36.1	41.1	28.0	34.6	58	8	27	28	86	73	.151	.159	1.52	.79	7.5	5.2	7.0
Year	29.20	29.82	28.39	48.2	54.7	61.9	44.1	53.0	95	—3	43	45	83	72	.336	.358	40.53	3.01	6.2	5.6	6.4

CONCORDIA, KANS.

[λ = 39° 35′ N.; φ = 97° 41′ W.; gravity corr., — 0.01.]

January	28.63	29.26	28.21	24.1	34.6	43.3	21.7	32.5	64	—3	19	22	82	59	.110	.124	0.52	0.33	4.6	4.1	4.6
February	28.52	28.96	28.00	26.7	39.9	48.8	25.9	37.4	79	10	22	26	80	56	.119	.146	.30	.20	2.6	1.4	2.5
March	28.54	29.07	27.68	26.7	40.9	47.0	25.4	36.2	82	5	20	24	77	53	.116	.131	1.02	.42	4.5	4.5	4.9
April	28.38	28.95	27.80	51.9	66.6	73.8	48.1	61.0	92	22	46	44	80	49	.338	.311	2.60	.69	4.1	3.7	4.9
May	28.38	28.66	28.06	61.4	71.5	77.2	57.8	67.5	92	43	56	56	85	62	.468	.465	6.46	1.78	4.5	4.3	6.0
June	28.50	28.87	28.14	65.0	79.8	84.8	61.3	73.0	98	48	59	59	82	50	.512	.506	2.12	.73	4.2	2.8	3.4
July	28.53	28.73	28.25	69.8	81.7	86.9	66.9	76.9	98	58	64	66	83	60	.608	.637	9.27	4.64	4.5	2.3	5.3
August	28.54	28.84	28.26	67.5	80.7	86.9	65.6	76.2	103	54	61	63	81	57	.552	.584	3.09	.82	3.6	3.1	4.3
September	28.55	28.91	28.17	54.6	68.2	75.8	53.1	64.4	97	35	49	52	84	60	.370	.417	3.53	1.46	2.8	2.8	4.4
October	28.55	28.92	28.05	42.8	55.5	65.4	41.5	53.4	91	28	38	40	83	58	.235	.256	2.56	1.47	3.3	3.2	3.7
November	28.61	29.22	28.00	28.5	36.5	43.9	25.0	34.4	75	0	24	28	80	70	.142	.166	1.78	1.61	4.3	3.8	4.7
December	28.64	29.26	28.18	32.4	41.3	50.3	30.7	40.5	66	18	26	31	78	68	.148	.180	.09	.09	4.1	3.7	4.8
Year	28.53	29.26	27.68	46.0	58.1	65.3	43.6	54.4	103	—3	40	43	81	58	.310	.327	33.34	4.64	3.9	3.3	4.5

CORPUS CHRISTI, TEX.

[λ = 27° 49′ N.; φ = 97° 25′ W.; gravity corr., — 0.04.]

January	30.12	30.68	29.67	53.2	59.0	62.4	51.0	56.7	79	34	50	54	90	84	.388	.430	2.41	1.43	4.9	4.8	5.8
February	30.06	30.47	29.52	53.1	62.1	66.7	50.9	58.8	83	39	48	52	85	73	.363	.410	2.20	.92	3.7	3.9	4.2
March	30.00	30.43	29.66	60.6	65.1	69.0	57.9	63.4	80	42	57	59	88	82	.488	.523	.62	.22	6.8	5.5	6.1
April	30.01	30.49	29.74	69.7	71.5	74.4	67.1	70.8	82	53	67	67	92	86	.694	.686	1.60	1.00	8.0	7.7	7.7
May	29.92	30.12	29.69	76.8	78.9	81.5	74.3	77.9	86	65	73	74	80	84	.812	.827	1.94	1.90	5.5	4.9	6.0
June	29.94	30.20	29.71	78.0	83.4	86.4	74.8	80.6	94	68	73	74	86	74	.823	.847	2.19	1.90	1.2	1.2	2.4
July	30.02	30.18	29.87	79.6	84.0	87.0	76.5	81.8	90	72	75	76	87	77	.875	.901	2.38	1.02	1.5	2.4	3.8
August	30.02	30.21	29.87	78.7	84.2	87.6	76.3	82.0	92	70	75	76	89	77	.872	.900	.53	.34	2.6	3.0	3.7
September	29.95	30.14	29.78	76.1	81.5	84.2	73.2	78.7	89	58	72	74	88	78	.809	.849	4.39	1.06	3.6	3.7	4.5
October	30.01	30.17	29.78	68.1	73.6	76.1	65.6	70.8	83	56	65	68	91	84	.634	.694	4.12	1.70	5.7	5.3	5.7
November	30.08	30.50	29.75	62.8	66.3	70.4	59.2	64.8	80	30	60	62	89	85	.559	.598	.30	.15	5.2	3.1	5.4
December	30.20	30.51	29.76	51.1	59.9	65.8	49.5	57.6	80	32	48	52	88	78	.351	.403	.73	.52	3.6	3.3	3.1
Year	30.03	30.68	29.52	67.3	72.5	76.0	64.7	70.3	94	30	64	66	88	80	.639	.672	23.41	1.90	4.4	4.1	4.9

DAVENPORT, IOWA.

[λ = 41° 30′ N.; φ = 90° 38′ W.; gravity corr., — 0.01.]

January	29.48	30.02	29.06	23.2	28.4	32.5	19.6	26.6	52	—8	18	22	81	74	.110	.124	0.89	0.61	6.9	5.2	6.3
February	29.31	29.92	28.75	22.5	29.1	33.8	19.6	26.7	62	—6	18	22	81	74	.108	.126	1.45	.53	6.6	5.7	6.0
March	29.39	29.90	28.60	27.8	36.8	40.8	25.2	33.0	70	9	21	25	76	62	.119	.141	.84	.37	4.8	5.2	5.9
April	29.32	29.74	28.82	50.5	60.8	66.5	47.7	57.1	83	22	42	44	72	55	.299	.327	3.41	.97	6.6	5.9	5.5
May	29.26	29.54	28.84	63.4	72.1	77.4	59.3	68.4	88	50	54	56	73	59	.432	.457	4.03	1.88	6.2	6.6	6.5
June	29.32	29.68	29.04	65.8	75.4	79.9	61.5	70.7	90	50	58	60	78	60	.501	.524	2.28	1.27	6.2	5.9	6.3
July	29.37	29.57	29.05	68.9	79.4	84.2	64.9	74.6	94	53	61	62	78	57	.554	.567	5.68	2.08	5.5	4.5	5.3
August	29.37	29.75	29.05	66.9	77.3	82.5	63.7	73.1	96	50	60	63	80	63	.545	.610	3.12	1.42	5.0	4.0	4.0
September	29.38	29.74	29.05	54.4	62.8	69.5	51.8	60.6	89	36	50	51	85	68	.376	.401	3.98	.96	4.5	7.0	5.9
October	29.38	29.70	28.78	41.9	52.7	59.5	40.0	49.8	72	26	35	37	78	57	.221	.244	1.67	1.10	4.7	3.2	4.6
November	29.44	30.06	28.76	32.3	37.7	43.8	27.7	35.8	72	2	28	30	82	72	.179	.193	.68	.29	7.1	6.5	7.1
December	29.49	30.04	29.01	29.5	33.9	39.0	26.5	32.8	59	8	25	28	84	80	.143	.160	.65	.36	6.1	6.5	7.0
Year	29.38	30.06	28.60	45.6	53.9	59.2	42.3	50.8	96	—8	39	42	79	65	.299	.323	28.68	2.08	5.8	5.5	5.9

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

COLUMBUS, OHIO.

[H = 824 ft.; h_t = 87 ft.; h_r = 81 ft.; h_a = 100 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	6.7	SW.	25	SW.	0	4	5	9	7	7	14	6	7	3	2	9	20	12	9	5	0	0	7	0	21	0	0
February	8.9	SW.	27	NW.	0	5	5	5	4	10	16	8	5	0	5	7	17	16	13	8	0	3	5	0	19	0	0
March	8.6	W.	30	NW.	0	9	4	11	5	5	7	12	9	0	6	14	11	14	13	8	0	0	6	0	25	1	0
April	7.9	SW.	26	E.	0	2	3	9	9	12	8	6	10	1	10	14	6	12	7	0	1	0	0	0	6	5	0
May	5.8	SW.	34	S.	0	5	10	6	10	8	13	7	3	0	6	16	9	14	10	0	0	0	0	3	0	8	0
June	5.5	E.	26	N.	0	5	7	11	11	6	8	6	6	0	10	11	9	17	10	0	0	0	0	1	0	9	0
July	6.2	SW.	40	W.	1	8	3	4	7	12	21	4	3	0	4	18	9	16	14	0	0	0	0	4	0	8	0
August	5.0	S.	24	NW.	0	9	8	5	8	13	5	7	4	3	5	19	7	9	9	0	0	0	0	6	0	8	0
September	5.7	E.	26	NW.	0	9	9	11	6	10	5	4	5	1	4	11	15	10	8	0	0	0	0	3	0	2	0
October	6.8	N.	38	SW.	0	14	5	8	10	3	7	7	8	0	12	8	11	6	6	0	0	2	0	0	1	0	0
November	8.8	SW.	30	SW.	0	4	2	1	12	8	17	4	12	0	5	6	19	12	7	0	0	0	2	0	12	0	0
December	7.7	SW.	28	SW.	0	8	6	3	6	4	18	4	13	0	5	12	14	9	6	2	0	0	6	0	19	0	0
Year	7.0	SW.	40	W.	1	82	67	83	95	98	139	75	85	8	74	145	147	147	112	23	1	5	26	17	103	41	0

CONCORDIA, KANS.

[H = 1,398 ft.; h_t = 42 ft.; h_r = 34 ft.; h_a = 47 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	6.6	S.	30	N.	0	10	1	3	11	17	5	4	10	1	15	4	12	6	4	3	0	1	6	0	27	0	0
February	7.3	N.	29	NW.	0	12	6	2	3	11	6	7	10	1	22	5	2	3	2	2	0	0	1	0	23	0	0
March	9.7	NW.	38	S.	0	10	12	4	5	10	2	7	12	0	13	8	10	8	6	8	1	0	8	0	24	1	0
April	11.9	S.	44	S.	1	2	3	5	16	18	7	3	6	0	11	12	7	12	8	0	1	0	0	3	3	10	0
May	9.6	S.	42	N.	1	6	6	4	12	19	3	6	5	1	5	16	10	14	13	0	3	2	0	1	0	12	0
June	6.4	S.	28	S.	0	8	6	5	14	16	5	3	2	1	16	11	3	14	10	0	0	0	0	8	0	11	0
July	6.1	S.	21	S.	0	2	7	12	9	23	6	0	1	2	6	18	7	13	9	0	0	0	0	11	0	8	0
August	6.2	S.	23	S.	0	10	5	12	10	17	4	2	0	2	13	12	6	12	9	0	0	0	0	13	0	12	0
September	6.2	SE.	23	SE.	0	13	6	3	15	10	5	4	3	1	13	9	8	9	6	0	0	2	0	4	0	7	0
October	6.0	S.	24	NW.	0	13	7	0	3	14	9	7	6	3	18	7	6	7	6	0	0	0	0	1	2	2	0
November	7.7	N.	30	S.	0	20	5	0	2	14	8	2	9	0	11	13	6	3	3	1	0	0	7	0	20	1	0
December	5.9	S.	27	SE.	0	9	1	3	7	15	14	9	1	3	15	7	9	1	1	0	0	1	3	0	20	0	0
Year	7.5	S.	44	S.	2	115	65	53	107	184	74	54	65	15	158	122	86	102	77	14	5	6	25	41	119	64	0

CORPUS CHRISTI, TEX.

[H = 20 ft.; h_t = 42 ft.; h_r = 34 ft.; h_a = 50 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.8	NE.	36	SE.	0	11	14	9	10	5	4	1	8	0	9	8	14	12	6	0	0	2	0	0	0	1	0
February	11.0	SE.	35	NW.	0	10	3	1	18	6	5	6	8	1	15	5	9	9	6	0	0	3	0	0	0	2	0
March	13.7	SE.	36	SE.	0	12	4	8	32	2	0	0	4	0	6	11	14	7	4	0	0	0	0	0	0	0	0
April	16.1	SE.	36	SE.	0	3	1	7	45	3	0	0	1	0	1	9	20	12	5	0	0	2	0	0	0	0	0
May	16.9	SE.	36	SE.	0	0	1	5	51	4	1	0	0	0	7	13	11	3	1	0	1	0	0	0	0	3	0
June	12.3	SE.	42	N.	1	2	0	3	33	12	5	3	2	0	22	6	2	3	3	0	0	0	0	1	0	2	0
July	12.7	SE.	30	E.	0	0	0	8	29	19	3	2	1	0	13	16	2	5	5	0	0	0	0	0	0	2	0
August	12.0	SE.	30	SE.	0	0	0	11	27	9	4	4	7	0	17	13	1	6	4	0	0	0	0	3	0	4	0
September	11.7	SE.	31	NW.	0	7	3	8	27	2	5	1	7	0	13	11	6	13	12	0	0	0	0	0	0	4	0
October	10.1	N.	36	NW.	0	17	6	14	12	1	2	4	5	1	8	10	13	12	11	0	0	0	0	0	0	1	0
November	11.7	SE.	34	SE.	0	14	7	5	17	6	0	0	9	2	9	12	9	6	3	1	0	4	0	0	1	2	0
December	9.5	NW.	30	N.	0	12	6	4	11	7	6	1	15	0	20	5	6	5	3	0	0	1	0	0	0	0	0
Year	12.3	SE.	42	N.	1	88	45	83	312	76	35	22	67	4	140	119	107	93	63	1	1	12	0	4	1	21	0

DAVENPORT, IOWA.

[H = 599 ft.; h_t = 71 ft.; h_r = 64 ft.; h_a = 79 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.3	NE.	36	W.	0	4	12	10	5	5	6	11	9	0	5	14	12	6	2	4	0	1	12	0	28	0	0
February	11.0	SW.	43	NW.	2	3	10	3	0	2	16	15	9	0	6	13	10	10	5	8	0	0	12	0	25	0	0
March	11.0	NW.	46	SW.	1	4	9	6	4	6	10	7	15	1	9	10	12	9	5	5	0	0	6	0	26	2	0
April	13.1	SW.	44	W.	3	3	6	8	14	9	8	2	10	0	8	14	8	11	9	1	1	0	0	0	5	5	0
May	9.9	SW.	60	NW.	2	2	5	13	12	5	12	7	6	0	7	11	13	13	9	0	0	0	0	0	0	13	0
June	7.9	E.	34	W.	0	3	8	19	1	3	12	6	8	0	5	11	14	11	9	0	0	0	0	0	0	7	0
July	7.2	SW.	35	NW.	0	6	6	9	1	6	17	10	7	0	9	12	10	12	11	0	0	0	0	6	0	7	0
August	7.1	SW.	35	SW.	0	9	1	9	3	6	17	8	9	0	15	7	9	8	6	0	0	0	0	5	0	9	0
September	8.6	E.	36	SW.	0	10	6	11	5	8	4	6	9	1	6	11	13	18	16	0	0	3	0	0	0	4	0
October	8.7	E.	38	SW.	0	2	8	15	6	3	6	11	11	0	16	8	7	4	3	0	0	1	0	0	6	1	0
November	9.3	NW.	34	S.	0	3	4	4	7	7	9	9	17	0	6	7	17	6	4	1	0	0	8	0	20	0	0
December	6.9	NW.	25	SW.	0	5	7	5	8	7	10	6	14	0	5	10	16	7	2	3	0	4	6	0	22	0	0
Year	9.2	SW.	60	NW.	8	54	82	112	66	67	127	98	124	2	97	128	141	115	81	22	1	9	44	11	132	48	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

DENVER, COLO.

[λ=39° 45′ N.; φ=105° W.; gravity corr., —0.01.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	24.70	25.05	24.31	29.3	41.0	51.5	23.2	37.4	67	0	14	14	54	36	.080	.084	0.25	0.12	2.8	4.0	4.3
February	24.69	25.05	24.22	29.7	42.6	50.0	25.5	37.8	68	9	16	16	56	36	.087	.089	.24	.13	3.4	3.5	4.3
March	24.64	24.97	24.10	28.6	42.4	49.5	25.3	37.4	76	0	21	19	74	45	.117	.107	1.43	.75	5.3	6.1	5.7
April	24.59	25.03	24.21	38.2	58.9	63.9	35.4	49.6	80	9	26	22	64	30	.142	.124	.93	.41	4.4	4.2	4.4
May	24.63	24.90	24.27	48.3	67.4	72.3	45.3	58.8	86	32	32	26	59	28	.190	.157	1.27	.67	4.1	5.7	5.0
June	24.80	25.07	24.41	55.3	76.8	83.2	53.1	68.2	92	44	45	36	70	27	.304	.222	.89	.25	3.1	6.1	5.0
July	24.85	25.03	24.67	60.8	77.6	85.1	58.7	71.9	96	53	50	47	69	39	.366	.331	2.80	1.24	3.0	6.3	4.7
August	24.86	25.06	24.61	60.0	79.2	85.9	57.8	71.8	94	43	44	41	60	31	.302	.272	.97	.65	4.0	6.0	4.4
September	24.79	25.05	24.53	50.8	67.4	74.3	48.1	61.2	91	37	40	41	70	44	.258	.264	1.81	1.03	4.0	6.0	4.5
October	24.77	25.06	24.43	39.5	57.2	64.6	35.6	50.1	82	25	27	23	61	30	.145	.126	.84	.42	4.2	4.5	4.1
November	24.69	25.02	24.10	26.0	38.9	49.9	21.9	35.9	75	—9	8	8	47	32	.064	.063	.10	.09	3.5	3.1	4.7
December	24.79	25.10	24.38	31.0	42.2	51.6	26.0	38.8	68	18	12	14	46	35	.073	.086	.31	.30	2.3	4.2	5.0
Year	24.73	25.10	24.10	41.5	57.6	65.2	38.0	51.6	96	—9	28	26	61	34	.177	.160	11.84	1.24	3.7	5.0	4.7

DES MOINES, IOWA.

[λ=41° 35′ N.; φ=93° 37′ W.; gravity corr., —0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
January	29.22	29.79	28.75	20.8	28.1	32.3	17.7	25.0	49	—8	15	20	76	72	.096	.117	0.60	0.27	6.8	4.4	6.2
February	29.08	29.62	28.55	24.5	33.3	38.3	21.4	29.8	70	—2	17	22	72	63	.103	.129	.79	.36	4.7	4.3	5.6
March	29.13	29.62	28.31	26.4	37.0	42.1	22.4	32.2	71	3	18	22	68	55	.108	.126	1.24	.54	4.9	4.3	6.4
April	29.03	29.51	28.54	48.8	61.4	67.1	44.9	56.0	86	20	40	43	73	53	.283	.306	3.47	1.04	4.9	4.8	6.1
May	28.98	29.23	28.57	60.6	70.5	76.1	56.9	66.5	87	46	54	54	78	60	.419	.437	6.50	1.72	6.1	5.5	6.6
June	29.08	29.45	28.83	64.4	76.1	79.8	60.4	70.1	91	49	58	57	80	54	.489	.482	2.69	1.21	6.2	4.6	6.1
July	29.11	29.32	28.77	66.7	78.5	82.6	63.7	73.2	95	54	60	61	81	58	.539	.557	8.15	2.03	4.5	4.4	4.1
August	29.11	29.44	28.82	65.7	76.4	82.3	63.1	72.7	94	47	60	63	81	64	.529	.595	5.49	3.29	4.6	3.5	4.5
September	29.13	29.45	28.82	52.9	63.1	68.5	50.6	59.6	83	32	48	52	85	68	.363	.408	3.61	1.22	5.3	4.7	5.2
October	29.12	29.48	28.50	41.0	54.1	61.9	39.2	50.6	75	26	35	38	81	54	.220	.239	2.69	1.95	3.5	3.4	3.2
November	29.18	29.84	28.45	29.0	34.0	41.3	22.8	32.0	74	—2	22	26	72	71	.147	.159	1.01	.40	5.7	5.5	5.9
December	29.22	29.84	28.77	30.0	35.6	41.5	26.6	34.0	59	12	25	27	80	71	.143	.156	.85	.38	6.1	5.3	5.5
Year	29.12	29.84	28.31	44.2	54.0	59.5	40.8	50.1	95	—8	38	40	77	62	.287	.309	37.09	3.29	5.3	4.6	5.4

DETROIT, MICH.

[λ=42° 20′ N.; φ=83° 3′ W.; gravity corr., —0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
January	29.34	29.78	28.86	23.8	26.6	29.8	21.0	25.4	42	—6	20	23	84	85	.114	.127	1.17	0.30	7.0	6.5	7.3
February	29.11	29.76	28.60	23.5	26.0	31.3	18.7	25.0	58	—3	19	20	82	75	.112	.114	1.60	.81	6.0	5.9	6.7
March	29.26	29.76	28.73	24.9	30.7	35.7	21.8	28.8	63	4	19	21	78	66	.110	.119	2.28	.56	5.5	4.6	5.0
April	29.28	29.79	28.92	47.5	53.5	60.3	42.1	51.2	85	18	41	44	79	70	.290	.327	3.61	1.22	5.2	5.3	4.8
May	29.19	29.52	28.72	61.2	67.7	75.1	55.5	65.3	90	43	52	54	73	63	.397	.438	2.05	.42	4.5	4.9	3.7
June	29.21	29.48	28.84	64.5	70.6	76.6	59.1	67.8	86	45	57	59	77	68	.471	.507	6.97	2.23	4.8	4.9	3.9
July	29.23	29.49	29.00	68.0	73.6	79.6	63.2	71.4	91	52	61	64	80	72	.555	.600	5.39	2.70	5.2	4.9	4.1
August	29.26	29.65	28.92	66.3	71.6	78.4	62.2	70.3	95	49	60	61	80	69	.532	.551	4.60	1.74	4.9	4.4	4.7
September	29.24	29.61	28.65	55.6	61.0	67.5	51.7	59.6	84	33	51	51	84	72	.389	.397	4.23	1.55	6.9	4.8	5.2
October	29.28	29.65	28.86	43.1	48.9	55.0	40.3	47.6	74	30	37	39	79	69	.230	.246	1.65	1.04	4.6	3.5	4.2
November	29.33	29.75	28.64	39.2	40.8	47.7	33.3	40.5	65	13	33	33	79	73	.209	.208	1.72	.57	6.8	6.8	7.3
December	29.37	29.92	28.88	27.5	31.3	35.4	25.1	30.2	56	2	24	26	86	79	.134	.142	.93	.44	7.2	6.2	7.3
Year	29.26	29.92	28.60	45.4	50.2	56.0	41.2	48.6	95	—6	49	41	80	72	.295	.315	36.20	2.70	5.7	5.2	5.4

DODGE CITY, KANS.

[λ=37° 45′ N.; φ=100° W.; gravity corr., —0.02.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
January	27.45	28.06	27.07	27.2	38.0	48.0	24.8	36.4	68	2	24	24	88	61	.132	.137	0.49	0.26	5.3	3.9	5.3
February	27.38	27.77	26.87	27.3	44.2	53.3	25.0	39.2	75	14	22	22	81	42	.120	.119	T.	T.	2.3	3.0	3.2
March	27.38	27.84	26.63	27.7	45.7	54.5	25.6	40.0	87	11	21	22	75	45	.115	.123	.25	.18	4.5	5.2	4.3
April	27.24	27.84	26.63	48.8	67.5	74.2	45.6	59.9	92	16	41	42	78	44	.289	.290	5.50	2.91	4.2	4.0	4.0
May	27.25	27.56	27.00	59.8	74.8	81.2	55.5	68.4	101	41	52	49	78	45	.401	.377	1.13	.72	5.5	4.9	4.2
June	27.38	27.68	27.00	65.4	85.2	90.2	62.1	76.2	104	46	56	52	73	36	.455	.412	1.98	1.21	4.1	4.8	3.6
July	27.43	27.58	27.20	68.4	81.9	89.3	65.8	77.6	100	57	63	63	83	56	.573	.586	5.41	1.46	4.3	4.8	4.5
August	27.42	27.74	27.14	67.2	85.8	93.4	65.4	79.4	102	52	58	56	73	39	.486	.459	.73	.58	3.7	3.7	3.0
September	27.42	27.76	27.00	55.2	70.5	79.2	53.3	66.2	101	38	49	48	80	49	.362	.354	1.06	.50	3.9	3.8	4.2
October	27.43	27.77	27.06	42.5	57.1	68.0	40.4	54.2	90	24	36	38	80	52	.222	.240	2.45	1.40	3.8	3.5	3.6
November	27.45	27.97	26.94	28.3	39.0	50.6	25.3	38.0	77	2	23	25	78	58	.135	.150	.34	.33	4.6	3.4	4.1
December	27.50	28.05	27.04	31.1	42.2	54.4	27.8	41.1	70	15	25	28	76	58	.138	.158	.53	.50	4.8	3.7	3.8
Year	27.39	28.06	26.63	45.7	61.0	69.7	43.0	56.4	104	2	39	39	79	49	.286	.284	19.87	2.91	4.2	4.1	4.0

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

DENVER, COLO.

[H = 5,290 ft.; h_t = 79 ft.; h_r = 74 ft.; h_a = 151 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	8.6	S.	66	SW.	3	4	6	0	6	21	6	6	13	0	10	17	4	4	3	4	0	1	3	0	29	0	0
February	9.5	S.	54	NW.	3	1	8	1	10	12	8	6	12	0	12	14	3	3	2	3	0	0	1	0	24	0	0
March	10.2	NW.	60	SW.	3	5	7	2	5	14	9	7	13	0	2	22	7	9	5	8	0	0	5	0	21	0	0
April	9.6	S.	55	NW.	4	7	10	5	7	12	8	1	8	2	13	12	5	6	5	3	0	0	0	0	9	0	0
May	9.3	SE.	42	E.	3	4	5	0	9	17	10	6	10	1	8	18	5	8	7	1	1	0	0	0	0	3	0
June	7.3	S.	36	NE.	0	3	12	0	6	16	7	3	8	5	5	22	3	9	5	0	2	0	0	5	0	11	0
July	7.2	NE.	45	NW.	2	8	11	1	7	13	6	4	11	1	9	18	4	12	7	0	1	0	0	5	0	12	0
August	6.8	S.	39	SW.	0	3	7	1	11	22	5	5	7	1	11	16	4	7	5	0	0	0	0	11	0	9	0
September	7.1	S.	40	NE.	1	8	7	5	3	14	2	6	13	2	13	10	7	8	7	0	1	2	0	1	0	3	0
October	6.7	S.	32	NW.	0	9	5	7	4	24	0	6	4	3	13	13	5	5	5	3	0	0	0	0	5	0	0
November	7.8	S.	44	W.	3	9	6	2	8	15	5	5	10	0	8	18	4	2	1	1	0	0	4	0	22	0	0
December	7.6	S.	36	W.	0	6	2	0	7	26	2	12	7	0	7	17	7	2	1	2	0	0	0	0	26	0	0
Year	8.1	S.	66	SW.	22	67	86	24	83	206	68	67	116	15	111	197	58	75	53	25	5	3	13	22	136	38	0

DES MOINES, IOWA.

[H = 867 ft.; h_t = 84 ft.; h_r = 75 ft.; h_a = 88 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.5	N.	28	N.	0	14	5	11	8	5	7	5	7	0	7	10	14	6	4	4	0	0	14	0	28	0	0
February	8.7	NW.	34	NW.	0	16	3	4	5	3	6	5	16	0	8	12	9	7	6	4	0	0	6	0	24	0	0
March	9.9	NW.	38	W.	0	14	7	1	8	5	8	5	14	0	8	8	15	9	5	6	0	0	8	0	25	2	0
April	11.4	SE.	38	SW.	0	4	7	8	12	8	9	4	8	0	9	7	14	12	10	0	1	1	0	0	4	10	0
May	9.2	S.	38	SW.	0	5	4	7	9	17	6	5	9	0	3	16	12	13	12	0	2	0	0	0	0	10	0
June	6.6	N.	40	SE.	1	11	4	6	8	8	11	2	9	1	7	12	11	11	7	0	0	0	0	2	0	8	0
July	6.5	N.	30	NE.	0	11	6	9	5	13	13	0	4	1	15	12	4	11	10	0	0	0	0	5	0	9	0
August	6.7	S.	36	SW.	0	18	1	6	1	17	9	5	4	1	12	12	7	12	10	0	0	0	0	5	0	9	0
September	6.7	NE.	27	S.	0	12	10	6	9	4	10	3	6	0	12	6	12	13	8	0	0	0	0	0	0	2	0
October	7.5	N.	33	W.	0	9	10	2	14	5	6	7	9	0	19	7	5	6	5	0	0	0	0	0	7	2	0
November	9.0	NW.	33	SW.	0	6	8	6	7	6	6	5	16	0	12	4	14	11	7	5	0	0	8	0	22	0	0
December	7.2	NW.	30	SW.	0	10	1	7	5	7	13	8	11	0	11	9	11	5	3	2	0	0	5	0	24	0	0
Year	8.1	N.	40	SE.	1	130	66	73	91	98	104	54	113	3	123	115	128	116	87	21	3	1	41	12	134	52	0

DETROIT, MICH.

[H = 730 ft.; h_t = 160 ft.; h_r = 147 ft.; h_a = 166 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.4	SW.	38	SW.	0	5	1	9	2	7	17	9	12	0	6	5	20	11	5	9	0	2	16	0	28	0	0
February	13.2	SW.	49	W.	2	2	10	8	2	1	15	12	8	0	6	9	14	16	7	14	0	2	13	0	25	0	0
March	11.9	NW.	37	SW.	0	2	13	7	4	4	8	7	17	0	11	12	8	10	8	6	0	1	15	0	28	0	3
April	11.2	SW.	43	W.	1	1	5	12	4	3	19	4	11	1	12	10	8	12	6	1	0	1	0	0	7	7	2
May	11.1	SW.	48	SW.	3	1	6	7	8	4	22	11	3	0	15	13	3	11	11	0	0	0	0	0	0	11	1
June	7.8	NE.	50	W.	1	6	15	6	5	8	7	9	4	0	13	13	4	13	10	0	0	0	0	0	0	6	0
July	8.3	SW.	30	W.	0	9	8	2	7	6	17	9	4	0	14	11	6	11	11	0	0	1	0	1	0	5	0
August	7.9	SW.	37	NW.	0	10	8	1	6	7	16	9	5	0	11	15	5	15	11	0	0	0	0	2	0	9	0
September	8.9	SW.	30	W.	0	13	9	3	6	1	14	10	4	0	6	18	6	12	8	0	0	0	0	0	0	2	0
October	9.1	SW.	36	SW.	0	9	10	5	5	4	14	9	6	0	17	6	8	8	6	0	0	0	0	0	3	0	0
November	12.8	SW.	52	SW.	2	3	6	0	6	8	20	14	3	0	6	6	18	12	9	0	0	1	5	0	15	0	0
December	9.4	SW.	34	SW.	0	6	7	2	2	5	20	10	9	1	6	8	17	9	4	6	0	3	12	0	20	0	0
Year	10.2	SW.	52	SW.	9	67	98	62	57	58	189	113	86	2	123	126	117	140	96	36	0	11	61	3	126	40	6

DODGE CITY, KANS.

[H = 2,504 ft.; h_t = 44 ft.; h_r = 36 ft.; h_a = 52 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.6	SE.	34	SE.	0	15	5	3	21	6	1	1	10	0	13	7	11	7	3	0	0	2	3	0	24	0	0
February	10.6	NW.	37	S.	0	15	5	2	7	6	1	4	17	1	19	6	4	0	0	0	0	0	0	0	25	0	0
March	13.0	NE.	50	SW.	1	14	13	5	9	7	0	3	11	0	16	9	6	7	1	4	0	0	3	0	22	0	0
April	17.0	S.	59	S.	7	2	6	4	16	14	5	2	11	0	15	12	3	9	9	0	3	2	0	2	3	7	0
May	15.3	S.	49	S.	6	13	8	6	10	19	1	0	5	0	11	18	2	6	4	0	1	2	0	5	0	6	0
June	12.6	SE.	47	SE.	3	3	12	4	28	10	1	0	2	0	18	10	2	6	5	0	1	0	0	16	0	13	0
July	11.1	SE.	37	SE.	0	1	6	9	39	3	3	0	1	0	14	13	4	14	13	0	0	1	0	15	0	9	0
August	11.0	SE.	32	S.	0	9	6	5	26	13	0	1	2	0	23	7	1	3	2	0	0	1	0	23	0	2	0
September	10.4	SE.	34	S.	0	7	12	5	23	7	1	1	4	0	15	9	6	8	6	0	0	1	0	8	0	2	0
October	9.8	SE.	36	S.	0	10	11	5	16	5	2	3	9	1	17	10	4	5	5	1	0	1	0	0	2	2	0
November	10.3	SE.	37	SW.	0	18	9	3	12	9	1	1	10	2	15	9	6	2	1	1	0	3	4	0	22	1	0
December	9.3	S.	40	S.	1	14	2	0	8	17	3	9	8	1	20	5	6	2	2	0	0	1	1	0	24	0	0
Year	11.7	SE.	59	S.	18	116	95	51	215	116	19	25	90	5	196	115	55	69	51	6	5	14	11	69	122	42	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

DUBUQUE, IOWA.

[λ=42° 30′ N.; φ=90° 44′ W.; gravity corr., —0.01.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	.....	.....	.....	19.1	25.2	32.0	16.6	24.3	49	—10	.....	.....	.....	.....	.....	.....	0.75	.....	.....	.....	.....
February	.....	.....	.....	21.0	27.4	35.2	19.0	27.1	62	— 7	.....	.....	.....	.....	.....	.....	1.93	.....	.....	.....	.....
March	.....	.....	.....	26.5	33.7	40.1	23.1	31.6	66	2	.....	.....	.....	.....	.....	.....	.76	.....	.....	.....	.....
April	29.28	29.71	28.78	47.9	58.4	65.3	44.8	55.0	86	20	41	44	76	59	.284	.324	7.80	2.60	5.5	5.9	5.8
May	29.20	29.51	28.78	61.9	71.9	78.9	57.1	68.0	92	48	53	54	72	56	.407	.427	7.63	2.80	5.1	6.1	5.5
June	29.28	29.63	28.99	64.2	75.0	82.5	59.3	70.9	96	49	56	58	75	57	.462	.501	3.11	1.96	5.5	6.5	5.5
July	29.32	29.52	29.00	66.0	79.2	85.0	61.9	73.4	97	50	59	57	79	52	.515	.486	7.72	4.82	5.7	5.7	5.6
August	29.32	29.70	29.00	66.3	76.0	83.1	62.2	72.6	99	48	60	61	80	61	.534	.562	2.05	.58	5.1	5.1	5.2
September	29.33	29.66	29.00	52.9	61.1	68.7	50.5	59.6	86	33	48	51	83	72	.354	.398	5.67	2.11	5.1	6.2	6.1
October	29.33	29.68	28.73	39.9	51.3	59.3	38.7	49.0	74	24	35	40	82	65	.217	.260	2.56	2.20	4.8	3.4	4.4
November	29.38	30.01	28.69	29.2	34.8	41.3	24.8	33.0	74	0	25	27	82	72	.155	.171	1.60	.69	5.8	6.3	6.8
December	29.44	30.00	28.94	27.5	32.0	36.7	24.0	30.4	58	6	25	25	89	74	.140	.143	.71	.36	7.5	6.7	7.4
Year	.....	.....	.....	43.5	52.2	59.0	40.2	49.6	99	—10	.....	.....	.....	.....	.....	.....	42.29	.....	.....	.....	.....

DULUTH, MINN.

[λ=46° 47′ N.; φ=92° 6′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
January	29.35	29.78	28.72	10.7	15.6	19.8	7.0	13.4	42	—25	8	12	86	85	.075	.084	1.30	0.32	6.3	5.6	6.0
February	29.15	29.82	28.52	11.7	19.7	25.5	7.2	16.4	54	—20	7	13	79	74	.071	.090	.19	.09	5.1	4.8	5.3
March	29.25	29.87	28.35	17.2	25.7	30.1	14.3	22.2	54	— 6	13	18	81	73	.087	.102	1.59	.52	6.2	5.2	5.2
April	29.20	29.71	28.59	34.1	40.8	44.6	31.6	38.1	60	11	30	33	86	77	.176	.202	4.06	.91	6.8	5.5	6.6
May	29.10	29.49	28.61	48.3	56.3	62.4	44.2	53.3	88	38	43	43	82	66	.284	.288	5.18	1.43	6.0	6.6	5.9
June	29.20	29.44	28.96	57.9	62.9	70.4	51.6	61.0	90	39	50	50	77	66	.374	.367	2.00	.63	3.3	5.1	4.6
July	29.22	29.46	28.98	61.2	70.0	75.7	57.3	66.5	89	47	55	55	81	62	.439	.442	1.74	.48	3.7	3.9	4.2
August	29.19	29.54	28.70	60.7	68.0	74.4	56.4	65.4	90	46	54	54	78	62	.419	.422	2.41	.93	3.4	2.8	4.4
September	29.22	29.58	28.76	49.6	56.8	62.0	47.1	54.6	78	34	43	45	78	68	.285	.310	1.00	.52	6.3	4.1	4.6
October	29.24	29.64	28.55	37.4	43.5	47.9	35.7	41.8	75	19	33	34	83	73	.195	.208	3.46	1.16	4.6	4.7	5.6
November	29.29	29.85	28.41	18.9	21.8	27.4	14.5	21.0	44	—20	17	20	92	91	.106	.117	3.42	1.09	7.5	6.5	7.7
December	29.30	29.91	28.86	19.5	23.8	27.9	15.7	21.8	46	—21	17	20	88	84	.101	.110	.84	.24	4.7	5.2	5.6
Year	29.23	29.91	28.35	35.6	42.1	47.3	31.9	39.6	90	—25	31	33	83	73	.218	.228	27.19	1.43	5.3	5.0	5.5

EAST CLALLAM, WASH.

[λ=48° 14′ N.; φ=124° 13′ W.; gravity corr., —.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
January	.....	.....	.....	.....	.....	43.7	34.1	38.9	55	24	.....	.....	.....	.....	.....	.....	26.93	3.85	.....	.....	.....
February	.....	.....	.....	.....	.....	47.3	36.7	42.0	54	29	.....	.....	.....	.....	.....	.....	14.34	3.00	.....	.....	.....
March	.....	.....	.....	.....	.....	47.5	33.5	40.5	61	22	.....	.....	.....	.....	.....	.....	4.32	1.07	.....	.....	.....
April	.....	.....	.....	.....	.....	51.7	35.2	43.4	69	28	.....	.....	.....	.....	.....	.....	4.54	.55	.....	.....	.....
May	.....	.....	.....	.....	.....	57.2	40.2	48.7	81	33	.....	.....	.....	.....	.....	.....	4.02	.71	.....	.....	.....
June	.....	.....	.....	.....	.....	61.4	45.4	53.4	90	37	.....	.....	.....	.....	.....	.....	2.85	1.20	.....	.....	.....
July *a*	.....	.....	.....	.....	.....	67.3	49.5	58.4	80	43	.....	.....	.....	.....	.....	.....	.00	.00	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Year	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

a For 22 days. Observations discontinued July 23, 1896.

EASTPORT, ME.

[λ=44° 54′ N.; φ=66° 59′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
January	30.02	30.38	29.28	15.9	19.8	23.6	13.5	18.6	43	—13	6	8	63	59	.070	.070	0.84	0.48	5.4	4.3	5.7
February	29.70	30.30	28.83	19.7	23.9	29.1	15.3	22.2	44	—15	12	17	70	73	.087	.103	2.77	.82	6.6	6.0	6.7
March	29.75	30.44	28.91	25.8	29.2	34.1	21.7	27.9	48	8	19	21	74	70	.115	.121	2.72	.48	5.3	5.5	6.8
April	29.98	30.38	28.99	37.6	39.9	46.4	32.8	39.6	67	22	27	29	66	67	.150	.163	.86	.30	4.9	4.6	5.6
May	29.92	30.39	29.45	47.8	46.1	56.3	39.8	48.0	85	31	37	38	69	75	.233	.232	1.00	.24	4.0	3.4	5.7
June	29.83	30.31	29.22	55.5	55.5	64.9	47.7	56.3	80	40	47	48	75	76	.334	.334	2.71	1.15	4.4	4.2	5.5
July	29.88	30.32	29.47	59.7	59.7	70.2	52.8	61.5	84	48	55	54	87	83	.443	.420	4.24	.86	5.8	3.3	6.0
August	29.93	30.20	29.72	57.4	57.8	66.6	52.7	59.6	78	48	54	53	88	85	.416	.404	1.07	.45	3.6	3.5	6.1
September	29.96	30.32	29.34	53.4	54.4	60.5	48.7	54.6	73	37	49	50	85	85	.354	.367	3.67	1.10	6.5	4.6	6.9
October	29.93	30.50	29.27	45.0	46.4	51.5	41.5	46.5	59	31	40	41	82	82	.253	.262	6.27	3.51	6.1	6.3	7.2
November	30.07	30.72	29.52	36.6	38.7	45.5	31.3	38.4	60	10	31	32	76	78	.188	.197	3.69	1.40	6.9	5.7	7.7
December	29.99	30.70	29.08	21.9	23.8	29.5	15.4	22.4	48	— 2	16	17	76	73	.107	.108	1.70	1.00	6.4	2.9	5.8
Year	29.91	30.72	28.83	39.7	41.3	48.2	34.4	41.3	85	—15	33	34	76	76	.229	.232	31.54	3.51	5.5	4.5	6.3

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

DUBUQUE, IOWA.

[H = 650 ft.; h_t = 49 ft.; h_r = 40 ft.; h_a = 56 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	.....	W.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	10	14	3	3	2	0	0	13	0	29	0	0
February	.....	W.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	6	13	7	7	4	0	0	10	0	25	0	0
March	.....	N.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14	6	11	9	3	5	1	0	8	0	25	2	0
April	b 6.1	S.	24	S.	0	4	2	6	6	18	8	7	8	1	7	17	6	15	11	2	4	1	0	0	8	5	0
May	5.6	SW.	30	NW.	0	6	2	6	7	16	14	9	2	0	5	19	7	17	12	0	0	0	0	5	0	7	0
June	4.5	SE.	32	SW.	0	9	7	4	12	12	5	5	6	0	7	20	3	11	8	0	0	1	0	7	0	8	0
July	4.2	NE.	24	NW.	0	9	10	9	3	10	7	6	8	0	5	22	4	12	11	0	0	0	0	8	0	6	0
August	4.0	SW.	28	NW.	0	17	5	0	2	8	14	7	7	2	9	13	9	11	8	0	0	0	0	7	0	8	0
September	4.3	N.	18	SW.	0	13	6	5	5	8	8	4	7	4	7	11	12	16	15	0	0	2	0	0	0	4	0
October	4.0	S.	19	W.	0	3	9	2	4	12	10	7	8	7	13	12	6	4	4	0	0	1	0	0	6	1	0
November	5.6	NW.	22	W.	0	9	4	1	4	9	8	9	15	1	8	4	18	13	8	4	0	0	8	0	22	0	0
December	3.7	S.	22	NW.	0	5	7	4	6	13	10	6	8	3	7	3	21	9	5	4	0	2	10	0	27	0	0
Year	.....	S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	99	143	124	127	95	21	5	7	49	27	142	41	0

DULUTH, MINN.

[H = 702 ft.; h_t = 95 ft.; h_r = 90 ft.; h_a = 106 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	8.6	NW.	42	NW.	1	8	5	4	0	4	13	6	19	3	9	10	12	13	9	11	0	1	25	0	31	0	1
February	10.3	NW.	37	NW.	0	5	6	1	0	1	16	7	21	1	9	10	10	7	1	7	0	0	19	0	28	0	2
March	12.6	NE.	42	NE.	1	5	19	1	1	2	14	2	18	0	10	10	11	14	7	13	0	0	18	0	30	0	8
April	11.3	NE.	52	NW.	1	4	30	2	1	1	6	4	9	3	8	8	14	15	13	2	0	10	3	0	13	3	4
May	11.0	NE.	42	SW.	1	6	33	0	0	2	11	3	6	1	5	18	8	17	13	0	0	5	0	0	0	7	2
June	9.1	NE.	42	NE.	2	3	28	3	2	2	6	7	8	1	9	16	5	11	7	0	1	3	0	1	0	6	0
July	7.6	NE.	34	NW.	0	6	21	2	1	2	15	6	9	0	12	16	3	11	8	0	0	3	0	0	0	5	0
August	9.2	NW.	33	SW.	0	7	15	0	1	0	21	7	11	0	9	20	2	9	5	0	2	4	0	1	0	7	5
September	10.4	SW.	38	NE.	0	9	11	1	0	0	18	7	14	0	9	15	6	11	6	0	0	0	0	0	0	2	4
October	10.4	NE.	55	NE.	2	8	16	0	2	3	7	13	13	0	9	12	10	11	10	2	0	2	0	0	9	0	0
November	10.7	W.	46	NE.	1	5	10	3	3	3	10	14	12	0	3	9	18	14	12	12	0	0	15	0	30	0	0
December	8.6	SW.	40	N.	1	6	4	1	4	3	21	8	15	0	12	7	12	13	5	12	0	0	19	0	30	0	0
Year	10.0	NE.	55	NE.	10	72	198	18	15	23	158	84	155	9	104	151	111	146	96	59	3	28	99	2	171	30	26

EAST CLALLAM, WASH.

[H = — ft.; h_t = 5 ft.; h_r = 1 ft.; h_a = — ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	.....	E.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1	27	26	26	9	0	0	2	0	12	0	0
February	.....	SW.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	0	24	25	21	3	0	0	0	0	6	0	0
March	.....	E.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	3	17	13	13	3	0	0	1	0	10	0	0
April	.....	SW.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	1	21	17	15	2	0	1	0	0	9	0	0
May	.....	W.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	6	15	17	14	0	0	0	0	0	0	0	0
June	.....	W.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15	2	13	11	9	0	0	0	0	0	0	0	0
July	.....	W.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16	1	5	0	0	0	0	4	0	0	0	0	0
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Year	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

EASTPORT, ME.

[H = 76 ft.; h_t = 69 ft.; h_r = 63 ft.; h_a = 74 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	15.5	N.	50	NE.	1	17	12	2	0	0	6	4	20	1	10	12	9	10	5	9	0	0	25	0	31	0	4
February	15.1	W.	60	E.	4	11	7	4	5	3	6	15	6	1	2	15	12	18	13	15	0	2	16	0	26	1	2
March	17.6	W.	60	E.	10	9	6	10	3	3	9	16	6	0	6	10	15	15	12	10	0	8	13	0	27	1	2
April	10.8	N.	48	E.	2	13	11	6	3	5	10	8	4	0	9	13	8	8	4	2	0	3	1	0	11	0	1
May	10.1	S.	36	E.	0	12	8	7	0	19	7	7	1	1	7	17	7	9	7	0	0	6	0	0	2	2	2
June	8.3	S.	29	S.	0	6	7	3	2	12	16	6	7	1	4	22	4	11	9	0	0	8	0	0	0	4	2
July	7.5	S.	36	E.	0	7	5	1	2	16	17	7	4	3	7	15	9	15	13	0	0	10	0	0	0	2	0
August	7.1	S.	27	S.	0	4	5	3	4	19	10	9	5	3	5	17	9	9	6	0	0	12	0	0	0	2	1
September	9.5	S.	39	SE.	0	8	6	1	1	15	12	10	6	1	3	15	12	12	10	0	0	8	0	0	0	1	1
October	12.2	S.	58	S.	1	11	13	3	2	10	4	13	5	1	1	15	15	14	10	0	0	6	0	0	1	1	5
November	12.0	N.	47	SE.	3	13	6	1	6	7	11	6	9	1	3	8	19	15	11	4	0	9	2	0	12	0	0
December	13.9	W.	56	NE.	3	15	2	1	1	3	10	12	18	0	11	9	11	6	5	5	0	0	14	0	29	0	1
Year	11.6	S.	60	E.	24	126	88	42	29	112	118	113	91	13	68	168	130	142	105	45	0	72	71	0	139	14	21

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station. b For 492 hours.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

EL PASO, TEX.

[λ = 31° 47′ N.; φ = 106° 30′ W.; gravity corr., −0.03.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	26.25	26.52	25.93	35.3	52.6	60.7	33.4	47.0	73	14	22	21	60	31	.126	.122	1.63	1.28	2.1	3.7	4.2
February	26.22	26.53	25.89	36.7	54.6	60.6	34.5	47.6	78	23	25	18	63	26	.135	.103	.14	.07	3.2	3.9	4.2
March	26.15	26.42	25.91	45.8	68.4	73.3	43.8	58.6	89	26	29	12	38	13	.113	.081	T.	T.	2.7	3.4	3.5
April	26.13	26.51	25.82	50.2	75.3	79.6	48.5	64.0	90	35	15	6	26	8	.094	.064	T.	T.	2.6	3.8	3.4
May	26.09	26.26	25.92	61.8	85.8	90.1	59.9	75.0	102	43	29	12	20	7	.122	.093	T.	T.	1.8	3.8	2.7
June	26.15	26.40	25.90	68.9	91.4	95.3	68.0	81.6	103	59	38	31	37	16	.258	.204	.60	.60	2.3	3.0	2.7
July	26.22	26.34	26.11	69.2	84.5	90.6	68.4	79.5	96	64	60	54	74	40	.523	.434	2.73	.67	4.3	6.5	5.1
August	26.24	26.45	26.07	68.1	88.3	91.7	67.6	79.6	97	61	55	49	64	27	.438	.354	1.09	.68	2.9	4.7	3.6
September	26.19	26.42	25.93	63.7	80.4	85.8	62.4	74.1	94	50	54	48	71	35	.422	.348	1.48	.69	4.1	4.1	4.6
October	26.20	26.40	25.98	52.7	65.9	73.4	51.3	62.4	86	40	48	45	84	48	.338	.301	2.02	.87	3.8	3.5	4.2
November	26.22	26.62	25.88	43.8	60.2	68.8	41.6	55.2	79	23	29	27	58	29	.164	.150	.04	.04	1.2	2.9	2.5
December	26.31	26.56	26.04	33.9	53.6	61.9	32.3	47.1	71	21	21	20	58	27	.112	.111	.06	.06	0.8	2.2	2.6
Year	26.20	26.62	25.82	52.5	71.8	77.6	51.0	64.3	103	14	34	29	54	26	.237	.197	9.79	1.28	2.6	3.8	3.6

ERIE, PA.

[λ = 42° 7′ N.; φ = 80° 5′ W.; gravity corr., −0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.36	29.77	28.84	25.8	27.1	31.7	21.5	26.6	46	2	20	21	77	78	.110	.118	1.52	0.42	8.9	7.8	8.1
February	29.12	29.80	28.32	25.6	26.3	34.8	20.2	27.5	63	−7	21	20	82	78	.123	.117	3.97	1.03	7.6	7.8	7.4
March	29.26	29.81	28.64	24.9	29.0	35.7	20.8	28.2	67	8	19	23	80	78	.112	.132	3.41	.96	5.8	6.1	6.7
April	29.32	29.82	28.97	49.2	50.0	59.5	41.6	50.6	81	20	43	45	80	83	.314	.342	1.46	.29	5.3	6.3	6.1
May	29.24	29.54	28.85	62.1	64.4	71.1	55.6	63.4	83	47	52	52	70	66	.390	.391	2.63	.58	4.6	4.5	5.0
June	29.23	29.50	28.86	65.4	68.4	73.3	59.2	66.2	84	47	57	57	74	69	.469	.481	4.67	1.02	4.9	3.7	4.7
July	29.27	29.54	29.02	70.5	72.4	77.1	64.8	71.0	88	56	61	62	74	70	.553	.560	5.50	2.24	5.1	5.0	5.1
August	29.30	29.64	29.00	68.1	70.5	76.4	63.1	69.8	92	49	60	60	75	71	.531	.547	3.47	1.35	4.6	4.6	5.0
September	29.27	29.59	28.73	59.7	61.1	67.1	54.9	61.0	87	42	51	53	74	76	.391	.418	3.72	1.20	5.6	5.0	5.9
October	29.30	29.63	28.92	46.2	49.4	54.2	42.8	48.5	78	32	37	36	72	66	.231	.239	2.01	.66	5.9	5.5	5.5
November	29.37	29.81	28.80	42.8	44.4	51.4	37.8	44.6	70	20	36	35	77	72	.223	.223	2.90	.61	7.0	5.8	6.9
December	29.39	29.98	28.87	30.1	32.8	36.2	27.0	31.6	58	13	25	26	82	78	.140	.145	1.76	.74	7.5	7.5	7.3
Year	29.29	29.98	28.32	47.5	49.6	55.7	42.4	49.1	92	−7	40	41	76	74	.299	.309	37.02	2.24	6.1	5.8	6.1

EUREKA, CAL.

[λ = 40° 48′ N.; φ = 124° 11′ W.; gravity corr., −0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.92	30.37	29.35	48.7	52.5	56.3	43.8	50.0	66	35	46	48	92	84	.312	.332	8.14	1.34	6.6	7.5	7.4
February	30.17	30.37	29.90	44.4	52.4	55.6	41.2	48.4	69	34	42	44	91	76	.269	.293	4.61	1.31	3.3	5.1	4.8
March	30.00	30.42	29.46	45.9	52.7	56.2	43.7	50.0	69	29	44	45	92	77	.297	.311	6.93	1.86	4.9	6.2	5.6
April	29.99	30.29	29.52	43.8	50.9	55.3	41.3	48.3	62	35	41	43	90	75	.261	.277	11.13	2.87	7.5	6.7	6.6
May	30.05	30.38	29.79	47.7	53.2	57.5	45.5	51.5	62	38	45	46	91	76	.302	.310	6.22	1.36	5.4	5.8	5.3
June	30.03	30.19	29.79	50.1	55.8	59.8	48.2	54.0	64	44	48	49	92	78	.329	.348	.51	.27	5.4	3.3	4.3
July	29.96	30.16	29.71	54.0	59.0	62.7	51.6	57.2	70	47	53	53	95	81	.396	.404	.00	.00	6.4	6.4	6.1
August	30.00	30.19	29.89	57.0	60.6	65.0	54.8	59.9	72	51	55	56	93	84	.433	.440	.70	.60	9.6	6.5	6.4
September	29.92	30.18	29.47	51.5	56.4	62.0	49.2	55.6	68	43	50	52	95	85	.362	.382	1.60	1.46	4.8	5.7	5.6
October	29.98	30.22	29.44	48.3	53.9	59.2	46.1	52.6	70	42	47	50	96	86	.326	.356	2.37	.94	3.9	4.5	5.4
November	30.04	30.33	29.65	44.8	51.9	56.0	42.2	49.1	69	27	42	45	90	78	.276	.307	8.00	3.04	5.9	6.3	5.9
December	30.04	30.44	29.56	47.9	52.7	57.8	44.3	51.0	66	36	44	47	88	82	.291	.327	9.41	2.69	5.7	7.1	6.5
Year	30.01	30.44	29.35	48.7	54.3	58.6	46.0	52.3	72	27	46	48	92	80	.321	.341	59.62	3.04	5.8	5.9	5.8

FORT SMITH, ARK.

[λ = 35° 22′ N.; φ = 94° 24′ W.; gravity corr., −0.03.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.63	30.28	29.05	35.6	44.0	49.0	33.3	41.2	70	14	31	36	82	73	.179	.216	1.89	0.41	6.2	5.0	6.1
February	29.51	29.91	28.97	37.1	49.7	55.2	35.3	45.2	76	25	32	36	81	62	.183	.220	1.88	.74	4.1	3.2	4.0
March	29.52	29.95	29.00	42.1	53.4	58.2	39.7	49.0	84	25	36	40	78	62	.223	.257	2.95	.73	5.9	5.4	6.8
April	29.48	29.96	29.18	61.9	73.1	78.6	57.3	68.0	90	32	54	55	75	54	.437	.465	.46	.23	5.2	4.4	5.3
May	29.42	29.68	29.13	69.0	78.7	85.0	63.0	74.0	91	54	62	66	80	67	.572	.658	5.99	2.85	5.7	4.6	5.4
June	29.46	29.75	29.24	72.6	82.9	89.3	67.5	78.4	97	57	66	68	80	62	.643	.690	1.54	1.31	5.2	3.6	3.7
July	29.52	29.69	29.36	79.0	90.3	96.0	73.2	84.6	103	62	69	67	72	48	.704	.660	.72	.30	3.5	3.6	3.7
August	29.51	29.82	29.25	75.8	90.1	97.7	71.5	84.6	107	59	65	69	71	44	.630	.595	1.31	.53	2.3	4.5	2.2
September	29.49	29.84	29.23	65.3	79.5	87.2	62.8	75.0	102	41	58	58	78	52	.505	.506	2.72	2.41	3.1	3.6	3.5
October	29.54	29.80	29.15	52.1	64.7	72.4	49.4	60.9	91	35	48	51	85	63	.343	.387	3.10	1.79	4.4	4.3	5.1
November	29.62	30.22	29.06	45.4	53.9	61.1	41.6	51.4	79	19	40	43	81	69	.274	.311	2.81	1.85	6.0	3.0	5.9
December	29.68	30.14	29.18	36.7	50.7	57.9	34.6	46.2	74	19	28	35	70	56	.165	.212	.33	.26	4.5	1.6	3.4
Year	29.53	30.28	28.97	56.0	67.6	74.0	52.4	63.2	107	14	49	52	78	59	.405	.431	25.70	2.85	4.7	3.9	4.7

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

EL PASO, TEX.

[H=3,767 ft.; h_t=10 ft.; h_r=2 ft.; h_a=110 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	9.9	NW.	47	NW.	3	1	5	10	5	3	3	10	25	0	11	17	3	4	3	1	1	1	0	0	12	1	0
February	11.7	NW.	45	W.	5	3	12	4	3	0	7	9	20	0	13	8	8	5	1	1	0	0	0	0	11	0	0
March	14.2	NW.	62	SW.	7	0	6	5	5	2	5	15	23	1	15	14	2	0	0	0	0	0	0	0	4	0	0
April	15.0	NW.	64	SW.	8	0	9	3	2	4	7	17	18	0	14	13	3	0	0	0	0	0	0	1	0	0	0
May	13.5	NW.	53	SW.	5	0	4	2	1	6	9	17	23	0	17	12	2	0	0	0	0	0	0	13	0	0	0
June	11.2	NW.	46	SW.	1	0	12	15	5	2	5	11	10	0	20	6	4	1	1	0	0	0	0	24	0	2	0
July	8.6	E.	49	NE.	3	0	13	16	9	3	5	3	13	0	9	17	5	15	10	0	0	0	0	19	0	12	0
August	9.4	E.	48	NE.	2	1	7	14	14	2	4	9	11	0	16	11	4	5	4	0	0	0	0	22	0	4	0
September	9.9	E.	48	NE.	3	0	9	22	7	0	4	11	7	0	11	13	6	6	5	0	0	0	0	9	0	3	0
October	9.1	NW.	50	NW.	3	1	10	15	5	0	2	14	15	0	11	15	5	10	6	0	0	0	0	0	0	4	0
November	11.1	NW.	46	SW.	5	1	8	11	3	1	2	12	22	0	17	12	1	1	1	0	0	0	0	0	4	0	0
December	9.6	NW.	58	NW.	3	3	3	10	6	1	2	8	28	1	20	9	2	1	1	0	0	0	0	0	14	0	0
Year	11.1	NW.	64	SW.	48	10	98	127	65	24	55	136	215	2	174	147	45	48	32	2	1	1	0	88	45	26	0

ERIE, PA.

[H=714 ft.; h_t=92 ft.; h_r=82 ft.; h_a=102 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.8	W.	37	NE.	0	2	7	6	5	8	12	16	6	0	4	5	22	15	13	12	0	1	15	0	28	0	0
February	14.6	W.	47	W.	1	3	7	2	2	10	12	12	10	0	3	11	15	19	12	15	0	0	11	0	25	0	0
March	12.8	W.	42	SE.	1	4	10	1	6	7	10	12	12	0	5	13	13	11	9	9	0	0	17	0	28	1	0
April	10.7	W.	37	W.	0	0	8	0	7	10	10	17	8	0	5	14	11	13	8	3	0	1	1	0	8	3	0
May	11.2	W.	36	SW.	0	3	11	3	5	8	14	18	0	0	8	20	3	14	10	0	0	0	0	0	0	8	0
June	8.1	NE.	24	NE.	0	4	12	3	3	10	10	10	7	1	11	16	3	11	10	0	0	0	0	0	0	7	0
July	9.5	W.	29	S.	0	2	7	0	4	12	13	16	6	2	9	16	6	8	7	0	0	0	0	0	0	5	0
August	9.2	SW.	33	SW.	0	4	5	4	4	13	14	6	12	0	9	20	2	13	10	0	0	0	0	1	0	7	0
September	10.5	SW.	38	SE.	0	5	12	1	8	8	15	5	6	0	6	14	10	12	12	0	0	0	0	0	0	2	0
October	9.4	NW.	36	SE.	0	4	10	7	4	9	9	8	11	0	10	9	12	11	8	1	1	0	0	0	1	0	1
November	14.3	SW.	37	SE.	0	3	1	3	1	18	18	9	7	0	4	10	16	16	13	4	0	0	2	0	12	0	0
December	12.0	SW.	35	NW.	0	1	8	4	4	11	13	9	12	0	2	9	20	11	7	9	1	1	12	0	20	0	0
Year	11.1	SW.	47	W.	2	35	98	34	53	124	150	138	97	3	76	157	133	154	119	53	2	3	58	1	122	33	1

EUREKA, CAL.

[H=64 ft.; h_t=60 ft.; h_r=52 ft.; h_a=69 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.3	SE.	40	SE.	1	0	3	6	22	9	8	3	10	1	3	9	19	21	17	0	0	3	0	0	0	1	0
February	6.1	NW.	48	NW.	1	1	6	6	4	8	10	2	20	1	9	17	3	8	7	0	1	5	0	0	0	1	0
March	6.4	NW.	42	NW.	2	5	8	4	12	8	5	2	16	0	7	15	9	19	16	2	0	7	0	0	3	1	0
April	8.3	SE.	38	NW.	0	1	4	7	17	6	8	3	12	2	1	18	11	23	22	0	2	0	0	0	0	0	0
May	9.8	NW.	46	NW.	1	3	2	2	11	6	6	4	27	1	8	15	8	17	16	0	0	3	0	0	0	1	0
June	8.3	NW.	38	NW.	0	1	3	2	1	8	8	5	31	1	10	18	2	5	5	0	0	8	0	0	0	0	0
July	5.4	NW.	24	NW.	0	8	1	0	0	4	17	5	29	3	2	24	5	0	0	0	0	11	0	0	0	0	0
August	5.8	NW.	30	NW.	0	12	1	2	3	5	8	5	23	3	1	22	8	5	3	0	0	3	0	0	0	0	0
September	4.4	NW.	30	NW.	0	6	2	3	3	8	10	5	19	4	6	17	7	4	3	0	0	7	0	0	0	0	0
October	4.6	NW.	30	NW.	0	8	4	7	5	4	9	4	14	7	7	17	7	8	7	0	0	17	0	0	0	0	0
November	6.4	E.	34	NW.	0	5	3	12	8	7	10	3	12	0	8	9	13	20	15	0	0	1	0	0	3	0	0
December	5.6	SE.	36	SE.	0	4	8	11	15	6	8	6	3	1	5	14	12	16	15	0	2	3	0	0	0	1	0
Year	6.5	NW.	48	NW.	5	49	45	62	101	79	107	47	218	24	67	195	104	146	126	2	5	68	0	0	6	5	0

FORT SMITH, ARK.

[H=481 ft.; h_t=63 ft.; h_r=56 ft.; h_a=72 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	6.3	E.	24	NW.	0	7	4	26	0	5	3	7	7	3	11	5	15	10	8	1	1	1	1	0	13	0	0
February	7.2	E.	30	N.	0	12	7	16	0	3	4	10	5	1	16	7	6	6	4	0	0	2	0	0	9	1	0
March	8.9	E.	36	W.	0	14	5	22	4	3	4	2	7	1	8	5	18	13	9	2	0	1	0	0	9	0	0
April	8.5	E.	36	SE.	0	2	1	23	11	13	5	2	3	0	11	9	10	5	2	0	0	0	0	0	0	4	0
May	7.4	E.	42	N.	2	5	1	27	5	17	0	2	1	4	10	10	11	13	9	0	1	0	0	2	0	13	0
June	5.6	E.	24	SW.	0	6	4	28	2	2	3	5	8	2	14	11	5	5	4	0	0	0	0	17	0	7	0
July	5.6	E.	18	NE.	0	3	10	26	6	5	9	2	0	1	16	11	4	7	4	0	0	0	0	25	0	3	0
August	5.9	E.	24	S.	0	7	11	25	5	8	1	2	3	0	22	5	4	7	4	0	0	0	0	24	0	8	0
September	6.4	E.	22	SE.	0	8	10	25	4	6	2	2	1	2	18	5	7	6	4	0	0	0	0	16	0	3	0
October	6.0	E.	36	SW.	0	10	6	23	6	0	5	6	3	3	13	8	10	8	6	0	0	1	0	1	0	2	0
November	8.2	E.	40	W.	1	10	4	21	6	3	6	6	4	0	11	4	15	6	4	0	1	1	0	0	5	3	0
December	6.1	E.	32	E.	0	5	7	25	1	6	9	2	4	3	18	6	7	4	2	0	0	0	0	0	13	0	0
Year	6.8	E.	42	N.	3	89	70	287	50	71	51	48	46	20	168	86	112	90	60	3	3	6	1	85	49	44	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

FRESNO, CAL.

[λ = 36° 43′ N.; φ = 119° 49′ W.; gravity corr., — 0.02.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.72	29.99	29.39	44.1	56.0	59.8	41.5	50.6	67	28	41	44	90	67	.268	.304	2.89	1.05	3.7	6.1	5.4
February	29.79	29.96	29.53	43.3	63.6	66.6	40.3	53.4	80	31	39	40	86	43	.243	.246	.06	.06	1.1	2.2	1.8
March	29.67	29.91	29.24	48.2	64.5	66.8	45.8	56.3	83	32	44	45	87	50	.301	.308	1.21	.50	3.7	4.9	5.4
April	29.66	29.90	29.44	44.7	64.0	66.3	43.1	54.7	76	34	40	37	84	38	.250	.228	2.82	1.68	3.7	3.9	4.1
May	29.62	29.82	29.33	51.3	75.2	77.5	50.3	63.9	102	41	44	39	76	29	.290	.247	.02	.02	2.3	3.4	2.8
June	29.49	29.66	29.24	62.3	94.0	95.4	61.8	78.6	106	47	47	42	59	18	.326	.269	.00	.00	1.0	1.8	1.1
July	29.49	29.70	29.30	70.4	99.2	100.9	69.1	85.0	111	56	52	49	55	20	.397	.360	.07	.06	1.7	1.2	1.2
August	29.55	29.78	29.42	65.0	94.9	95.9	65.8	79.8	102	57	51	45	61	19	.375	.302	.15	.15	1.7	1.5	1.7
September	29.50	29.78	29.18	59.2	86.2	87.7	57.4	72.6	101	50	48	44	67	25	.342	.293	.06	.06	1.3	1.8	1.8
October	29.56	29.88	29.28	55.1	79.1	81.1	52.3	66.7	94	43	44	44	67	32	.291	.290	1.28	1.28	1.0	2.9	2.5
November	29.71	30.10	29.34	45.7	59.4	62.8	43.5	53.2	76	29	42	46	86	62	.270	.313	1.46	1.01	2.4	4.5	4.2
December	29.79	30.04	29.34	43.3	55.2	58.4	40.2	49.3	69	30	39	44	86	69	.239	.293	1.00	.56	2.1	4.2	5.3
Year	29.63	30.10	29.18	52.7	74.3	76.6	50.8	63.7	111	28	44	43	75	39	.299	.288	11.02	1.68	2.1	3.2	3.1

GALVESTON, TEX.

[λ = 29° 18′ N.; φ = 94° 50′ W.; gravity corr., — 0.04.]

January	30.14	30.68	29.61	50.8	54.1	57.4	48.9	53.2	68	32	44	49	79	85	.308	.365	1.91	0.84	5.5	5.9	5.6
February	30.04	30.42	29.54	54.3	57.6	62.1	52.1	57.1	71	39	49	49	84	74	.367	.357	2.70	1.19	5.2	4.6	4.3
March	30.03	30.45	29.65	59.1	61.2	65.5	56.3	60.9	72	45	55	54	86	80	.449	.442	3.59	2.06	6.6	6.3	5.4
April	30.06	30.45	29.80	67.4	68.4	72.3	65.6	69.0	79	48	63	64	85	88	.586	.626	1.49	.94	7.7	8.2	6.5
May	29.96	30.15	29.74	76.6	78.2	81.6	75.2	78.4	86	65	71	69	82	74	.750	.712	.82	.78	6.8	4.9	3.3
June	29.95	30.23	29.73	80.0	82.8	86.5	78.1	82.3	90	73	72	72	78	70	.800	.785	.34	.30	4.1	4.0	1.8
July	30.05	30.21	29.85	81.9	83.9	87.8	79.5	83.6	93	73	74	74	78	72	.841	.828	3.90	1.86	4.5	3.9	3.2
August	30.04	30.19	29.89	81.1	84.2	88.6	79.3	84.0	94	70	74	73	80	70	.845	.815	.35	.13	4.3	4.4	2.8
September	29.96	30.11	29.84	78.2	81.1	84.7	75.6	80.2	90	61	72	70	81	70	.797	.744	2.20	1.24	5.3	5.2	3.7
October	30.01	30.19	29.77	68.9	72.8	76.6	66.3	71.4	87	58	64	65	84	77	.606	.624	2.14	.75	7.1	5.5	4.8
November	30.09	30.39	29.82	63.9	65.7	70.0	60.5	65.2	79	35	60	59	88	81	.568	.546	1.94	.84	6.7	5.2	4.9
December	30.20	30.54	29.76	53.4	57.9	62.1	51.3	56.7	73	34	47	50	79	77	.342	.381	2.33	.83	5.1	3.7	3.9
Year	30.04	30.68	29.54	68.0	70.7	74.6	65.7	70.2	94	32	62	62	82	76	.605	.602	23.71	2.06	5.7	5.2	4.2

GRAND HAVEN, MICH.

[λ = 43° 5′ N.; φ = 86° 13′ W.; gravity corr., 0.00.]

January	29.42	29.87	28.97	24.1	27.0	30.8	21.1	26.0	42	1	22	24	92	88	.123	.133	1.73	0.49	8.8	8.2	8.7
February	29.22	29.86	28.73	23.3	25.3	31.8	18.4	25.1	47	—6	20	22	87	86	.114	.121	2.22	.51	6.9	6.3	7.1
March	29.36	29.85	28.67	24.6	29.6	35.4	21.6	28.5	63	5	20	25	81	81	.109	.139	1.64	.57	6.5	6.8	6.7
April	29.34	29.86	28.88	45.0	50.8	58.6	40.0	49.3	78	14	41	42	82	75	.281	.291	3.47	1.06	5.8	5.6	5.9
May	29.26	29.57	28.90	58.6	63.7	71.7	52.0	61.8	85	42	51	51	77	66	.383	.385	1.95	.56	4.6	4.4	4.5
June	29.30	29.58	28.95	64.6	68.7	75.4	57.3	66.4	85	42	56	55	76	64	.462	.443	1.00	.48	4.1	3.9	3.5
July	29.54	29.53	29.10	66.1	69.6	76.0	59.5	67.8	84	47	59	58	79	68	.511	.488	4.12	1.96	5.0	4.4	4.4
August	29.34	29.77	28.96	66.3	70.7	77.0	60.4	68.7	87	44	61	60	82	69	.552	.539	1.97	.92	4.4	4.2	4.1
September	29.33	29.69	28.71	54.2	59.4	65.5	49.6	57.6	84	32	50	51	86	74	.373	.389	5.95	1.62	5.7	6.6	6.3
October	29.36	29.72	28.88	42.2	47.7	55.5	38.2	46.8	75	27	36	38	80	70	.223	.244	1.05	.57	5.4	4.6	5.1
November	29.38	29.86	28.66	36.6	38.1	45.2	31.7	38.4	65	14	32	33	82	83	.193	.205	3.78	1.42	9.0	8.0	8.6
December	29.45	29.96	28.90	28.8	32.3	36.5	26.0	31.2	51	9	27	29	92	88	.149	.164	1.30	.35	7.6	7.1	8.1
Year	29.34	29.96	28.66	44.6	48.6	55.0	39.6	47.3	87	—6	40	41	83	76	.289	.295	30.18	1.96	6.2	5.8	6.1

GREEN BAY, WIS.

[λ = 44° 31′ N.; φ = 88° W.; gravity corr., 0.00.]

January	29.46	29.86	28.80	16.6	22.1	25.7	12.4	19.0	41	—15	11	16	76	75	.080	.097	0.98	0.35	7.7	6.5	7.8
February	29.26	29.91	28.69	16.2	23.3	28.3	14.1	21.2	59	—11	10	16	74	71	.077	.096	.26	.12	6.5	4.9	6.2
March	29.38	29.94	28.56	20.0	28.9	32.8	17.6	25.2	58	— 4	13	21	71	71	.083	.117	1.19	.52	7.0	6.4	6.8
April	29.35	29.88	28.79	42.1	49.8	57.1	38.3	47.7	84	11	36	40	78	70	.232	.272	5.48	2.54	6.3	7.4	7.2
May	29.25	29.62	28.79	58.5	66.4	72.9	52.9	62.9	88	42	49	49	72	56	.357	.362	3.60	1.67	6.0	7.1	6.5
June	29.32	29.62	29.01	63.0	72.1	78.8	56.0	67.4	89	42	53	54	72	56	.415	.439	3.35	1.82	5.4	5.9	6.2
July	29.35	29.58	29.06	65.1	73.6	79.6	59.8	69.7	91	45	56	57	74	59	.467	.482	2.45	1.13	6.5	6.4	6.6
August	29.34	29.74	29.00	65.9	73.8	79.9	59.9	69.9	95	46	58	58	82	59	.502	.500	2.96	1.40	4.4	4.3	4.4
September	29.37	29.67	28.93	50.6	57.5	64.9	48.0	56.4	84	34	46	48	87	72	.331	.350	5.21	1.34	5.9	6.0	6.2
October	29.39	29.76	28.76	38.3	45.7	54.1	36.1	45.1	71	21	34	37	85	72	.209	.236	3.13	2.45	4.1	3.4	4.5
November	29.40	29.93	28.70	27.1	30.9	35.3	23.5	29.4	61	— 1	24	26	85	80	.140	.156	3.60	1.13	6.2	6.3	6.4
December	29.47	29.99	28.93	22.5	27.5	31.9	19.7	25.8	47	— 4	19	22	84	80	.108	.125	.88	.28	6.7	6.2	6.3
Year	29.36	29.99	28.56	40.3	47.6	53.4	36.5	45.0	95	—15	34	37	78	68	.251	.269	33.09	2.54	6.1	5.9	6.3

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

FRESNO, CAL.

[H = 332 ft.; h_t = 67 ft.; h_r = 54 ft.; h_a = 70 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	5.0	E.	30	NW.	0	3	5	26	5	1	2	10	10	0	10	6	15	11	9	0	0	2	0	0	6	0	0
February	4.6	NW.	26	NW.	0	6	6	8	2	1	2	15	16	2	25	3	1	1	1	0	0	0	0	0	1	0	0
March	5.4	W.	38	SE.	0	5	7	7	2	1	5	18	17	0	11	9	11	7	4	1	0	3	0	0	1	1	0
April	7.0	NW.	24	NW.	0	1	1	6	6	3	2	15	25	1	15	8	7	7	5	0	0	0	0	0	0	0	0
May	7.7	W.	26	NW.	0	1	1	1	0	1	3	28	26	1	21	8	2	1	0	0	0	0	0	4	0	0	0
June	7.4	NW.	24	SW.	0	1	1	0	1	1	5	11	38	2	27	3	0	0	0	0	0	0	0	24	0	0	0
July	7.0	NW.	24	E.	0	0	1	2	1	1	1	13	43	0	26	4	1	2	1	0	0	0	0	29	0	1	0
August	6.6	NW.	20	NW.	0	0	1	1	0	0	0	8	51	1	23	6	2	1	1	0	0	0	0	26	0	1	0
September	5.2	NW.	19	NW.	0	2	2	3	2	0	1	11	39	0	25	4	1	1	1	0	0	0	0	11	0	2	0
October	4.3	NW.	20	NW.	0	4	2	7	7	2	2	6	31	1	21	6	4	1	1	0	0	1	0	7	0	0	0
November	4.2	NW.	18	NW.	0	0	6	11	3	1	4	3	28	4	18	5	7	6	4	0	0	7	0	0	2	0	0
December	3.8	SE.	22	SE.	0	3	2	3	21	1	1	12	17	2	13	7	11	10	4	0	0	16	0	0	1	0	0
Year	5.7	NW.	38	SE.	0	26	35	75	50	13	28	150	341	14	235	69	62	48	31	1	0	29	0	101	11	5	0

GALVESTON, TEX.

[H = 42 ft.; h_t = 85 ft.; h_r = 80 ft.; h_a = 96 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	11.0	E.	35	NE.	0	10	3	14	6	8	10	4	7	0	12	5	14	8	5	0	0	5	0	0	1	1	0
February	12.0	SW.	37	NW.	0	5	8	4	8	5	13	8	7	0	15	4	10	11	10	0	1	3	0	0	0	3	0
March	12.2	SE.	44	NW.	1	3	3	3	27	17	1	1	7	0	9	12	10	9	7	0	0	6	0	0	0	3	0
April	12.6	SE.	38	N.	0	2	2	6	30	18	1	1	0	0	2	15	13	8	3	0	0	2	0	0	0	2	0
May	12.1	S.	33	W.	0	0	0	0	30	29	3	0	0	0	16	14	1	2	2	0	0	0	0	0	0	2	0
June	10.2	S.	27	NE.	0	0	3	6	7	21	20	1	2	0	25	5	0	5	1	0	0	0	0	0	0	5	0
July	9.3	S.	26	S.	0	0	1	1	9	26	19	2	4	0	16	13	2	13	11	0	0	0	0	1	0	6	0
August	8.8	S.	44	NE.	1	4	5	2	11	17	15	6	2	0	23	4	4	6	3	0	0	0	0	4	0	10	0
September	10.2	SE.	34	NE.	0	5	9	1	18	18	6	3	0	0	15	10	5	10	9	0	0	0	0	0	0	6	0
October	9.1	NE.	38	NW.	0	12	16	9	9	6	4	2	4	0	12	9	10	11	8	0	0	0	0	0	0	4	0
November	13.2	SE.	39	NE.	0	6	13	7	20	8	6	0	0	0	10	12	8	12	7	0	0	1	0	0	0	4	0
December	10.5	SE.	32	N.	0	10	16	6	11	5	2	10	2	0	19	3	9	9	6	0	0	0	0	0	0	1	0
Year	10.9	SE.	44	NW.	2	57	79	59	186	178	100	38	35	0	174	106	86	104	72	0	1	17	0	5	1	47	0

GRAND HAVEN, MICH.

[H = 628 ft.; h_t = 55 ft.; h_r = 48 ft.; h_a = 64 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	11.1	NW.	36	NW.	0	9	4	12	9	5	7	3	13	0	1	7	23	14	10	12	0	3	13	0	28	0	0
February	12.5	NW.	52	NW.	2	9	8	5	5	2	7	7	14	1	4	9	16	14	11	12	0	4	13	0	25	0	0
March	11.2	NE.	35	SW.	0	8	12	7	11	4	6	6	8	0	5	9	17	16	11	9	0	1	13	0	27	1	1
April	13.0	SW.	36	NW.	0	5	2	5	14	7	13	4	10	0	8	11	11	14	13	1	0	3	1	0	8	3	0
May	10.5	SW.	36	SW.	0	3	1	8	13	6	18	7	6	0	15	10	6	11	10	0	0	1	0	0	0	7	2
June	7.6	W.	26	NW.	0	5	3	9	7	4	8	13	11	0	15	14	1	9	4	0	0	0	0	0	0	2	0
July	7.7	SW.	47	NW.	1	7	6	3	5	7	12	9	13	0	14	9	8	11	5	0	0	1	0	0	0	2	0
August	8.3	SW.	48	NW.	3	11	4	4	6	5	15	5	11	1	12	16	3	7	5	0	0	0	0	0	0	5	0
September	9.1	NW.	38	NW.	0	11	9	3	10	5	11	2	9	0	6	14	10	19	17	0	0	1	0	0	0	2	0
October	9.6	NW.	42	SW.	1	14	7	10	10	1	7	5	8	0	13	6	12	6	5	2	0	1	0	0	7	1	0
November	13.8	NW.	41	NW.	1	6	6	8	7	3	11	6	13	0	2	4	24	21	15	8	0	1	5	0	15	0	0
December	9.8	SW.	36	SW.	0	6	8	9	15	3	12	4	5	0	4	4	23	15	11	11	0	3	8	0	23	0	0
Year	10.4	SW.	52	NW.	8	94	70	83	112	52	127	71	121	2	99	113	154	157	117	55	0	19	53	0	133	23	3

GREEN BAY, WIS.

[H = 617 ft.; h_t = 49 ft.; h_r = 41 ft.; h_a = 57 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	8.3	S.	40	W.	1	15	0	0	6	16	9	10	5	1	4	8	19	10	7	7	0	0	22	0	30	0	0
February	9.6	W.	36	W.	0	12	2	0	5	12	10	13	4	0	7	11	11	5	2	4	0	0	18	0	26	0	0
March	10.2	S.	34	S.	0	11	3	4	5	20	3	4	12	0	7	10	14	10	7	6	0	0	17	0	27	1	0
April	9.8	E.	36	SW.	0	9	4	11	9	8	7	6	6	0	4	10	16	14	13	1	0	2	1	0	9	7	0
May	9.5	SW.	45	SW.	1	2	7	5	11	11	14	4	8	0	5	16	10	12	10	0	1	0	0	0	0	5	0
June	6.6	S.	34	NW.	0	5	6	10	8	12	8	4	6	1	6	16	8	10	8	0	0	0	0	0	0	5	0
July	6.4	S.	28	S.	0	8	4	9	2	16	10	2	13	0	4	15	12	8	4	0	0	1	0	2	0	3	0
August	7.5	S.	38	SW.	0	6	2	8	5	15	13	5	8	0	13	14	4	11	9	0	1	0	0	4	0	7	0
September	8.8	S.	26	NW.	0	5	2	6	6	16	4	8	12	1	7	11	12	15	11	0	0	0	0	0	0	2	0
October	7.5	S.	30	SE.	0	8	1	2	9	14	9	9	8	2	12	12	7	7	5	2	0	2	0	0	11	2	0
November	9.5	W.	36	S.	0	5	4	4	7	6	10	16	8	0	5	13	12	15	10	7	0	1	11	0	23	0	0
December	6.8	S.	24	NW.	0	7	0	1	4	20	15	7	8	0	5	14	12	10	6	10	0	1	16	0	28	0	1
Year	8.4	S.	45	SW.	2	91	35	60	77	166	112	88	98	5	79	150	137	127	92	37	2	7	85	6	154	32	1

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

HANNIBAL, MO.

[λ = 39° 41′ N.; φ = 91° 20′ W.; gravity corr., −0.02.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.57	30.16	29.10	26.8	33.2	38.6	23.5	31.0	58	1	21	25	78	70	.121	.142	1.54	0.95	6.0	5.4	5.7
February	29.42	29.97	28.92	27.3	34.7	39.2	25.1	32.2	68	1	21	25	78	70	.121	.142	1.74	.87	6.6	4.3	5.4
March	29.48	29.94	28.77	31.0	41.6	45.9	28.8	37.4	77	12	24	29	76	62	.136	.172	.92	.28	5.2	4.7	5.5
April	29.41	29.83	29.04	54.6	65.3	71.6	51.5	61.6	87	26	45	45	70	51	.331	.334	2.83	.83	4.9	4.7	4.1
May	29.34	29.62	28.99	65.2	73.5	80.2	60.6	70.4	88	47	58	58	78	61	.489	.494	7.14	2.79	5.5	4.0	4.7
June	29.41	29.76	29.15	67.3	75.1	80.6	62.4	71.5	90	51	61	62	81	65	.552	.566	2.40	1.04	5.0	3.9	4.7
July	29.45	29.63	29.21	71.3	80.2	85.6	66.6	76.1	96	54	64	67	80	65	.622	.672	9.44	5.45	4.6	3.9	4.1
August	29.47	29.83	29.14	69.3	79.0	85.5	65.5	75.5	100	49	63	65	80	63	.586	.641	1.58	.58	2.8	2.4	3.1
September	29.47	29.84	29.13	57.5	65.0	72.4	54.1	63.2	94	36	52	54	83	70	.410	.449	3.54	.80	5.7	6.2	5.7
October	29.47	29.79	28.90	44.9	55.9	63.5	42.4	53.0	80	30	40	42	83	61	.262	.285	1.72	.59	3.5	3.0	3.2
November	29.56	30.20	29.01	37.2	42.2	49.8	31.3	40.6	76	6	31	32	78	69	.197	.212	1.73	1.09	6.2	4.4	5.8
December	29.60	30.17	29.16	32.7	39.4	44.9	29.8	37.4	69	12	28	30	81	71	.154	.173	.65	.47	6.3	4.9	6.0
Year	29.47	30.20	28.77	48.8	57.1	63.2	45.1	54.2	100	1	42	44	79	65	.332	.357	35.23	5.45	5.2	4.3	4.8

HARRISBURG, PA.

[λ = 40° 16′ N.; φ = 76° 52′ W.; gravity corr., −0.01.]

January	29.79	30.13	29.31	26.8	31.1	34.3	24.3	29.3	53	6	23	25	84	76	.126	.136	1.00	0.81	6.6	5.8	6.2
February	29.51	30.13	28.28	27.6	32.5	36.7	24.9	30.8	54	−1	22	26	81	77	.130	.150	5.48	2.35	6.2	6.2	6.2
March	29.62	30.20	28.80	28.6	35.9	40.3	25.3	32.8	66	6	24	28	83	74	.137	.162	3.85	.90	6.1	5.2	5.6
April	29.73	30.10	29.32	49.8	57.0	63.1	45.6	54.4	92	24	43	46	77	69	.294	.337	1.19	.29	6.0	5.4	5.7
May	29.63	30.00	29.31	62.7	68.8	74.9	57.1	66.0	93	45	54	58	77	71	.429	.490	2.99	.96	5.2	6.2	5.7
June	29.59	29.88	29.19	65.9	71.3	77.5	60.4	69.0	89	50	59	63	80	76	.516	.578	3.82	.92	6.0	5.6	5.5
July	29.63	29.96	29.34	72.3	76.2	82.5	66.5	74.5	91	58	65	67	80	75	.634	.675	6.32	1.85	4.9	5.9	6.0
August	29.65	29.94	29.42	69.8	75.4	82.8	64.6	73.7	95	50	62	63	77	67	.579	.611	1.45	.48	5.2	4.0	4.6
September	29.65	29.93	29.29	60.6	67.5	75.5	56.4	66.0	91	42	54	56	80	68	.440	.468	1.81	.48	5.5	4.4	4.7
October	29.67	30.11	29.29	47.3	51.8	57.9	43.9	50.9	71	32	41	42	79	70	.260	.274	3.45	2.32	5.3	4.2	5.6
November	29.80	30.33	29.20	44.2	48.7	55.8	39.5	47.6	72	26	39	40	83	72	.259	.258	3.30	1.68	7.2	5.0	6.8
December	29.80	30.48	29.32	29.4	33.6	39.4	26.6	33.0	58	9	24	27	78	76	.130	.151	.40	.24	6.3	4.6	5.9
Year	29.67	30.48	28.28	48.8	54.2	60.1	44.6	52.3	95	−1	42	45	80	73	.328	.358	35.06	2.35	5.9	5.2	5.7

HATTERAS, N. C.

[λ = 35° 15′ N.; φ = 75° 40′ W.; gravity corr., −0.03.]

January	30.18	30.54	29.70	40.2	42.0	46.3	37.3	41.8	60	21	36	38	87	86	.225	.238	4.05	2.08	5.2	5.0	4.9
February	29.97	30.54	29.09	46.2	48.1	52.3	41.0	46.6	66	15	40	41	79	77	.271	.277	5.96	1.94	6.3	4.3	5.7
March	30.06	30.61	29.19	47.2	50.2	54.6	43.1	48.8	67	33	40	44	75	79	.266	.304	3.52	1.26	4.2	3.9	4.3
April	30.17	30.51	29.79	58.4	58.1	64.2	54.0	59.1	73	40	53	52	82	81	.426	.409	1.71	1.08	3.7	3.7	3.8
May	30.07	30.30	29.83	70.6	69.2	76.2	65.5	70.8	86	51	64	65	81	86	.616	.626	1.50	.91	5.0	5.0	5.1
June	30.02	30.22	29.68	75.6	74.4	79.2	71.2	75.2	83	66	69	69	80	84	.715	.721	2.34	.84	6.3	5.8	5.4
July	30.12	30.37	29.86	78.5	77.6	83.2	74.5	78.8	91	66	74	74	87	88	.845	.837	6.25	1.39	5.3	5.9	5.2
August	30.06	30.25	29.89	79.0	77.8	84.3	74.5	79.4	90	66	72	71	79	81	.791	.774	1.44	.68	4.1	3.5	3.5
September	30.05	30.36	29.77	73.3	72.8	78.6	69.1	73.8	85	57	67	67	81	82	.676	.675	3.75	1.24	4.3	5.0	4.3
October	30.04	30.36	29.58	62.2	62.1	67.6	58.4	63.0	76	50	57	57	84	84	.477	.472	5.28	3.05	5.4	5.5	5.4
November	30.24	30.56	29.80	59.6	60.9	66.5	55.9	61.2	75	40	56	56	89	86	.463	.475	3.86	2.22	6.0	4.3	5.5
December	30.19	30.75	29.37	44.2	46.1	51.2	41.0	46.1	64	27	40	42	87	86	.263	.278	5.59	2.13	4.5	4.4	5.0
Year	30.10	30.75	29.09	61.2	61.6	67.0	57.1	62.0	91	15	56	56	83	83	.503	.507	45.25	3.05	5.0	4.7	4.8

HAVRE, MONT.

[λ = 48° 34′ N.; φ = 109° 40′ W.; gravity corr., + 0.01.]

January	27.35	27.96	26.74	6.1	8.9	16.0	−1.6	7.2	53	−31	2	5	86	85	.064	.070	1.38	0.49	5.9	6.3	6.1
February	27.28	27.74	26.77	23.7	28.9	36.9	15.1	26.0	58	−12	18	22	81	76	.107	.123	.52	.35	4.0	6.9	5.8
March	27.33	27.88	26.63	17.8	30.3	34.4	13.1	23.8	64	−32	14	21	80	71	.098	.124	.67	.28	4.9	5.8	4.7
April	27.25	27.82	26.77	29.5	48.7	51.4	27.5	39.4	74	6	26	28	86	50	.144	.156	1.09	.47	4.6	5.6	5.0
May	27.24	27.46	26.89	43.2	57.3	60.1	40.0	50.0	79	30	38	36	83	50	.232	.220	4.27	1.23	5.8	6.2	6.0
June	27.31	27.60	27.00	53.3	75.0	78.1	49.9	64.0	79	42	47	45	79	37	.322	.303	3.02	1.31	2.9	3.9	3.4
July	27.38	27.69	27.13	58.0	80.9	83.3	55.4	69.4	98	40	49	46	74	32	.357	.319	.66	.48	3.5	3.5	3.5
August	27.38	27.62	27.10	52.9	76.9	80.3	50.9	65.6	92	38	44	43	72	33	.287	.284	.65	.61	4.2	4.4	3.5
September	27.39	27.68	26.96	42.7	60.0	64.8	40.1	52.4	88	28	38	40	85	53	.233	.253	1.63	1.09	5.2	5.8	5.1
October	27.38	27.78	26.97	33.0	50.7	58.7	30.6	44.6	85	17	30	35	87	58	.164	.209	.68	.37	3.5	3.9	3.7
November	27.43	27.94	26.85	24.5	41.5	11.0	−3.4	3.8	53	−33	0	2	90	90	.057	.060	1.80	.42	6.5	5.2	6.0
December	27.29	27.81	26.80	29.9	31.3	38.6	21.4	30.0	59	−22	24	24	80	77	.138	.136	.11	.09	4.8	5.4	5.0
Year	27.33	27.96	26.63	34.6	49.2	51.1	28.2	39.7	98	−33	28	29	82	59	.184	.188	16.48	1.31	4.6	5.2	4.8

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

HANNIBAL, MO.

[H = 534 ft.; h^t = 75 ft.; h^r = 68 ft.; h^a = 107 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	8.4	E.	37	S.	0	7	5	12	5	7	11	7	8	0	10	9	12	5	3	2	0	1	7	0	25	0	0
February	10.5	NW.	36	NW.	0	10	6	1	4	2	12	6	17	0	13	4	12	6	6	4	0	0	6	0	23	0	0
March	10.2	NW.	42	SW.	1	9	8	6	6	10	7	5	11	0	8	12	11	12	6	5	0	0	5	0	21	1	0
April	12.0	S.	49	SW.	2	1	7	4	11	18	11	2	6	0	15	7	8	12	10	0	0	0	0	0	3	6	0
May	10.5	S.	46	S.	3	1	7	3	7	20	15	3	6	0	11	13	7	12	10	0	2	0	0	0	0	8	0
June	7.3	SW.	44	NE.	1	5	10	2	8	9	14	6	6	0	12	10	8	12	7	0	0	1	0	0	0	6	0
July	7.7	SW.	26	NE.	0	7	6	4	2	16	16	8	3	0	16	11	4	14	12	0	0	0	0	9	0	12	0
August	7.2	SW.	34	NW.	0	5	10	4	8	9	18	2	5	1	16	13	2	5	4	0	0	0	0	9	0	7	0
September	8.5	N.	34	N.	0	14	8	5	7	7	5	2	11	1	10	8	12	15	12	0	0	2	0	2	0	6	0
October	8.3	SW.	43	SW.	2	8	5	7	10	5	12	10	5	0	18	8	5	7	6	0	0	1	0	0	3	1	0
November	11.7	SW.	42	S.	1	4	4	4	4	10	15	7	12	0	9	8	13	8	7	1	0	2	5	0	16	0	0
December	8.8	SW.	28	SW.	0	6	7	1	11	3	24	4	5	1	8	11	12	5	2	1	0	0	1	0	16	0	0
Year	9.3	SW.	49	SW.	10	77	83	53	83	116	160	62	95	3	146	114	106	113	85	13	2	7	24	20	107	47	0

HARRISBURG, PA.

[H = 377 ft.; h_t = 94 ft.; h_r = 87 ft.; h_a = 102 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	8.0	W.	37	NW.	0	7	1	16	4	6	1	19	7	1	6	12	13	5	3	1	0	5	9	0	25	0	0
February	11.1	W.	48	W.	5	8	0	17	1	6	3	20	3	0	5	12	12	11	10	6	0	3	9	0	22	0	0
March	11.0	W.	37	W.	0	3	3	12	2	4	0	29	9	0	10	8	13	10	8	8	0	2	7	0	24	0	0
April	8.2	E.	42	NW.	1	2	2	21	3	7	7	9	9	0	10	8	12	9	7	0	0	1	0	3	6	2	0
May	7.0	W.	35	W.	0	2	2	14	5	11	3	21	4	0	11	10	10	12	11	0	0	2	0	4	0	6	0
June	5.4	W.	39	W.	0	3	5	13	0	12	1	20	6	0	9	11	10	14	13	0	0	0	0	0	0	4	0
July	5.9	W.	40	N.	1	9	2	5	1	17	4	23	1	0	8	9	14	15	13	0	0	0	0	1	0	7	0
August	5.2	W.	30	W.	0	7	6	6	6	8	4	16	9	0	13	9	9	11	8	0	0	0	0	8	0	5	0
September	6.8	E.	72	S.	2	11	4	14	6	3	3	11	8	0	14	4	12	10	8	0	0	0	0	1	0	2	0
October	6.6	NW.	37	NW.	0	8	7	12	5	2	1	13	14	0	10	7	14	10	7	0	0	0	0	0	0	0	0
November	7.3	W.	35	W.	0	6	5	11	5	4	7	11	11	0	5	9	16	9	7	1	0	1	0	0	5	1	0
December	7.2	W.	38	W.	0	4	5	11	3	0	11	16	11	1	9	8	14	5	5	2	0	0	7	0	20	0	0
Year	7.5	W.	72	S.	9	70	42	152	41	80	45	208	92	2	110	107	149	121	100	18	0	14	32	17	102	27	0

HATTERAS, N. C.

[H = 11 ft.; h_t = 17 ft.; h_r = 2 ft.; h_a = 36 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	15.2	N.	48	NW.	2	29	9	2	2	1	4	8	7	0	12	11	8	7	3	0	0	0	3	0	4	0	0
February	18.2	W.	60	N.	6	8	4	1	4	4	12	15	10	0	9	8	12	12	11	0	0	3	1	0	4	1	0
March	17.5	NW.	54	N.	7	7	9	3	3	11	7	8	14	0	11	15	5	9	8	0	1	1	0	0	0	1	0
April	15.3	SW.	40	N.	1	10	11	5	2	2	22	2	6	0	17	8	5	8	5	0	0	1	0	0	0	1	0
May	11.7	SW.	40	N.	1	5	9	4	7	6	22	5	4	0	8	18	5	9	7	0	0	0	0	0	0	2	0
June	10.8	SW.	36	W.	0	4	14	4	6	2	21	5	4	0	7	13	10	15	11	0	0	0	0	0	0	2	0
July	12.6	SW.	37	N.	0	0	8	1	3	11	36	3	0	0	10	14	7	13	11	0	0	0	0	1	0	4	0
August	11.1	SW.	33	NE.	0	5	17	4	2	3	20	5	6	0	16	12	3	4	4	0	0	0	0	0	0	3	0
September	11.6	NE.	51	N.	1	7	24	7	2	5	9	2	4	0	16	7	7	7	7	0	0	0	0	0	0	3	0
October	14.6	NE.	67	N.	3	8	25	3	2	5	6	6	7	0	10	12	9	12	11	0	0	0	0	0	0	0	0
November	12.3	NE.	44	NW.	1	10	18	0	3	10	8	8	3	0	7	13	10	10	7	0	0	1	0	0	0	0	0
December	15.6	N.	61	NW.	6	29	7	2	0	3	4	10	7	0	13	8	10	8	8	0	0	1	0	0	3	0	0
Year	13.9	SW.	67	N.	28	122	155	36	36	63	171	77	72	0	136	139	91	114	93	0	1	7	4	1	11	17	0

HAVRE, MONT.

[H = 2,477 ft.; h_t = 15 ft.; h_r = 2 ft.; h_a = 33 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.1	SW.	46	SW.	1	2	13	11	0	0	11	11	12	2	11	5	15	13	10	12	0	1	21	0	26	0	1
February	12.9	SW.	49	SW.	1	2	4	7	0	0	21	10	14	0	9	10	10	5	2	5	0	0	8	0	25	0	1
March	10.0	SW.	44	NW.	1	3	4	10	3	2	12	10	11	7	12	14	5	6	6	6	0	0	10	0	29	0	3
April	9.4	SW.	33	W.	0	2	8	6	1	5	14	8	12	4	10	14	6	7	4	5	1	1	4	0	19	1	4
May	9.9	SW.	42	NW.	2	3	5	5	4	1	17	14	9	4	4	17	10	15	12	1	1	0	0	0	2	2	2
June	6.5	W.	38	W.	0	12	3	1	3	2	11	14	8	6	17	11	2	13	9	0	0	0	0	2	0	8	0
July	6.3	NW.	42	NE.	1	15	2	9	4	2	10	2	13	5	21	7	3	3	2	0	0	1	0	9	0	3	0
August	8.7	SW.	42	W.	1	5	13	2	0	2	13	10	15	2	15	15	1	5	2	0	0	0	0	1	0	3	9
September	7.6	SW.	28	N.	0	5	9	4	0	2	10	10	14	6	13	5	12	10	6	0	0	1	0	0	2	0	0
October	5.8	SW.	25	NW.	0	2	11	8	3	0	9	13	9	7	19	10	2	3	3	1	0	0	0	0	19	0	5
November	6.9	NW.	35	NW.	0	9	3	7	1	0	4	15	18	3	9	10	11	15	8	13	0	0	26	0	30	0	1
December	9.8	SW.	44	SW.	3	4	8	5	1	2	14	18	6	4	10	14	7	3	1	2	0	3	6	0	24	0	6
Year	8.6	SW.	49	SW.	10	64	83	75	20	18	146	135	141	50	150	132	84	98	65	45	2	7	75	12	176	17	32

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

HELENA, MONT.

[λ = 46° 34′ N.; φ = 112° 4′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.											
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	25.77	26.18	25.33	19.7	26.1	32.5	14.6	23.6	52	—20	10	14	66	62	.084	.098	0.72	0.27	6.4	4.8	5.6
February	25.82	26.20	25.26	31.8	36.8	42.2	27.0	34.6	60	— 3	24	22	71	55	.131	.121	.59	.26	5.6	4.7	5.3
March	25.79	26.20	25.20	23.1	33.1	37.0	20.2	28.6	62	—18	14	19	67	57	.099	.112	1.71	.50	6.3	5.6	5.0
April	25.72	26.22	25.30	31.3	45.7	49.8	29.3	39.6	61	6	21	25	65	47	.115	.137	1.23	.64	6.3	5.3	4.8
May	25.74	25.95	25.46	39.4	51.8	55.4	37.8	46.6	75	29	30	32	68	48	.164	.181	2.25	.91	7.0	6.9	5.6
June	25.85	26.17	25.51	53.5	71.9	75.6	50.9	63.2	88	39	37	37	55	32	.220	.228	.71	.28	2.6	4.7	3.2
July	25.92	26.13	25.74	58.2	77.1	80.4	56.7	68.6	95	44	43	42	60	33	.287	.278	.89	.43	3.7	4.0	3.3
August	25.91	26.11	25.70	53.3	74.4	77.7	52.7	65.2	92	42	39	39	60	31	.238	.247	.86	.32	3.2	4.1	3.6
September	25.90	26.13	25.60	44.1	58.3	62.0	41.7	51.8	85	32	37	37	77	50	.221	.223	2.54	.68	5.0	4.6	4.6
October	25.88	26.18	25.52	39.8	52.1	58.2	37.6	47.9	75	30	29	32	66	48	.160	.181	.24	.18	3.9	4.2	4.1
November	25.81	26.25	25.33	14.0	18.8	26.7	9.9	18.3	63	—22	5	10	65	67	.064	.092	3.29	1.30	6.4	5.6	6.5
December	25.83	26.21	25.40	33.2	37.5	41.8	30.0	35.9	55	6	23	25	64	62	.123	.134	.35	.21	5.0	5.3	6.5
Year	25.83	26.25	25.20	36.8	48.6	53.3	34.0	43.7	95	—22	26	28	65	49	.159	.169	15.38	1.30	5.1	5.0	4.8

HURON, S. DAK.

[λ = 44° 21′ N.; φ = 98° 14′ W.; gravity corr., 0.00.]

January	28.70	29.30	28.11	12.3	18.6	27.5	6.0	16.8	57	—15	8	11	80	71	.067	.080	0.45	0.22	7.0	5.8	6.7
February	28.57	29.12	28.00	16.7	27.7	38.0	11.6	24.8	68	— 9	11	16	77	60	.078	.064	.46	.29	6.9	5.1	5.9
March	28.63	29.15	27.63	15.6	24.5	32.5	9.9	21.2	74	—16	10	16	77	69	.082	.098	1.71	.96	6.7	6.8	6.3
April	28.49	29.03	27.98	39.8	51.7	58.2	36.4	47.3	86	18	33	39	77	64	.205	.255	6.17	1.72	5.2	6.5	6.2
May	28.43	28.77	28.05	55.5	67.9	73.3	49.3	61.3	90	40	48	51	76	56	.345	.391	2.95	1.24	5.6	6.5	5.7
June	28.57	28.90	28.10	59.9	73.0	78.9	53.6	66.2	91	40	53	55	78	56	.411	.448	5.18	3.60	5.4	4.7	4.6
July	28.61	28.87	28.33	62.4	76.7	82.5	57.5	70.0	99	49	55	59	78	55	.447	.503	1.62	.66	5.0	5.7	4.8
August	28.50	28.94	28.21	60.5	78.6	84.3	56.0	70.2	101	40	54	56	79	48	.428	.478	1.17	.56	4.9	4.2	4.1
September	28.62	29.05	28.10	47.5	62.7	71.1	43.2	57.2	95	24	42	46	81	56	.281	.319	2.36	1.72	4.0	5.6	4.7
October	28.63	29.03	28.11	33.7	47.8	58.1	29.5	43.8	82	13	29	34	82	61	.164	.204	1.50	1.30	4.9	4.4	4.8
November	28.71	29.33	28.15	10.7	14.4	21.5	5.6	13.6	45	—17	5	4	77	61	.058	.055	1.97	.58	7.4	6.7	6.7
December	28.67	29.30	28.21	18.4	23.5	29.5	13.1	21.3	44	—11	14	15	81	68	.083	.087	.36	.20	5.5	4.3	6.0
Year	28.60	29.33	27.63	36.1	47.3	54.6	31.0	42.8	101	—17	30	34	79	60	.221	.251	26.10	3.60	5.7	5.5	5.5

IDAHO FALLS, IDAHO.

[λ = 43° 29′ N.; φ = 112° 4′ W.; gravity corr., 0.00.]

January	25.25	25.63	24.88	21.2	29.2	34.2	17.7	26.0	49	—10	18	24	85	81	.112	.135	1.56	0.46	6.1	7.0	6.4
February	25.30	25.67	24.80	22.8	34.2	40.0	19.7	29.8	53	— 4	19	26	86	71	.105	.137	.46	.22	4.8	6.1	4.7
March	25.18	25.55	24.66	24.5	37.1	41.0	21.8	31.4	63	—15	21	27	86	69	.120	.153	3.41	1.87	6.5	7.0	6.6
April	25.11	25.61	24.73	32.0	47.4	51.8	30.0	40.9	66	13	27	29	81	52	.147	.162	1.13	.33	7.4	7.6	7.0
May	25.16	25.36	24.81	38.7	53.6	57.5	35.7	46.6	80	24	33	33	81	50	.191	.195	2.78	1.11	7.5	7.9	7.9
June	25.26	25.55	25.00	50.2	74.5	79.1	45.8	62.4	91	33	42	39	74	30	.270	.244	.65	.50	4.6	5.4	4.4
July	25.29	25.46	25.06	56.2	83.1	86.2	53.0	69.6	95	46	48	41	74	26	.336	.270	1.16	1.01	4.8	4.8	4.1
August	25.30	25.47	25.00	52.4	81.1	84.7	49.3	67.0	94	40	44	39	74	26	.297	.257	1.08	.58	3.9	5.0	3.7
September	25.25	25.56	24.98	43.6	69.1	72.7	40.8	56.8	86	24	36	34	76	30	.214	.211	.30	.11	3.4	4.0	4.0
October	25.27	25.51	24.92	33.0	56.3	63.1	28.7	45.9	77	19	28	32	80	45	.151	.183	.58	.32	2.9	3.7	2.8
November	25.22	25.69	24.74	25.6	29.6	36.1	21.0	28.6	60	—26	21	24	83	78	.138	.142	3.25	1.22	8.0	6.8	7.5
December	25.36	25.68	24.99	21.5	30.3	35.5	19.1	27.3	43	9	19	26	88	82	.102	.137	.82	.27	4.9	7.1	5.5
Year	25.25	25.69	24.66	35.1	52.1	56.8	31.9	44.4	95	—26	30	31	81	53	.182	.186	17.18	1.87	5.4	6.0	5.4

INDIANAPOLIS, IND.

[λ = 39° 46′ N.; φ = 86° 10′ W.; gravity corr., —0.01.]

January	29.28	29.75	28.74	27.2	32.2	35.8	24.3	30.0	55	—5	23	26	83	77	.130	.148	1.60	0.63	7.3	5.5	7.3
February	29.09	29.64	28.57	28.6	33.4	39.6	25.2	32.4	70	—5	24	27	81	76	.138	.154	2.47	.91	5.2	5.7	6.8
March	29.19	29.70	28.64	31.2	38.7	43.9	28.0	36.0	68	12	26	28	80	64	.148	.160	3.08	.74	4.8	5.6	6.1
April	29.21	29.58	28.90	54.6	64.1	70.1	49.8	60.0	87	26	43	47	66	54	.321	.344	1.27	.44	5.6	4.2	5.5
May	29.14	29.43	28.89	65.4	74.4	81.4	60.1	70.8	92	52	55	54	71	52	.443	.440	3.56	1.45	5.2	5.3	5.2
June	29.13	29.41	28.82	67.8	76.3	82.4	62.2	72.3	94	52	59	59	74	57	.515	.506	3.09	1.24	5.4	5.2	5.6
July	29.19	29.40	28.97	71.8	79.2	85.9	65.9	75.9	96	54	63	64	75	61	.597	.609	5.72	2.95	4.7	5.1	5.4
August	29.20	29.55	28.86	69.3	78.1	84.9	64.5	74.7	98	50	62	63	78	60	.574	.594	3.91	1.41	4.0	4.5	4.2
September	29.18	29.55	28.62	58.7	67.0	73.4	55.0	64.2	92	37	53	54	81	65	.417	.435	8.17	2.34	5.6	5.2	5.8
October	29.20	29.48	28.85	44.9	55.9	62.4	42.0	52.2	78	29	38	41	79	58	.243	.265	1.65	.84	3.9	2.9	3.5
November	29.29	29.77	28.76	40.7	45.4	52.6	36.7	44.6	71	10	34	36	76	71	.217	.239	4.19	1.17	7.4	5.2	5.8
December	29.31	29.79	28.85	31.9	38.6	42.3	20.9	36.1	61	12	24	29	74	68	.137	.162	1.13	.62	6.9	5.7	6.4
Year	29.20	29.79	28.57	49.3	56.9	62.9	45.3	54.1	98	—5	42	44	76	64	.323	.338	39.84	2.95	5.5	5.0	5.6

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

HELENA, MONT.

[H = 4,108 ft.; h_1 = 88 ft.; h_2 = 80 ft.; h_3 = 93 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.*	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	6.2	SW.	34	SW.	0	7	0	0	1	2	27	11	13	1	9	10	12	9	6	9	0	0	9	0	25	0	0
February	10.0	SW.	48	SW.	1	4	0	1	2	0	27	19	5	0	11	6	12	6	6	5	0	0	6	0	19	0	0
March	8.8	SW.	40	W.	1	10	3	2	0	2	23	16	6	0	13	7	11	8	8	6	0	0	9	0	24	0	0
April	7.4	SW.	36	SW.	0	8	3	1	0	2	28	15	3	0	11	10	9	5	3	5	0	0	3	0	14	0	0
May	9.1	SW.	36	SW.	0	9	3	3	0	12	21	13	1	0	9	12	10	14	8	2	0	0	0	0	4	0	0
June	8.0	SW.	36	SW.	0	1	2	5	0	2	29	15	6	0	17	12	1	8	4	0	0	0	0	0	0	3	0
July	6.8	SW.	35	SW.	0	19	3	2	0	9	16	7	2	1	19	7	5	7	6	0	0	0	0	7	0	5	0
August	7.0	SW.	45	SW.	1	13	3	4	0	7	22	11	2	0	17	9	5	8	7	0	0	0	0	1	0	3	0
September	6.3	SW.	30	SW.	0	10	5	0	1	1	17	18	8	0	14	4	12	10	9	2	0	0	0	0	1	1	0
October	6.2	SW.	25	SW.	0	3	0	2	0	0	37	19	1	0	17	6	8	3	3	2	0	0	0	0	5	0	0
November	6.8	SW.	42	SW.	1	4	0	2	0	2	20	22	9	1	5	11	14	12	11	10	0	0	16	0	25	0	0
December	5.9	SW.	50	SW.	3	2	0	2	1	4	31	13	8	1	10	6	15	5	4	2	0	0	3	0	17	0	0
Year	7.4	SW.	50	SW.	7	90	22	24	5	43	301	179	64	4	152	100	114	95	75	43	0	0	46	8	194	12	0

HURON, S. DAK.

[H = 1,310 ft.; h_1 = 63 ft.; h_2 = 56 ft.; h_3 = 72 ft.]

Month.	Average hourly velocity.	Prevailing direction (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.*	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	12.6	SE.	48	SE.	2	5	4	4	20	1	3	6	18	1	5	9	17	9	3	8	0	2	17	0	31	0	2
February	13.2	NW.	47	NW.	3	9	1	4	19	1	2	6	16	0	7	11	11	5	3	4	0	0	9	0	29	0	0
March	14.2	NW.	54	SE.	5	10	2	2	17	1	3	6	20	1	5	13	13	14	7	13	0	0	17	0	29	0	0
April	15.5	SE.	51	SE.	6	11	5	2	19	5	3	1	14	0	8	10	12	12	12	0	1	2	0	0	10	8	0
May	15.6	SE.	52	S.	8	7	7	2	21	3	4	4	14	0	4	22	5	9	8	0	0	0	0	1	0	8	0
June	12.4	SE.	56	SW.	3	8	7	2	27	2	1	4	9	0	11	14	5	9	8	0	0	0	0	1	0	7	0
July	10.7	SE.	49	SE.	3	8	13	2	19	10	0	1	9	0	7	21	3	10	7	0	0	1	0	6	0	4	0
August	11.6	SE.	38	S.	0	6	5	5	23	2	1	3	16	1	14	13	4	6	4	0	0	1	0	9	0	7	3
September	13.5	SE.	46	SE.	2	9	3	1	20	4	3	5	15	0	13	9	8	9	8	0	1	1	0	0	2	3	1
October	11.6	NW.	47	SE.	1	16	0	2	18	2	2	4	18	0	13	12	6	5	3	2	0	1	2	0	17	0	0
November	13.3	NW.	56	SE.	3	11	3	4	12	2	2	5	21	0	5	11	14	11	8	11	0	0	28	0	30	0	0
December	11.4	SE.	46	SE.	2	5	1	2	16	16	1	7	14	0	4	17	10	7	3	4	0	4	14	0	31	0	0
Year	13.0	SE.	56	SW.	38	105	51	32	231	49	25	52	184	3	96	162	108	106	74	42	2	12	87	19	180	39	6

IDAHO FALLS, IDAHO.

[H = 4,742 ft.; h_1 = 11 ft.; h_2 = 1 ft.; h_3 = 56 ft.]

Month.	Average hourly velocity.	Prevailing direction (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.*	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	*9.9	S.	†36	S.	0	5	2	1	1	31	2	6	14	0	8	8	15	10	7	5	0	0	11	0	27	0	0
February	8.1	S.	40	SW.	1	10	0	1	1	29	5	5	7	0	14	6	9	6	3	6	0	0	4	0	27	0	0
March	10.0	S.	34	S.	0	7	1	1	3	33	3	4	10	0	6	8	17	14	12	10	0	0	6	0	27	1	0
April	10.0	S.	36	S.	0	10	2	3	3	31	2	0	9	0	5	8	17	10	7	4	0	0	1	0	18	0	0
May	9.4	S.	43	S.	1	7	2	3	5	38	3	3	1	0	3	6	22	17	16	6	0	0	0	0	10	0	0
June	7.9	S.	36	S.	0	10	6	1	2	26	3	3	9	0	16	9	5	5	4	0	1	0	0	1	0	2	0
July	7.2	N.	34	S.	0	18	4	5	3	18	4	3	7	0	13	12	6	5	5	0	0	0	0	7	0	1	1
August	7.4	S.	40	S.	1	8	3	2	5	23	7	3	11	0	16	9	6	6	5	0	1	0	0	5	0	3	0
September	8.0	S.	37	SW.	0	17	3	2	1	18	14	0	5	0	16	7	7	6	5	0	0	0	0	0	6	0	0
October	6.0	NW.	31	S.	0	9	3	1	1	17	8	1	22	0	23	1	7	4	3	0	0	0	0	0	26	0	2
November	9.8	S.	40	S.	1	10	0	1	2	32	7	0	8	0	4	6	20	14	13	6	0	0	5	0	22	0	0
December	6.2	N.	32	S.	0	23	2	2	2	11	3	2	17	0	13	4	14	10	5	7	0	3	4	0	31	0	0
Year	8.3	S.	43	S.	4	134	28	23	29	307	61	30	120	0	137	84	145	107	85	44	2	3	31	13	194	7	3

* For 516 hours. † For 21½ days only.

INDIANAPOLIS, IND.

[H = 823 ft.; h_1 = 154 ft.; h_2 = 146 ft.; h_3 = 164 ft.]

Month.	Average hourly velocity.	Prevailing direction (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.*	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	5.9	SE.	20	NW.	0	3	10	5	11	10	6	10	7	0	5	9	17	15	6	5	0	2	10	0	25	0	0
February	8.0	SW.	32	W.	0	2	8	2	4	10	12	7	13	0	5	10	14	14	11	8	0	0	6	0	21	0	1
March	7.4	NW.	25	SE.	0	5	7	8	8	4	3	5	22	0	6	12	13	14	11	8	0	1	3	0	24	2	0
April	7.4	SE.	27	SW.	0	0	5	4	14	14	7	3	13	0	9	12	9	10	4	0	0	0	0	0	5	3	0
May	5.8	SW.	34	SE.	0	3	5	7	15	8	13	4	6	1	10	11	10	10	9	0	1	0	0	2	0	8	0
June	4.9	SW.	33	NW.	0	9	10	3	6	8	13	1	10	0	7	14	9	9	5	0	0	2	0	3	0	5	0
July	5.5	SW.	24	NW.	0	3	6	4	4	10	22	5	8	0	8	17	6	15	12	0	0	0	0	9	0	7	0
August	4.8	NW.	33	W.	0	10	3	5	5	13	9	2	14	1	14	12	5	8	8	0	0	0	0	10	0	6	0
September	8.9	NE.	35	SW.	0	6	19	1	7	14	7	4	2	0	6	14	10	13	10	0	0	1	0	1	0	5	0
October	8.7	NW.	44	SW.	1	13	11	6	0	7	10	5	10	0	19	6	6	6	4	0	0	1	0	0	4	0	0
November	12.9	S.	44	S.	2	3	3	2	5	19	8	5	15	0	8	12	10	15	12	0	0	0	3	0	10	0	0
December	10.1	S.	36	SW.	0	7	12	2	2	16	12	6	5	0	5	14	12	6	5	1	0	0	7	0	18	0	0
Year	7.5	S.	44	SW.	3	64	99	49	81	133	122	57	125	2	102	143	121	135	97	22	1		29	25	107	36	1

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

JACKSONVILLE, FLA.

[λ=30° 20′ N.; φ=81° 39′ W.; gravity corr., —0.04.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	30.13	30.47	29.71	47.1	53.6	62.7	44.3	53.5	75	24	43	46	85	78	.292	.335	2.53	1.12	4.2	3.6	4.5
February	30.02	30.50	29.37	50.4	58.4	67.6	46.8	57.2	79	27	44	43	79	60	.315	.310	1.66	.53	3.8	2.3	3.6
March	30.07	30.43	29.42	54.3	61.5	71.3	50.4	60.8	88	35	50	49	84	66	.377	.368	2.51	1.20	3.4	2.2	3.5
April	30.15	30.36	29.90	65.1	70.4	80.5	59.6	70.0	92	43	59	56	82	62	.523	.470	.49	.38	2.7	2.7	2.9
May	30.04	30.22	29.88	73.4	76.4	87.7	67.7	77.7	95	53	66	64	80	68	.657	.612	1.24	.63	1.9	4.2	3.5
June	29.99	30.24	29.72	76.8	78.1	87.9	71.9	79.9	97	66	71	69	83	76	.767	.719	9.41	3.07	6.9	7.2	6.0
July	30.10	30.26	29.85	78.4	79.9	90.9	73.6	82.2	100	70	73	72	84	76	.812	.777	4.25	1.43	3.8	6.2	5.4
August	30.03	30.16	29.93	78.6	80.6	92.0	73.5	82.8	96	64	74	71	84	74	.829	.771	6.16	2.38	2.9	4.5	4.1
September	29.97	30.21	29.59	74.9	78.0	87.8	70.6	79.2	96	58	76	69	84	76	.738	.729	2.19	.95	3.5	3.5	4.2
October	29.99	30.16	29.76	64.6	70.1	79.5	61.2	70.4	87	50	59	61	83	75	.518	.555	3.03	1.45	4.7	4.1	4.6
November	30.14	30.37	29.85	63.4	65.9	75.3	59.5	67.4	85	45	60	61	90	86	.544	.558	4.55	1.32	5.9	3.9	5.6
December	30.16	30.55	29.70	48.2	54.1	62.1	45.6	53.8	74	34	44	47	86	79	.300	.339	2.17	.90	6.1	5.4	5.5
Year	30.07	30.55	29.37	64.6	68.9	78.8	60.4	69.6	100	24	59	59	84	73	.556	.545	40.19	3.07	4.1	4.2	4.4

JUPITER, FLA.

[λ=26° 57′ N.; φ=80° 7′ W.; gravity corr., —0.05.]

January	30.12	30.35	29.81	58.4	62.8	69.3	55.3	62.3	80	40	54	55	85	77	.426	.447	5.06	2.27	6.0	4.1	5.6
February	30.07	30.38	29.64	61.0	63.5	69.7	56.5	63.1	83	37	54	54	79	72	.450	.440	2.64	.82	5.9	3.9	5.7
March	30.09	30.38	29.75	65.6	67.1	73.8	61.3	67.6	82	43	59	59	79	76	.518	.516	2.35	.86	4.1	3.4	4.3
April	30.15	30.30	29.95	70.7	71.4	77.7	66.2	72.0	85	51	61	61	74	71	.548	.552	1.59	1.23	3.5	3.0	4.0
May	30.06	30.19	29.91	76.4	75.3	81.9	70.5	76.2	85	61	68	67	76	76	.685	.670	2.83	.78	4.0	4.9	4.8
June	30.02	30.25	29.86	79.0	77.1	84.4	74.0	79.2	88	69	73	73	83	87	.818	.810	8.92	1.63	6.2	7.7	7.2
July	30.12	30.23	29.97	80.9	79.2	85.2	74.7	80.0	91	68	74	73	80	82	.831	.807	8.27	2.22	4.9	5.4	5.7
August	30.06	30.15	29.92	81.8	79.8	88.0	76.3	82.2	93	71	75	74	81	84	.874	.837	4.32	1.63	3.6	4.7	4.5
September	29.95	30.09	29.82	80.2	79.8	85.6	75.5	80.6	90	71	74	73	81	81	.835	.817	5.65	1.64	4.9	6.5	6.3
October	29.98	30.13	29.80	74.4	75.5	81.4	70.5	76.0	88	58	68	67	80	76	.685	.673	5.98	2.06	5.2	4.9	5.9
November	30.11	30.27	29.88	74.7	75.1	79.5	71.5	75.5	84	64	66	67	76	76	.649	.662	2.40	.64	6.4	4.4	6.0
December	30.11	30.41	29.75	62.5	66.2	72.5	59.5	66.0	83	44	57	58	84	76	.483	.496	3.25	1.18	5.9	4.6	5.7
Year	30.07	30.41	29.64	72.1	72.7	79.1	67.6	73.4	93	37	65	65	80	78	.650	.644	53.26	2.27	5.0	4.8	5.5

KANSAS CITY, MO.

[λ=39° 5′ N.; φ=94° 37′ W.; gravity corr., —0.01.]

January	29.12	29.76	28.76	27.9	33.9	38.3	24.6	31.4	55	0	24	29	83	82	.132	.165	0.79	0.49	4.5	6.0	6.3
February	29.01	29.48	28.52	30.4	39.1	44.8	26.9	35.8	76	9	24	29	76	69	.133	.159	.82	.58	5.2	4.2	5.2
March	29.04	29.50	28.34	31.1	42.7	48.2	28.6	38.4	77	12	26	32	81	68	.148	.183	1.09	.47	4.9	4.0	5.3
April	28.94	29.38	28.50	55.0	66.1	71.3	51.4	61.4	87	25	47	51	76	60	.356	.409	3.21	1.30	5.6	5.5	5.5
May	28.90	29.13	28.61	64.0	73.0	78.8	60.5	69.6	89	48	57	60	79	65	.475	.527	5.81	1.90	5.9	6.0	6.0
June	29.00	29.32	28.76	66.4	76.9	81.4	63.1	72.2	92	50	60	62	80	62	.520	.558	2.04	.59	5.4	3.9	5.4
July	29.03	29.17	28.81	71.7	81.6	86.5	68.4	77.4	97	58	65	67	80	64	.621	.683	8.66	5.62	4.7	3.8	4.8
August	29.03	29.35	28.67	69.4	82.1	87.5	67.4	77.4	103	58	62	66	77	59	.557	.640	3.33	1.80	4.0	3.2	3.2
September	29.03	29.36	28.67	57.5	67.1	73.9	55.7	64.8	94	42	53	57	84	73	.418	.492	2.81	.79	5.2	5.7	5.3
October	29.03	29.37	28.48	46.9	59.2	66.0	43.9	55.0	86	31	42	44	84	58	.279	.300	2.99	1.59	4.2	2.0	3.1
November	29.10	29.74	28.46	36.5	42.0	49.8	31.2	40.5	75	4	29	31	75	65	.197	.199	1.38	1.20	4.9	4.4	5.2
December	29.15	29.75	28.76	34.1	43.5	49.0	31.7	40.4	67	17	29	33	80	67	.165	.192	.71	.55	4.6	3.4	4.9
Year	29.03	29.76	28.34	49.2	58.9	64.6	46.1	55.4	103	0	43	47	80	66	.333	.375	33.64	5.62	4.9	4.3	5.0

KEOKUK, IOWA.

[λ=40° 22′ N.; φ=91° 26′ W.; gravity corr., —0.01.]

January	29.48	30.07	29.07	24.8	31.2	36.6	21.1	28.8	56	—4	20	24	79	74	.114	.135	0.85	0.58	4.4	4.8	5.3
February (a)	29.34	29.90	28.83	24.8	32.7	38.4	21.6	30.0	67	—8	20	26	83	76	.121	.145	1.23	.50	5.5	4.8	4.6
March	29.40	29.88	28.68	29.3	39.5	44.6	27.5	36.0	73	10	22	26	71	60	.121	.149	.88	.32	4.4	4.8	5.1
April	29.33	29.72	28.82	52.4	64.1	70.3	49.8	60.0	87	23	44	46	72	53	.321	.342	2.35	1.02	4.8	4.6	4.6
May	29.26	29.55	28.87	64.1	72.9	80.0	60.5	70.2	89	50	55	57	74	60	.446	.470	4.40	1.25	4.2	4.7	5.0
June	29.33	29.69	29.08	67.0	75.2	81.6	62.6	72.1	91	49	59	61	76	62	.515	.543	2.18	.96	4.4	3.8	5.0
July	29.37	29.55	29.10	70.6	80.0	85.1	66.4	75.8	95	55	63	64	77	61	.585	.618	8.01	2.37	4.1	3.3	4.3
August	29.38	29.75	29.05	68.6	78.2	84.3	65.6	75.0	98	54	62	66	80	68	.573	.605	3.90	1.91	3.1	1.9	3.4
September	29.38	29.74	29.08	56.1	63.1	70.7	54.3	62.5	92	39	51	54	83	74	.388	.441	9.44	2.94	4.4	5.9	6.0
October	29.38	29.70	28.80	43.8	54.5	61.8	42.1	52.0	76	27	38	42	82	64	.247	.283	1.71	.98	3.2	3.0	2.9
November	29.46	30.10	28.82	34.4	39.4	46.2	30.1	38.2	74	3	29	32	80	75	.188	.202	1.01	.36	5.3	3.8	5.6
December	29.50	30.06	29.04	31.5	37.8	42.5	29.6	36.0	65	10	27	30	83	76	.153	.177	.81	.38	5.0	4.0	5.6
Year	29.38	30.10	28.68	47.3	55.7	61.8	44.3	53.0	98	—8	41	44	78	67	.314	.348	36.77	2.94	4.4	4.1	4.8

a Observations missed from 8 a. m. February 7 to 8 a. m. February 11, inclusive (9 observations).

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

JACKSONVILLE, FLA.

[H = 43 ft.; h_t = 69 ft.; h_r = 59 ft.; h_a = 84 ft.

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	6.0	NE.	28	SW.	0	4	21	4	5	5	6	4	13	0	17	6	8	9	6	0	0	1	0	0	3	1	0
February	10.0	SW.	48	SW.	1	3	7	2	4	9	18	11	4	0	15	10	4	8	8	0	0	0	0	0	3	2	0
March	7.6	SE.	35	SW.	0	7	11	3	10	8	6	13	3	1	19	10	2	6	6	0	0	0	0	0	0	1	0
April	6.6	SW.	25	NE.	0	4	8	6	24	1	10	3	4	0	17	11	2	2	2	0	0	0	0	3	0	1	0
May	7.4	SE.	29	SE.	0	2	5	8	22	15	6	2	2	0	18	13	0	7	5	0	0	0	0	12	0	8	0
June	7.1	S.	32	S.	0	3	8	9	10	15	7	7	1	0	4	18	8	14	13	0	0	0	0	11	0	9	0
July	7.8	SE.	36	S.	0	0	1	4	23	20	3	9	2	0	7	18	6	14	14	0	0	0	0	13	0	10	0
August	6.5	S.	26	W.	0	2	11	10	9	13	12	5	0	0	15	15	1	10	10	0	0	0	0	24	0	13	0
September	6.9	NE.	70	SE.	1	7	19	8	12	3	3	2	6	0	14	12	4	11	9	0	0	0	0	10	0	6	0
October	6.6	NE.	26	NE.	0	7	20	3	7	3	6	7	9	0	13	12	6	8	7	0	0	0	0	0	0	0	0
November	7.1	NE.	25	S.	0	12	22	7	7	5	1	3	3	0	9	10	11	14	14	0	0	3	0	0	0	2	0
December	6.9	N.	28	NW.	0	24	16	0	0	3	6	4	9	0	13	4	14	8	6	0	0	0	0	0	0	0	0
Year	7.2	NE.	70	SE.	2	75	149	64	133	100	84	70	56	1	161	139	66	111	100	0	0	4	0	73	6	53	0

JUPITER, FLA.

[H = 28 ft.; h_t = 13 ft.; h_r = 1 ft.; h_a = 30 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.5	NW.	27	S.	0	6	0	8	6	7	1	8	26	0	6	15	10	13	11	0	0	0	0	0	0	3	0
February	10.7	NW.	38	S.	0	8	2	6	5	10	6	8	13	0	10	6	13	11	11	0	0	0	0	0	0	1	0
March	10.8	S.	39	SW.	0	6	5	10	11	12	2	6	9	1	12	13	6	6	6	0	0	0	0	0	0	2	0
April	11.1	E.	28	N.	0	5	11	20	9	6	2	4	3	0	13	14	3	3	3	0	0	0	0	0	0	2	0
May	9.7	SE.	28	SE.	0	2	8	10	24	8	8	0	2	0	10	14	7	12	10	0	0	0	0	0	0	7	0
June	9.8	SE.	28	SW.	0	5	3	4	22	15	4	5	2	0	3	9	18	22	19	0	0	0	0	0	0	14	0
July	9.3	SE.	32	SE.	0	1	2	17	28	9	1	1	1	2	8	13	10	17	15	0	0	0	0	1	0	8	0
August	7.1	E.	22	S.	0	5	0	17	10	12	6	2	9	1	14	11	6	14	10	0	0	0	0	1	0	12	0
September	9.6	NE.	33	NE.	0	2	17	11	6	6	2	3	12	1	2	21	7	14	10	0	0	0	0	1	0	11	0
October	9.2	NE.	29	N.	0	4	15	10	8	2	4	7	12	0	6	15	10	15	12	0	0	0	0	0	0	3	0
November	13.5	E.	36	N.	0	5	6	30	8	6	0	2	3	0	3	21	6	14	9	0	0	0	0	0	0	0	0
December	10.0	NW.	30	N.	0	1	3	17	0	6	1	10	24	0	7	13	11	10	7	0	0	0	0	0	0	0	0
Year	10.0	E.	39	SW.	0	50	72	160	137	99	37	56	116	5	94	165	107	151	123	0	0	0	0	3	0	63	0

KANSAS CITY, MO.

[H = 963 ft.; h_t = 78 ft.; h_r = 81 ft.; h_a = 95 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.8	SE.	28	N.	0	11	3	8	11	11	9	0	7	2	10	5	16	8	4	4	0	4	8	0	22	0	0
February	9.3	NW.	29	NW.	0	12	7	3	7	5	9	6	9	0	9	11	9	6	3	3	0	0	3	0	23	1	0
March	10.0	NW.	28	NW.	0	6	12	6	10	7	4	0	17	0	8	15	8	10	8	6	1	0	4	0	21	2	0
April	11.6	SE.	36	SW.	0	0	5	6	17	18	6	2	6	0	7	12	11	11	10	0	0	1	0	0	3	7	0
May	9.5	SE.	32	NW.	0	2	5	0	22	20	7	3	3	0	5	19	7	14	11	0	2	0	0	0	0	13	0
June	6.5	NE.	32	NW.	0	4	12	4	43	7	5	3	7	5	9	11	10	11	7	0	0	2	0	4	0	5	0
July	7.1	S.	40	SW.	1	6	11	8	5	15	12	1	2	2	9	16	6	8	8	0	0	0	0	11	0	6	0
August	7.3	S.	29	SE.	0	4	9	3	16	18	5	2	5	0	17	8	6	6	6	0	0	0	0	12	0	9	0
September	7.9	NE.	29	NE.	0	9	13	11	12	5	2	4	4	0	8	13	9	11	9	0	0	3	0	2	0	6	0
October	7.8	NW.	31	SW.	0	6	8	5	9	10	11	0	13	0	20	4	7	6	5	0	0	3	0	0	1	1	0
November	11.0	NW.	28	SW.	0	8	4	4	9	10	8	4	13	0	12	7	11	5	3	0	0	0	5	0	16	0	0
December	7.7	SW.	28	SW.	0	6	8	2	10	10	9	6	11	0	14	8	9	4	3	0	0	2	2	0	16	0	0
Year	8.6	SE.	40	SW.	1	74	97	60	141	136	87	31	97	9	128	129	109	100	77	13	3	15	22	29	102	50	0

KEOKUK, IOWA.

[H = 614 ft.; h_t = 64 ft.; h_r = 56 ft.; h_a = 78 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.2	NW.	32	SW.	0	8	8	7	10	5	7	3	13	1	8	12	11	4	3	2	0	4	7	0	27	0	0
February	8.6	NW.	37	NW.	0	7	4	3	2	3	10	4	14	2	13	8	8	10	6	7	0	0	4	0	21	0	0
March	9.1	NW.	38	NW.	0	12	4	6	8	10	4	3	15	0	11	10	10	10	6	5	1	0	6	0	23	4	0
April	11.1	SW.	42	SW.	1	6	2	9	7	11	18	4	3	0	10	13	7	11	6	0	0	1	0	0	4	8	0
May	8.6	SW.	38	SW.	0	3	5	5	11	15	15	4	4	0	11	12	8	12	10	0	0	0	0	0	0	9	0
June	6.3	S.	30	NW.	0	7	8	5	6	10	8	6	8	2	7	16	7	12	8	0	0	1	0	2	0	6	0
July	6.2	SW.	48	NW.	1	15	6	5	5	5	19	5	2	0	16	7	8	14	11	0	0	0	0	6	0	11	0
August	6.1	S.	36	NW.	0	8	4	3	10	12	11	2	11	1	16	11	4	7	7	0	0	1	0	7	0	7	0
September	7.1	N.	45	NW.	1	15	8	4	8	6	4	6	9	0	9	7	14	19	15	0	0	1	0	2	0	8	0
October	7.2	N.	36	SW.	0	12	10	5	9	8	5	3	10	0	19	7	5	4	4	0	0	0	0	3	2	3	0
November	9.6	SW.	39	SW.	0	5	3	5	7	7	13	7	12	1	9	8	13	7	5	0	0	1	5	0	18	1	0
December	7.2	SW.	25	S.	0	8	5	8	10	6	15	5	10	0	10	9	12	5	3	2	0	4	7	0	19	0	0
Year	7.9	SW.	48	NW.	3	106	67	60	93	98	129	52	111	7	139	120	107	115	84	16	1	13	29	17	115	56	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

KEY WEST, FLA.

[λ=24° 34′ N.; φ=81° 49′ W.; gravity corr., —0.05.]

Month.	Pressure.			Temperature.										Moisture.							
		Extremes.		Mean.					Extremes.		Dew point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	30.14	30.38	29.88	65.0	66.2	70.4	62.4	66.4	79	55	58	59	80	79	.496	.512	0.90	0.37	6.2	4.7	5.2
February	30.09	30.36	29.68	67.1	67.7	72.4	63.5	68.0	80	52	60	59	78	74	.532	.515	2.11	1.41	6.0	4.0	5.2
March	30.10	30.36	29.81	69.3	69.9	75.1	66.2	70.6	82	54	64	63	82	78	.596	.577	1.61	.66	3.6	2.9	3.5
April	30.14	30.28	29.96	74.2	74.2	79.2	70.9	75.0	83	66	65	64	73	70	.611	.596	.08	.04	3.5	3.0	4.1
May	30.05	30.15	29.93	78.8	78.2	83.3	75.5	79.4	85	71	69	68	72	72	.710	.696	.54	.24	4.4	3.5	3.8
June	30.02	30.24	29.89	82.5	81.7	86.8	77.8	82.3	89	71	74	74	77	78	.852	.838	3.10	.79	6.4	6.9	5.6
July	30.10	30.22	29.92	82.7	81.7	87.3	77.3	82.3	90	72	74	73	75	76	.838	.813	3.18	1.13	5.8	5.1	5.3
August	30.06	30.15	29.93	83.8	83.4	88.8	79.1	84.0	90	71	75	74	74	73	.855	.830	2.37	.63	6.1	3.7	4.6
September	29.96	30.07	29.80	82.0	82.2	86.3	77.7	82.0	90	72	74	74	78	77	.837	.843	4.22	1.95	6.3	5.3	6.6
October	29.99	30.08	29.78	79.0	79.4	83.5	76.2	79.8	88	71	71	71	77	75	.763	.753	1.93	1.45	5.9	4.2	4.8
November	30.07	30.20	29.91	76.0	77.0	81.3	72.8	77.0	86	69	70	70	81	79	.728	.736	3.47	1.41	6.3	4.7	5.4
December	30.11	30.37	29.82	69.0	69.9	74.1	66.5	70.3	83	58	62	62	79	77	.562	.570	2.21	1.34	5.2	5.1	5.7
Year	30.07	30.38	29.68	75.8	76.0	80.7	72.2	76.4	90	52	68	68	77	76	.698	.689	25.72	1.95	5.5	4.4	5.0

KITTY HAWK, N. C.

[λ=36° N.; φ=75° 42′ W.; gravity corr., —0.02.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	30.18	30.54	29.66	37.7	39.4	43.9	34.1	39.0	64	16	32	33	80	79	.193	.200	2.77	1.92	4.4	5.3	4.1
February	29.95	30.53	29.26	42.1	43.8	50.7	36.4	43.6	68	11	36	36	79	74	.233	.225	7.16	3.50	5.0	4.4	4.5
March	30.05	30.62	29.20	44.7	47.1	54.2	39.5	46.8	74	30	38	39	77	76	.240	.258	2.41	.80	3.3	3.5	4.0
April	30.16	30.53	29.77	56.2	57.3	65.6	51.1	58.4	80	38	50	51	82	81	.380	.404	2.04	1.08	2.7	3.7	3.6
May	30.05	30.34	29.79	67.7	68.4	76.2	61.6	68.9	92	44	62	63	82	83	.564	.586	4.23	2.22	3.5	5.4	4.2
June	30.01	30.24	29.62	73.2	73.4	79.5	69.0	74.2	91	61	68	68	83	84	.687	.695	3.62	1.64	4.7	6.3	4.7
July	30.10	30.36	29.84	77.9	78.3	86.3	72.2	79.2	95	64	73	73	85	84	.811	.808	9.77	2.50	3.6	4.7	4.3
August	30.05	30.26	29.86	77.9	78.7	84.9	73.7	79.3	95	64	70	72	78	79	.754	.782	2.65	1.68	2.4	3.6	3.3
September	30.04	30.36	29.72	70.6	71.6	77.0	66.9	72.0	93	51	66	67	84	85	.650	.671	3.63	1.60	4.4	4.0	4.2
October	30.03	30.37	29.58	59.5	60.9	65.6	54.7	60.2	76	46	54	56	82	85	.425	.458	5.59	2.08	4.6	5.1	4.3
November	30.23	30.61	29.75	55.8	57.4	65.8	51.5	58.6	78	35	52	52	87	84	.401	.415	3.13	1.14	5.1	3.0	3.4
December	*30.19	*30.76	*29.33	†42.6	‡44.1	‡51.6	‡36.5	‡44.0	‡64	‡22	‡37	‡39	†81	‡82	†.230	‡.244	4.33	2.36	†3.2	‡4.1	‡4.3
Year	30.09	30.76	29.20	58.8	60.0	66.8	53.9	60.4	95	11	53	54	82	81	.466	.479	51.33	3.50	3.9	4.4	4.1

* For 26½ days only. † For 26 days only. ‡ For 27 days only.

KNOXVILLE, TENN.

[λ=35° 56′ N.; φ=83° 58′ W.; gravity corr., —0.02.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.13	29.56	28.59	34.5	42.5	48.6	32.2	40.4	64	10	29	31	79	65	.165	.186	1.49	1.04	5.5	4.2	5.1
February	28.97	29.48	28.16	35.7	44.0	49.9	32.4	41.2	71	5	27	30	73	58	.170	.181	5.51	1.75	6.2	3.5	5.6
March	29.04	29.51	28.45	39.5	48.6	55.4	35.4	45.4	81	24	33	36	77	64	.200	.230	5.30	1.90	6.2	4.6	6.2
April	29.12	29.39	28.86	57.4	68.2	74.6	52.9	63.8	90	35	48	51	72	56	.364	.391	4.24	3.10	4.2	3.9	4.5
May	29.03	29.30	28.85	67.4	75.7	84.1	62.2	73.2	92	53	60	61	78	62	.523	.546	5.31	1.67	4.3	3.5	4.2
June	29.00	29.25	28.70	69.2	76.5	82.7	64.7	73.7	90	54	64	65	84	69	.603	.624	5.61	1.79	5.1	4.9	5.3
July	29.09	29.27	28.85	72.3	76.9	84.3	68.4	76.4	94	54	69	71	88	82	.706	.759	7.36	1.66	6.5	6.7	6.9
August	29.07	29.24	28.92	72.6	80.6	87.9	68.4	78.2	94	60	67	68	83	67	.664	.695	1.25	.87	3.0	2.8	3.5
September	29.04	29.32	28.70	64.1	74.1	82.6	59.9	71.2	96	42	58	59	82	60	.505	.516	2.02	1.04	3.2	2.9	3.4
October	29.06	29.22	28.84	49.7	61.5	69.5	46.9	58.2	78	34	45	47	84	61	.307	.336	1.59	1.51	3.1	2.4	2.9
November	29.18	29.47	28.72	45.9	54.8	62.8	42.4	52.6	77	26	41	45	84	71	.273	.321	4.32	1.62	5.3	4.4	5.5
December	29.20	29.66	28.77	33.4	43.7	50.2	31.1	40.6	65	17	28	32	79	62	.159	.188	.95	.74	4.9	2.6	3.9
Year	29.08	29.66	28.16	53.5	62.3	69.4	49.7	59.6	96	5	47	50	80	65	.387	.414	44.95	3.19	4.8	3.9	4.8

LA CROSSE, WIS.

[λ=43° 49′ N.; φ=91° 15′ W.; gravity corr., 0.00.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.36	29.85	28.82	15.1	22.0	27.1	12.0	19.6	48	—16	11	18	83	82	.083	.106	0.67	0.22	6.9	5.3	6.6
February	29.18	29.80	28.59	18.1	25.4	30.9	15.9	23.4	60	—10	14	18	83	71	.092	.105	.25	.15	6.2	4.4	5.1
March (*)	.....	29.80	28.36	22.5	.....	37.3	16.7	27.0	62	— 4	16	....	75	....	.098	.....	.80	.22	5.4	.....	5.7
April	.....	29.67	28.83	45.5	.....	61.8	39.7	50.8	84	15	39	....	78	....	.266	.....	5.84	1.12	6.0	.....	5.5
May	.....	29.43	28.75	61.2	.....	75.2	56.4	65.8	88	47	52	....	73	....	.400	.....	3.55	.86	4.6	.....	5.1
June	.....	29.55	28.91	63.7	.....	79.6	58.7	69.2	89	47	56	....	77	....	.455	.....	4.29	1.28	4.1	.....	4.7
July	.....	29.50	29.05	65.4	.....	82.1	60.5	71.3	94	49	59	....	80	....	.512	.....	1.51	.82	4.8	.....	4.2
August	.....	29.61	28.92	63.4	.....	82.0	58.5	70.2	99	43	58	....	83	....	.498	.....	2.16	.63	3.8	.....	4.1
September	.....	29.58	28.94	50.4	.....	65.7	45.3	55.5	82	33	46	....	86	....	.328	.....	3.33	1.40	5.4	.....	6.1
October	.....	29.62	28.58	38.6	.....	57.9	34.1	46.0	74	20	33	....	80	....	.197	.....	3.69	2.41	4.6	.....	4.8
November	.....	29.92	28.73	24.8	.....	35.5	19.3	27.4	69	— 4	19	....	77	....	.120	.....	2.66	1.10	7.0	.....	6.8
December	.....	29.93	28.86	25.1	.....	33.7	19.4	26.6	51	— 4	21	....	84	....	.121	.....	.60	.24	7.4	.....	7.8
Year	.....	29.93	28.36	41.2	.....	55.7	36.4	46.1	99	—16	35	....	80	....	.264	.....	29.15	2.41	5.5	.....	5.5

* 8 p. m. observation discontinued February 28, 1896.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

KEY WEST, FLA.

[H = 22 ft.; h_t = 42 ft.; h_r = 44 ft.; h_a = 50 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	10.6	NE.	37	N.	0	16	21	10	3	4	2	2	4	0	9	15	7	8	6	0	0	0	0	0	0	2	0
February	12.8	NE.	39	SW.	0	12	12	10	8	5	3	1	6	1	11	8	10	9	6	0	0	1	0	0	0	1	0
March	11.3	NE.	44	NW.	2	10	15	19	8	3	0	1	5	1	18	8	5	7	4	0	0	0	0	0	0	2	0
April	11.6	E.	31	N.	0	2	18	31	3	1	0	0	4	1	14	14	2	2	2	0	0	0	0	0	0	0	0
May	9.8	E.	28	NE.	0	3	7	34	16	2	0	0	0	0	18	11	2	5	4	0	0	0	0	0	0	1	0
June	8.6	SE.	23	S.	0	4	7	14	20	9	2	1	3	0	3	25	2	17	13	0	0	0	0	0	0	10	0
July	10.1	E.	37	SW.	0	1	2	36	18	4	1	0	0	0	9	15	7	16	12	0	0	0	0	0	0	9	0
August	7.3	E.	30	NW.	0	1	9	29	14	5	2	0	1	1	9	20	2	15	12	0	0	0	0	1	0	14	0
September	9.7	NE.	33	NE.	0	0	16	16	8	8	3	2	7	0	4	14	12	15	12	0	0	0	0	0	0	5	0
October	9.4	NE.	32	SW.	0	6	20	24	3	2	3	3	1	0	12	12	7	9	5	0	0	0	0	0	0	3	0
November	13.1	E.	37	NE.	0	2	25	24	6	1	0	2	0	0	7	15	8	18	16	0	0	0	0	0	0	1	0
December	12.0	NE.	46	N.	1	7	34	8	6	0	1	1	5	0	7	17	7	12	7	0	0	0	0	0	0	1	0
Year	10.5	E.	46	N.	3	64	186	255	113	44	17	13	36	4	121	174	71	133	99	0	0	1	0	1	0	49	0

KITTY HAWK, N. C.

[H = 9 ft.; h_t = 12 ft.; h_r = 2 ft.; h_a = 30 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	15.6	N.	48	NE.	2	22	9	3	2	2	10	3	11	0	15	11	5	9	5	0	0	6	3	0	7	0	0
February	18.3	SW.	66	SW.	10	5	7	3	4	5	14	10	10	0	14	4	11	12	11	3	0	4	3	0	8	0	0
March	18.5	NW.	58	SW.	9	11	9	2	4	5	12	5	14	0	16	9	6	8	7	1	0	3	0	0	4	3	0
April	15.0	SW.	47	N.	2	4	13	5	7	0	25	0	6	0	19	4	7	9	5	0	0	4	0	0	0	1	0
May	13.2	SW.	44	NE.	3	6	11	6	12	1	20	5	1	0	15	10	6	12	11	0	0	1	0	2	0	5	0
June	12.5	NE.	37	W.	0	5	18	7	6	3	17	4	0	0	13	10	7	9	8	0	0	0	0	1	0	6	0
July	14.3	SW.	54	W.	3	1	11	0	1	5	36	7	1	0	13	13	5	14	13	0	0	0	0	8	0	7	0
August	12.0	SW.	36	NE.	0	3	20	6	4	2	21	5	1	0	21	5	5	6	5	0	0	0	0	7	0	1	0
September	14.5	NE.	58	NE.	6	6	19	6	15	0	10	2	2	0	12	11	7	7	6	0	0	0	0	2	0	0	0
October	16.9	NE.	72	NE.	4	1	25	7	3	5	7	2	12	0	15	9	7	8	8	0	0	0	0	0	0	0	0
November	14.4	SW.	47	NE.	3	6	14	6	4	5	16	4	5	0	18	7	5	5	5	0	0	0	0	0	0	0	0
December	*14.3	*N.	60	NE.	*7	*19	*9	*0	*1	*5	*8	*12	*0	*0	*14	*5	*8	5	4	0	0	*2	*0	*0	*7	0	0
Year	15.0	SW.	72	NE.	49	89	165	51	63	38	196	59	63	0	185	98	79	104	88	4	0	20	6	20	26	23	0

* For 27 days only.

KNOXVILLE, TENN.

[H = 980 ft.; h_t = 80 ft.; h_r = 71 ft.; h_a = 88 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	5.0	NE.	35	SW.	0	9	24	2	0	0	5	13	6	3	16	3	12	7	5	1	0	1	1	0	14	0	0
February	7.1	W.	36	W.	0	7	11	3	0	2	14	13	7	1	11	5	13	9	8	0	0	0	3	0	13	0	0
March	7.1	NE.	30	W.	0	5	22	6	0	1	3	16	9	0	10	6	15	16	11	5	0	0	0	0	11	4	0
April	5.4	N.	35	S.	0	4	10	6	0	0	2	31	4	3	14	8	8	9	7	0	1	1	0	2	0	1	0
May	4.6	W.	34	NW.	0	5	8	13	0	6	8	19	1	2	13	12	6	12	9	0	0	1	0	2	0	6	0
June	4.5	SW.	23	NW.	0	7	14	3	2	3	15	6	5	5	9	14	7	15	10	0	1	0	0	0	0	4	0
July	4.4	W.	24	NW.	0	1	10	5	0	0	16	17	8	5	6	7	18	18	15	0	0	2	0	6	0	7	0
August	4.4	W.	29	W.	0	13	15	5	0	1	4	17	3	4	20	8	3	4	2	0	0	1	0	14	0	4	0
September	4.8	W.	29	W.	0	11	11	10	0	1	3	18	4	2	15	11	4	6	5	0	0	0	0	5	0	2	0
October	4.3	NE.	30	SW.	0	6	13	1	0	2	10	8	10	12	19	7	5	5	3	0	0	4	0	0	0	0	0
November	4.1	NE.	34	SW.	0	10	21	4	5	0	8	3	4	5	13	4	13	10	8	0	0	1	0	0	4	1	0
December	4.7	NE.	31	SW.	0	11	22	2	1	1	11	4	5	5	18	4	9	3	3	0	0	0	0	0	17	0	0
Year	5.0	NE.	36	W.	0	89	181	60	8	17	99	165	66	47	164	89	113	114	86	6	2	11	4	29	59	29	0

LA CROSSE, WIS.

[H = 720 ft.; h_t = 70 ft.; h_r = 61 ft.; h_a = 78 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	6.5	S.	33	W.	0	7	3	1	3	18	4	8	12	6	7	10	14	7	5	6	0	1	19	0	29	0	0
February	8.5	N.	40	W.	1	18	5	0	0	14	6	11	2	2	11	10	8	4	2	11	0	0	17	0	26	0	0
March	8.9	S.	36	S.	0	5	3	1	3	11	1	4	3	0	8	15	8	10	4	3	0	0	8	0	28	0	0
April	8.7	S.	34	W.	0	7	1	4	5	7	1	2	3	0	8	15	7	15	13	3	1	0	2	0	8	7	0
May	7.6	S.	32	W.	0	2	1	1	5	14	3	3	2	0	11	13	7	13	11	0	1	0	0	0	0	5	1
June	5.8	S.	28	N.	0	6	0	2	6	9	3	3	1	0	11	15	4	11	10	0	2	1	0	0	0	9	0
July	5.2	S.	24	NW.	0	3	2	0	1	17	2	2	4	0	14	14	3	6	6	0	0	0	0	3	0	2	0
August	6.2	S.	24	SW.	0	3	1	0	2	16	6	0	1	2	15	11	5	11	11	0	0	3	0	7	0	8	0
September	6.3	S.	28	NW.	0	7	0	0	1	13	0	4	5	0	9	8	13	11	9	0	0	1	0	0	0	1	0
October	6.7	S.	28	S.	0	6	1	0	1	13	5	2	2	1	14	10	7	6	5	1	0	2	0	0	11	2	0
November	7.9	W.	26	W.	0	5	1	0	1	7	3	9	4	0	3	13	14	9	8	4	0	1	11	0	25	0	0
December	6.1	S.	26	NW.	0	5	0	2	4	9	1	5	5	0	4	6	21	11	5	10	0	1	13	0	27	0	0
Year	7.0	S.	40	W.	1	74	18	11	32	148	35	53	44	11	115	140	111	114	89	38	4	10	70	10	154	34	1

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

LANDER, WYO.

[λ = 42° 50′ N.; φ = 108° 45′ W.; gravity corr., −0.01.]

Month.	Pressure.			Temperature.							Moisture.											
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	24.59	24.92	24.27	17.4	26.9	37.0	12.2	24.6	51	−20	12	16	76	64	.076	.092	0.24	0.21	3.4	4.9	4.2
February	24.61	24.99	24.01	20.3	33.7	42.3	16.1	29.2	59	−1	12	18	70	53	.073	.097	.26	.14	2.8	3.8	3.7
March	24.55	24.91	23.91	20.2	35.6	40.4	16.4	28.4	62	−22	12	18	71	52	.080	.099	2.63	.78	4.4	6.0	5.8
April	24.52	24.96	24.16	28.9	47.6	51.8	27.0	39.4	69	5	22	18	72	37	.116	.103	1.20	.41	4.8	6.2	5.8
May	24.54	24.79	24.04	37.9	58.3	62.7	35.1	48.9	82	19	26	20	64	25	.146	.117	1.75	1.62	4.5	6.7	5.9
June	24.70	24.96	24.40	51.0	73.5	79.1	47.2	63.2	88	36	40	35	68	26	.254	.209	.12	.08	3.4	6.5	5.0
July	24.75	24.95	24.53	56.4	77.3	82.1	54.0	68.0	95	45	46	44	70	34	.323	.304	3.00	1.60	4.1	6.3	5.4
August	24.75	24.9[illegible]	24.56	50.9	75.4	80.8	48.8	64.8	89	39	41	39	71	31	.265	.255	.49	.18	2.6	4.9	4.0
September	24.70	24.95	24.41	43.3	61.4	67.1	40.6	53.8	85	24	36	37	78	45	.219	.229	1.08	.31	5.7	6.0	5.9
October	24.70	25.00	24.34	30.8	50.4	59.0	28.0	43.5	79	10	22	27	70	44	.120	.147	.74	.67	3.9	3.2	3.5
November	24.58	24.94	24.06	18.8	27.5	37.3	12.8	25.0	67	−31	10	13	71	58	.081	.085	.81	.50	5.5	4.5	5.5
December	24.70	25.00	24.34	18.8	29.9	40.4	14.5	27.4	52	0	12	20	74	65	.075	.104	T.	T.	2.6	3.7	3.7
Year	24.64	25.00	23.91	32.9	49.8	56.7	29.4	43.0	95	−31	24	25	71	44	.152	.153	12.32	1.62	4.0	5.2	4.9

LEXINGTON, KY.

[λ = 38° 2′ N.; φ = 84° 33′ W.; gravity corr., −0.02.]

January	29.09	29.54	28.54	30.3	36.2	40.7	28.0	34.4	60	0	25	28	81	73	.141	.166	1.25	0.38	8.6	7.3	8.6
February	28.91	29.43	28.21	31.3	36.3	42.5	27.9	35.2	68	−2	25	25	77	65	.147	.156	3.15	.95	8.3	6.7	7.8
March	29.00	29.50	28.47	34.0	39.8	45.5	29.9	37.7	65	13	28	29	79	66	.169	.175	5.41	1.06	8.5	6.7	8.3
April	29.06	29.34	28.80	57.0	64.4	71.7	51.8	61.8	88	28	45	44	65	49	.329	.320	.40	.21	6.5	6.2	7.2
May	28.98	29.23	28.80	67.6	73.1	81.2	60.6	70.9	92	42	57	55	70	56	.468	.448	3.20	.96	6.5	6.7	6.3
June	28.96	29.22	28.64	69.6	73.4	80.9	63.0	72.0	90	53	62	62	76	68	.561	.560	3.74	1.14	6.3	6.9	7.3
July	29.03	29.21	28.85	72.2	74.9	83.4	67.5	75.4	94	56	67	68	84	79	.675	.690	10.39	2.86	6.7	6.5	6.5
August	29.03	29.29	28.79	71.2	76.2	84.8	65.5	75.2	94	54	64	64	77	66	.605	.604	3.37	2.18	4.8	5.2	5.5
September	28.99	29.31	28.64	63.1	68.4	78.2	56.7	67.4	95	36	55	54	76	64	.460	.450	4.25	2.24	5.2	4.8	6.5
October	29.01	29.24	28.70	48.3	56.0	64.2	44.5	54.4	77	30	39	41	72	59	.252	.262	1.27	.70	4.1	3.5	4.4
November	29.12	29.50	28.68	43.4	48.9	55.7	39.6	47.6	72	14	36	37	77	65	.233	.242	4.30	2.27	7.6	5.9	6.3
December	29.14	29.58	28.70	33.4	40.5	46.0	30.9	38.4	63	13	27	28	77	61	.155	.162	2.56	1.80	7.2	5.3	6.8
Year	29.03	29.58	28.21	51.8	57.3	64.6	47.2	55.9	95	−2	44	45	76	64	.350	.353	43.29	2.86	6.7	6.0	6.8

LITTLE ROCK, ARK.

[λ = 34° 45′ N.; φ = 92° 6′ W.; gravity corr., −0.03.]

January	29.85	30.48	29.24	36.0	45.0	48.4	34.5	41.4	66	15	31	34	83	66	.187	.206	4.85	1.95	6.1	6.0	6.5
February	29.73	30.20	29.23	38.4	50.1	55.2	36.7	46.0	73	24	34	36	83	61	.201	.225	2.89	1.71	3.8	3.6	4.9
March	29.76	30.16	29.28	43.3	53.0	58.0	41.0	49.5	78	27	40	45	89	76	.263	.315	4.30	.83	6.7	6.1	6.7
April	29.75	30.13	29.46	61.4	72.1	78.0	58.9	68.4	87	34	56	56	82	58	.464	.455	2.67	1.88	6.0	3.8	6.3
May	29.67	29.90	29.40	69.1	79.9	85.2	66.0	75.6	93	57	62	63	80	57	.572	.581	1.32	.62	4.4	4.8	4.9
June	29.68	29.95	29.46	72.2	81.2	87.2	68.5	77.3	96	56	65	65	79	59	.633	.622	3.32	1.40	4.1	3.8	5.2
July	29.74	29.91	29.60	76.6	88.2	94.2	74.2	84.2	103	64	68	67	74	52	.678	.669	.86	.27	3.3	4.3	4.6
August	29.74	30.01	29.52	74.2	87.1	93.9	71.6	82.8	105	60	65	63	74	48	.622	.590	1.82	1.10	1.8	4.7	3.7
September	29.71	30.05	29.46	65.1	78.0	84.4	63.1	73.8	100	41	59	59	82	55	.520	.520	3.85	1.35	3.0	3.2	3.9
October	29.76	29.99	29.47	53.9	64.9	71.2	52.4	61.8	91	38	47	50	79	60	.339	.374	3.12	1.76	4.7	3.5	5.1
November	29.86	30.38	29.39	46.8	55.5	62.5	43.8	53.2	78	21	42	43	82	66	.294	.314	3.81	1.11	5.5	4.8	6.0
December	29.91	30.38	29.40	38.5	51.4	57.0	36.5	46.8	73	22	32	34	76	54	.191	.211	.51	.33	2.9	2.8	4.4
Year	29.76	30.48	29.23	56.3	67.2	72.9	53.9	63.4	105	15	50	51	80	59	.414	.424	33.32	1.95	4.4	4.3	5.2

LOS ANGELES, CAL.

[λ = 34° 3′ N.; φ = 118° 15′ W.; gravity corr., −0.03.]

January	29.71	29.88	29.35	50.7	58.3	67.9	47.4	57.6	87	36	38	48	69	73	.254	.344	3.23	1.73	3.4	3.9	4.8
February	29.72	29.92	29.46	50.4	64.6	73.4	45.8	59.6	88	36	34	42	59	47	.205	.270	T.	T.	2.0	2.0	2.3
March	29.66	29.86	29.31	50.1	62.5	69.7	47.2	58.4	89	35	43	48	77	62	.284	.344	2.97	1.33	2.9	4.7	4.5
April	29.67	29.86	29.50	48.0	60.7	66.7	45.7	56.2	81	38	41	44	78	56	.264	.296	.19	.07	3.4	2.3	3.5
May	29.61	29.76	29.41	53.8	67.0	74.5	51.5	63.0	103	44	46	49	78	55	.318	.348	.30	.29	3.3	1.7	2.9
June	29.55	29.74	29.41	59.6	72.6	80.1	57.9	69.0	99	48	55	57	86	60	.438	.468	T.	T.	5.4	0.5	3.2
July	29.59	29.72	29.41	61.8	73.4	81.5	60.3	70.9	92	54	59	61	92	65	.508	.530	.02	.02	5.5	1.2	3.8
August	29.61	29.80	29.47	62.5	73.7	82.1	60.4	71.2	91	54	59	61	89	64	.504	.532	.01	.01	5.5	0.7	3.5
September	29.54	29.68	29.28	58.6	70.1	79.3	55.8	67.6	92	50	54	57	87	64	.427	.469	T.	T.	3.8	1.2	3.9
October	29.57	29.77	29.36	55.5	67.1	76.9	53.8	65.4	90	47	51	55	87	67	.381	.438	1.30	1.20	2.2	2.1	3.2
November	29.67	29.92	29.30	52.6	61.4	70.1	49.5	59.8	84	37	43	51	74	70	.291	.379	1.66	1.14	2.5	3.1	3.8
December	29.75	29.90	29.44	52.5	61.1	69.7	48.2	59.0	84	42	41	48	69	64	.263	.33[illegible]	2.12	1.22	1.7	2.6	3.5
Year	29.64	29.92	29.28	54.7	66.0	74.3	52.0	63.1	103	35	47	52	79	62	.345	.396	11.80	1.73	3.5	2.2	3.6

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

LANDER, WYO.

[H = 5,372 ft.; h_t = 26 ft.; h_r = 17 ft.; h_a = 36 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	b 3.2	SW.	50	W.	2	0	3	4	1	8	17	6	13	4	12	17	2	3	2	3	0	0	11	0	31	0	0
February	4.3	SW.	35	W.	0	3	3	1	3	9	16	9	8	6	16	10	3	4	4	4	0	1	5	0	29	0	0
March	5.0	SW.	42	NW.	1	4	5	4	8	10	15	10	6	0	6	18	7	11	11	10	0	0	8	0	27	0	0
April	5.5	SW.	36	SW.	0	2	9	1	3	6	23	5	11	0	7	15	8	10	5	7	0	0	3	0	22	0	0
May	7.1	SW.	48	SW.	2	3	2	3	11	4	19	11	9	0	7	16	8	3	3	1	0	0	0	0	11	0	0
June	4.5	NW.	36	W.	0	5	8	2	9	3	10	8	14	1	7	23	0	4	1	0	0	0	0	0	0	6	0
July	3.9	SW.	30	SW.	0	3	9	3	4	4	22	5	10	2	6	19	6	10	8	0	0	0	0	3	0	7	2
August	4.3	SW.	40	SW.	1	2	6	1	7	6	17	10	8	5	16	9	6	9	4	0	0	0	0	0	0	4	2
September	3.6	SW.	28	W.	0	0	10	3	2	5	15	4	14	7	8	11	11	10	6	0	1	0	0	0	3	5	0
October	2.4	SW.	32	SE.	0	0	14	0	3	9	22	5	1	8	15	10	6	3	2	1	0	0	0	0	23	0	0
November	4.5	W.	48	SW.	2	2	5	3	3	0	14	18	7	2	10	9	11	7	4	6	0	0	7	0	27	0	0
December	3.1	SW.	26	NW.	0	3	4	5	2	13	22	5	8	0	13	17	1	0	0	0	0	0	2	0	31	0	0
Year	4.3	SW.	50	W.	8	33	78	30	56	83	212	96	109	35	123	174	69	74	50	32	1	1	36	3	204	22	4

LEXINGTON, KY.

[H = 989 ft.; h_t = 75 ft.; h_r = 2 ft.; h_a = 122 ft.]

January	11.5	SW.	36	S.	0	0	8	10	7	10	12	8	7	0	0	8	23	10	7	2	0	0	3	0	20	0	0
February	15.5	SW.	48	W.	4	4	7	3	1	8	21	11	3	0	3	7	19	11	9	3	0	0	6	0	17	0	0
March	14.0	W.	48	SE.	2	3	12	5	5	8	10	12	7	0	2	7	22	15	14	6	1	0	3	0	22	2	0
April	13.7	SW	44	W.	1	0	8	3	5	11	21	9	3	0	2	13	15	6	4	0	1	0	0	0	4	1	0
May	10.0	SW.	48	S.	1	2	6	4	8	11	14	12	3	2	7	10	14	14	11	0	1	0	0	3	0	8	0
June	8.8	S.	36	SW.	0	2	8	4	3	21	10	9	3	0	3	10	17	15	8	0	0	0	0	1	0	3	0
July	10.2	S.	40	SW.	1	3	8	0	4	27	13	5	2	0	5	16	10	15	14	0	0	0	0	5	0	6	0
August	8.0	S.	40	SE.	1	8	11	4	9	17	5	3	4	1	9	11	11	6	5	0	0	0	0	8	0	7	0
September	10.0	NE.	56	SW.	2	3	13	5	4	12	10	2	9	2	6	10	14	9	7	0	0	0	0	6	0	3	0
October	10.5	NE.	48	SW.	1	0	16	3	3	11	15	4	9	1	13	12	6	8	5	0	0	0	0	0	1	0	0
November	14.1	SW.	48	W.	3	3	4	1	4	14	17	5	12	0	7	10	13	11	9	0	0	0	2	0	8	0	0
December	12.6	SW.	38	S.	0	3	10	7	1	13	20	4	4	0	6	8	17	5	3	0	0	0	3	0	16	1	0
Year	11.6	SW.	56	SW.	16	31	111	49	54	163	168	84	66	6	63	122	181	125	96	11	3	0	17	23	88	31	0

LITTLE ROCK, ARK.

[H = 302 ft.; h_t = 71 ft.; h_r = 62 ft.; h_a = 79 ft.]

January	6.9	N.	32	S.	0	14	6	7	4	7	5	9	6	4	8	7	16	9	9	0	0	1	1	0	11	1	0
February	7.6	NW.	28	NW.	0	11	4	6	8	4	8	7	9	1	11	9	9	6	5	1	0	1	0	0	6	0	0
March	9.2	NE.	33	NW.	0	11	12	9	3	11	5	2	8	1	8	5	18	11	10	2	0	0	0	0	6	2	0
April	8.2	S.	38	N.	0	2	1	3	9	28	12	3	1	1	4	17	9	5	5	0	1	0	0	0	0	4	0
May	6.8	S.	37	NW.	0	3	4	3	8	25	13	4	2	0	11	12	8	6	5	0	0	1	0	6	0	7	0
June	6.4	E.	33	NW.	0	10	9	9	8	12	7	0	5	0	8	15	7	8	7	0	0	0	0	9	0	9	0
July	6.1	SW.	33	NE.	0	5	8	9	7	9	18	1	5	0	10	18	3	7	5	0	0	0	0	22	0	9	0
August	5.6	SW.	28	N.	0	4	10	1	10	12	15	4	3	3	15	11	5	7	6	0	0	0	0	22	0	12	0
September	5.9	SE.	34	NE.	0	5	11	3	15	5	9	4	2	6	10	6	8	8	7	0	0	0	0	14	0	5	0
October	6.2	E.	24	SW.	0	9	10	8	4	5	5	12	5	4	11	11	9	6	6	0	0	0	0	1	0	2	0
November	8.4	S.	30	NW.	0	16	4	2	4	21	5	2	3	3	10	5	15	9	9	0	0	3	0	0	5	2	0
December	6.4	SW.	27	NW.	0	8	4	6	5	11	10	6	10	2	14	10	7	3	3	0	0	1	0	0	10	0	0
Year	7.0	S.	38	N.	0	98	83	60	85	150	112	54	59	25	126	126	114	85	77	3	1	7	1	74	38	53	0

LOS ANGELES, CAL.

[h = 330 ft.; h_t = 74 ft.; h_r = 66 ft.; h_a = 82 ft.]

January	3.5	W.	20	NW.	0	7	13	8	3	0	2	14	10	5	9	14	8	9	8	0	0	2	0	0	0	0	0
February	3.6	NE.	22	NW.	0	5	21	3	0	0	3	16	9	1	21	5	3	0	0	0	0	0	0	0	0	0	0
March	3.8	W.	21	NW.	0	6	18	7	2	3	3	17	9	2	9	15	7	6	4	0	2	4	0	0	0	0	0
April	4.6	W.	24	W.	0	3	14	10	0	0	1	25	6	1	11	16	3	4	3	0	0	1	0	0	0	1	0
May	4.1	W.	15	W.	0	2	17	5	0	1	5	23	4	5	14	16	1	2	1	0	1	0	0	3	0	1	0
June	3.4	W.	13	SW.	0	3	2	7	4	3	9	26	2	4	9	21	0	0	0	0	0	4	0	3	0	0	0
July	3.6	W.	15	W.	0	1	1	4	1	3	6	34	8	4	9	19	3	1	0	0	0	7	0	1	0	0	0
August	3.6	W.	15	W.	0	0	11	2	5	2	5	28	2	7	8	21	2	1	0	0	0	8	0	1	0	0	0
September	4.0	W.	15	W.	0	1	17	2	3	0	12	20	1	4	8	22	0	0	0	0	0	9	0	1	0	0	0
October	3.7	W.	24	W.	0	4	17	2	0	0	7	24	1	7	15	14	2	3	1	0	0	7	0	0	0	0	0
November	3.9	W.	20	NW.	0	9	16	6	1	1	6	19	2	0	14	12	4	5	3	0	0	2	0	0	0	0	0
December	3.6	NE.	16	E.	0	7	22	4	0	2	6	10	11	0	15	12	4	5	2	0	0	4	0	0	0	0	0
Year	3.8	W.	24	W.	0	48	164	60	19	15	65	256	65	40	142	187	37	36	22	0	3	48	0	9	0	2	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

b For 738 hours.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

LOUISVILLE, KY.

[λ = 38° 15′ N.; φ = 85° 45′ W.; gravity corr., −0.02.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.			Cloudiness.	
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.61	30.14	29.04	31.6	37.7	41.7	29.4	35.6	61	3	24	30	74	72	.139	.175	0.82	0.29	7.7	6.6	7.6
February	29.43	29.99	28.82	33.3	39.1	44.4	30.0	37.2	73	3	24	27	69	63	.144	.160	3.16	1.03	6.6	5.7	5.9
March	29.52	30.03	29.02	35.4	42.6	48.2	31.9	40.0	71	16	29	29	76	60	.174	.176	4.86	1.36	7.2	5.5	6.1
April	29.54	29.87	29.28	57.1	68.3	75.6	53.6	64.6	90	30	45	46	64	46	.330	.341	.25	.12	5.6	3.9	4.5
May	29.45	29.72	29.20	66.6	76.1	83.7	61.6	72.6	94	54	58	58	74	57	.482	.503	4.32	1.29	5.5	4.3	4.8
June	29.44	29.71	29.11	68.9	77.5	83.8	64.5	74.2	92	56	61	62	78	60	.554	.566	4.79	2.87	5.2	4.4	5.5
July	29.50	29.68	29.33	72.7	79.8	88.0	68.8	78.4	98	59	65	68	78	68	.639	.688	13.01	5.50	5.2	5.0	4.9
August	29.51	29.80	29.24	69.9	80.9	88.8	66.6	77.7	98	55	63	64	79	58	.595	.615	4.51	2.00	3.4	4.2	2.7
September	29.48	29.87	29.13	61.4	71.6	79.8	57.8	68.8	97	40	55	55	82	59	.458	.457	4.12	2.74	5.1	4.3	5.2
October	29.51	29.77	29.23	47.3	59.5	67.5	45.1	56.3	82	32	41	44	79	57	.263	.292	1.61	1.03	3.1	3.8	3.6
November	29.63	30.09	29.16	44.7	51.1	59.5	41.2	50.4	75	14	37	38	74	62	.237	.255	4.62	2.32	7.5	4.5	6.9
December	29.65	30.15	29.21	36.1	43.1	48.7	33.3	41.0	66	15	28	30	72	61	.159	.175	2.15	1.23	5.6	4.4	5.9
Year	29.52	30.15	28.82	52.1	60.6	67.5	48.6	58.1	98	3	44	46	75	60	.348	.367	48.22	5.50	5.6	4.7	5.3

LYNCHBURG, VA.

[λ = 37° 25′ N.; φ = 79° 9′ W.; gravity corr., −0.02.]

January	29.45	29.78	28.88	30.9	37.4	44.1	28.4	36.2	64	11	26	29	82	72	.145	.164	2.30	1.36	6.2	5.5	5.3
February	29.22	29.75	28.18	34.7	41.5	48.1	30.4	39.2	65	6	27	31	75	66	.161	.184	4.54	1.55	6.3	4.1	5.3
March	29.31	29.90	28.54	37.4	45.3	53.6	33.0	43.3	73	21	32	34	79	66	.189	.210	5.54	1.72	6.0	3.4	5.2
April	29.42	29.77	29.11	55.3	63.2	71.2	49.3	60.2	95	30	48	53	77	70	.359	.436	1.61	.82	4.6	4.7	4.8
May	29.33	29.65	29.08	67.1	72.7	81.7	59.8	70.8	94	50	60	64	79	75	.529	.601	5.61	1.73	5.3	5.6	5.6
June	29.30	29.54	28.88	69.0	73.1	80.4	63.3	71.8	90	55	63	65	83	77	.588	.628	3.82	1.40	5.2	5.7	5.8
July	29.37	29.66	29.12	74.1	77.7	85.8	68.0	76.9	96	58	67	69	79	75	.665	.711	8.58	4.80	5.9	6.6	5.9
August	29.37	29.63	29.19	72.3	77.7	87.3	66.2	76.8	98	52	64	66	77	68	.619	.647	2.04	.66	3.1	4.6	3.7
September	29.35	29.67	28.58	62.6	69.9	79.3	58.1	68.7	96	39	57	60	82	71	.486	.530	7.08	5.79	4.8	4.5	4.6
October	29.36	29.70	28.99	49.9	56.6	65.8	45.6	55.7	77	31	43	45	78	67	.287	.311	1.07	.73	4.8	3.1	4.1
November	29.51	29.96	28.96	46.5	53.0	62.6	41.7	52.2	77	28	40	42	80	67	.266	.280	4.92	2.41	5.4	5.0	5.4
December	29.49	30.12	29.09	32.6	39.5	48.8	29.1	39.0	65	18	26	29	74	66	.141	.165	.13	.10	5.1	3.1	4.3
Year	29.37	30.12	28.18	52.7	59.0	67.4	47.7	57.6	98	6	46	49	79	70	.370	.406	46.64	5.79	5.2	4.7	5.0

MARQUETTE, MICH.

[λ = 46° 34′ N.; φ = 87° 24′ W.; gravity corr., 0.00.]

January	29.27	29.72	28.66	18.5	20.6	24.6	14.0	19.3	36	−13	16	17	88	84	.094	.099	2.04	0.73	8.6	8.5	8.3
February	29.06	29.73	28.49	16.1	21.1	28.3	12.4	20.4	55	− 8	12	16	84	79	.085	.098	1.75	.57	6.9	6.5	7.3
March	29.22	29.78	28.29	18.3	22.7	28.9	14.3	21.6	49	0	13	15	77	71	.082	.091	1.20	.21	7.8	6.3	7.5
April	29.19	29.75	28.63	39.4	42.8	50.7	34.4	42.6	70	10	34	36	81	78	.210	.230	3.12	.59	7.2	6.2	7.1
May	29.08	29.50	28.44	53.9	56.8	66.5	46.2	56.4	96	33	45	45	74	68	.314	.311	2.46	.76	6.0	6.2	6.5
June	29.17	29.44	28.91	60.9	62.5	71.8	52.3	62.0	89	40	50	49	69	64	.367	.359	2.25	1.26	3.2	4.7	4.7
July	29.19	29.40	28.86	64.1	66.7	73.5	56.3	64.9	92	48	54	54	72	65	.431	.421	1.49	.71	5.5	4.3	5.9
August	29.16	29.56	28.70	62.4	65.0	73.1	56.0	64.6	92	43	55	55	78	72	.453	.446	1.93	.80	4.0	4.1	5.1
September	29.18	29.59	28.77	51.3	54.8	62.1	46.7	54.4	79	35	45	46	80	75	.310	.320	1.34	.50	7.5	6.4	7.2
October	29.20	29.56	28.56	40.5	43.4	50.8	37.2	44.0	69	26	36	37	84	78	.219	.227	4.20	3.16	6.9	6.3	7.2
November	29.20	29.72	28.41	26.3	28.4	34.9	22.5	28.7	54	− 2	24	24	89	82	.135	.141	6.44	2.78	8.2	8.1	8.1
December	29.26	29.77	28.70	23.3	26.1	31.4	19.7	25.6	52	− 6	20	21	86	79	.112	.115	1.37	.40	6.8	5.9	7.0
Year	29.18	29.78	28.29	39.6	42.6	49.7	34.3	42.0	96	−13	34	35	80	75	.234	.239	29.59	3.16	6.6	6.1	6.8

MEMPHIS, TENN.

[λ = 35° 9′ N.; φ = 90° 3′ W.; gravity corr., −0.03.]

January	29.74	30.37	29.06	37.4	44.6	48.0	35.6	41.8	65	14	33	33	83	66	.197	.206	4.32	1.11	6.6	5.7	6.4
February	29.62	30.10	29.06	39.3	47.4	52.3	37.2	44.8	71	18	34	37	81	69	.206	.234	3.19	.95	5.0	4.0	4.6
March	29.65	30.07	29.24	43.3	51.8	56.7	41.1	48.9	78	27	39	46	85	82	.260	.345	4.78	1.19	6.0	6.3	6.2
April	29.66	29.99	29.39	62.7	72.5	77.3	60.5	69.0	87	39	58	63	84	73	.491	.587	3.78	1.78	5.3	5.1	5.2
May	29.58	29.79	29.34	71.0	80.3	85.3	67.5	76.4	92	58	64	64	80	59	.605	.598	2.49	1.12	4.2	4.2	4.1
June	29.58	29.86	29.34	72.3	80.1	85.4	68.6	77.0	92	58	66	65	80	62	.638	.636	2.07	.49	3.7	3.7	4.6
July	29.65	29.82	29.50	76.3	86.6	91.2	73.7	82.4	101	63	69	69	78	58	.714	.721	.80	.42	2.7	4.5	3.8
August	29.64	29.89	29.44	74.8	85.2	92.7	71.9	82.3	101	60	66	67	75	56	.652	.670	.84	.25	2.7	4.0	3.4
September	29.62	29.94	29.39	66.3	76.9	82.7	62.7	72.7	96	41	58	59	75	56	.497	.525	3.21	1.12	3.6	3.5	3.9
October	29.65	29.86	29.38	54.4	65.6	71.9	52.0	62.0	85	40	46	49	74	56	.325	.360	1.49	.66	4.5	3.4	4.3
November	29.76	30.22	29.34	48.6	55.3	62.1	44.4	53.2	76	19	42	43	78	65	.298	.314	7.47	5.10	6.8	2.9	5.8
December	29.81	30.26	29.29	40.2	50.2	55.1	38.4	46.8	73	21	33	42	75	76	.201	.292	.56	.43	3.2	2.7	3.6
Year	29.66	30.37	29.06	57.2	66.4	71.7	54.5	63.1	101	14	51	53	79	65	.424	.457	35.00	5.10	4.5	4.2	4.7

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

LOUISVILLE, KY.

[H = 525 ft.; h_1 = 114 ft.; h_r = 106 ft.; h_a = 136 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	7.9	N.	27	NW.	0	11	6	7	8	7	9	8	4	2	3	9	19	10	5	0	0	1	3	0	17	0	0
February	10.6	SW.	38	W.	0	6	1	4	3	14	14	8	8	0	9	6	14	12	9	4	0	1	5	0	17	0	0
March	9.8	NW.	35	SW.	0	13	5	7	4	9	8	12	4	0	8	9	14	14	11	7	1	1	1	0	21	2	0
April	9.9	S.	39	W.	0	3	5	4	11	21	7	6	3	0	11	15	4	6	3	0	0	1	0	0	1	3	0
May	7.1	S.	36	W.	0	6	5	2	15	12	6	10	6	0	12	8	11	15	12	0	1	0	0	5	0	10	0
June	6.7	S.	32	W.	0	10	5	2	3	18	8	5	8	1	9	12	9	10	8	0	0	0	0	5	0	8	0
July	7.7	S.	45	W.	1	10	4	1	11	21	8	3	4	0	10	12	9	11	11	0	0	0	0	14	0	6	0
August	6.1	NW.	37	NW.	0	14	5	2	9	13	2	4	12	1	20	8	3	8	7	0	0	0	0	14	0	8	0
September	6.9	S.	36	SW.	0	10	7	5	8	9	10	2	6	3	11	7	12	11	7	0	0	1	0	9	0	4	0
October	6.5	N.	31	SW.	0	20	1	2	8	7	10	3	10	1	18	6	7	7	5	0	0	0	0	0	0	0	0
November	8.2	S.	39	SE.	0	4	3	3	14	16	4	7	8	1	6	5	19	11	10	0	0	0	2	0	5	0	0
December	8.7	S.	27	SW.	0	9	4	4	10	15	8	5	7	0	9	9	13	5	3	0	0	1	2	0	16	0	0
Year	8.0	S.	45	W.	1	116	51	43	104	162	94	73	80	9	126	106	134	120	91	11	2	6	13	47	77	41	0

LYNCHBURG, VA.

[H = 685 ft.; h_1 = 83 ft.; h_r = 76 ft.; h_a = 88 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	4.0	SW.	25	NW.	0	2	13	6	2	4	17	6	10	2	10	10	11	7	5	0	0	0	4	0	20	0	0
February	6.5	NW.	27	SW.	0	3	11	1	4	4	17	7	11	0	11	8	10	11	11	2	1	0	3	0	13	1	0
March	6.6	NW.	30	NW.	0	1	9	3	3	5	14	5	22	0	10	11	10	12	10	3	0	0	0	0	16	1	0
April	4.9	NW.	34	NW.	0	3	9	6	8	7	8	3	10	6	12	10	8	6	4	1	0	0	0	3	2	0	0
May	3.7	NE.	27	NW.	0	1	11	9	5	11	10	8	5	2	8	11	12	14	9	0	0	0	0	6	0	5	0
June	3.2	SW.	19	NW.	0	2	9	5	9	6	9	3	10	7	8	10	12	18	16	0	0	0	0	1	0	4	0
July	3.8	SW.	30	NW.	0	0	4	9	3	6	24	4	7	5	8	12	11	19	12	0	0	0	0	6	0	7	0
August	2.8	NE.	26	N.	0	5	18	2	1	4	6	3	12	11	14	15	2	9	7	0	0	0	0	14	0	4	0
September	3.3	E.	34	NW.	0	3	9	15	2	2	7	1	6	15	12	8	10	16	7	0	0	0	0	3	0	2	0
October	3.8	NW.	24	NW.	0	3	10	5	2	6	9	3	14	10	17	5	9	6	5	0	0	1	0	0	1	0	0
November	3.9	SW.	27	NW.	0	0	8	6	3	6	14	3	8	12	11	8	11	10	9	1	0	2	0	0	2	0	0
December	4.3	SW.	28	NW.	0	2	8	0	2	5	15	6	17	7	17	8	6	3	1	0	0	0	2	0	22	0	0
Year	4.2	SW.	34	NW.	0	25	119	67	44	66	150	52	132	77	138	116	112	125	96	7	1	3	9	33	76	24	0

MARQUETTE, MICH.

[H = 734 ft.; h_1 = 67 ft.; h_r = 58 ft.; h_a = 95 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.3	NW.	40	SW.	1	2	3	0	11	6	3	12	25	0	3	4	24	21	12	19	0	0	25	0	31	0	1
February	10.6	NW.	46	S.	1	5	5	0	3	10	3	12	19	1	3	10	16	17	11	16	0	0	18	0	26	0	0
March	12.8	NW.	52	S.	2	7	6	0	5	4	10	6	24	0	3	10	18	20	11	19	0	0	19	0	29	0	2
April	10.7	NW.	36	W.	0	2	6	3	15	7	5	5	16	1	3	10	17	19	14	5	2	4	5	0	9	5	0
May	9.8	NW.	52	SE.	1	6	7	3	11	11	7	1	16	0	5	15	11	13	9	0	0	2	0	3	0	3	3
June	7.7	NW.	34	NW.	0	5	3	2	13	6	5	6	15	5	11	14	5	13	9	0	0	2	0	0	0	3	1
July	8.3	NW.	27	NW.	0	8	11	3	2	3	10	11	14	0	7	15	9	12	7	0	0	0	0	1	0	3	0
August	9.3	NW.	45	S.	2	7	10	2	5	8	7	7	16	0	11	11	9	13	7	0	0	3	0	1	0	5	0
September	11.8	NW.	43	S.	1	6	5	1	6	8	13	7	14	0	3	10	17	8	5	0	0	0	0	0	0	0	2
October	9.9	NW.	37	S.	0	4	8	2	7	10	10	4	17	0	5	10	16	15	11	7	0	0	0	0	9	0	0
November	11.4	W.	44	S.	3	5	1	3	2	11	10	14	14	0	3	4	23	19	10	18	0	1	19	0	22	0	0
December	9.9	W.	42	SW.	1	6	2	5	4	8	6	17	14	0	5	9	17	12	8	12	0	1	19	0	28	0	0
Year	10.2	NW.	52	S.	12	63	67	24	84	92	89	102	204	7	62	122	182	182	114	96	2	13	96	5	154	19	9

MEMPHIS, TENN.

[H = 399 ft.; h_1 = 140 ft.; h_r = 134 ft.; h_a = 154 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.3	NE.	30	S.	0	7	12	7	7	10	4	5	10	0	7	8	16	15	10	1	0	2	0	0	9	1	0
February	11.1	N.	38	W.	0	7	5	9	9	6	5	8	9	0	14	8	7	8	7	1	0	2	0	0	7	1	0
March	12.1	NE.	36	W.	0	8	17	5	11	4	5	4	8	0	8	9	14	14	11	2	0	2	0	0	5	0	0
April	10.5	SE.	44	SE.	2	1	3	12	26	5	6	5	2	0	6	19	5	5	5	0	1	0	0	0	6	0	6
May	8.6	S.	42	SW.	1	0	11	7	12	22	2	4	4	0	14	14	3	8	6	0	0	0	0	4	0	5	0
June	7.9	SE.	39	W.	0	7	8	7	10	8	4	5	11	0	11	13	6	9	7	0	0	0	0	6	0	7	0
July	8.5	S.	26	SE.	0	5	10	4	5	24	6	2	5	1	13	16	2	5	4	0	0	0	0	16	0	4	0
August	7.5	N.	42	W.	1	14	11	4	4	18	3	4	4	0	17	13	1	9	6	0	0	0	0	21	0	5	0
September	8.4	N.	38	NW.	0	14	7	6	9	13	6	2	3	0	17	6	7	5	5	0	0	0	0	12	0	2	0
October	8.2	NW.	36	SW.	0	17	6	8	4	8	7	5	7	0	12	13	6	5	4	0	0	1	0	0	0	1	0
November	11.5	SE.	38	SE.	0	13	5	8	22	5	1	3	8	0	9	7	14	8	7	0	0	1	1	0	4	2	0
December	9.3	S.	30	W.	0	8	9	7	8	15	7	2	6	0	18	6	7	4	2	0	0	1	0	0	8	0	0
Year	9.4	SE.	44	SE.	4	101	104	79	127	138	56	49	77	1	146	132	88	95	74	4	1	9	1	59	33	34	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

MILES CITY, MONT.

[λ=46° 25′ N.; φ=105° 49′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	27.49	28.09	27.00	9.0	14.3	22.8	1.7	12.2	51	—25	3	8	76	76	.062	.075	0.53	0.20	5.7	4.5	5.5
February	27.43	27.86	26.94	21.6	32.8	39.6	17.4	28.5	68	— 2	16	25	76	73	.093	.142	.51	.36	4.9	5.4	5.0
March	27.45	27.94	26.63	19.2	31.9	36.3	15.7	26.0	74	—15	14	22	78	68	.093	.128	.28	.09	6.2	6.4	6.1
April	27.36	27.88	26.84	34.6	52.7	55.7	31.4	43.6	79	19	28	32	75	50	.155	.179	1.26	.64	5.6	6.5	5.4
May	27.33	27.62	26.96	47.4	62.7	67.3	43.1	55.2	78	32	40	40	75	46	.247	.257	2.92	1.11	6.3	6.4	6.0
June	27.42	27.76	26.98	58.8	78.8	82.6	53.3	68.0	98	41	51	46	76	34	.377	.321	1.86	1.05	3.1	4.8	3.7
July	27.49	27.81	27.19	62.8	81.3	85.7	58.5	72.1	98	44	54	51	75	38	.428	.387	1.29	.45	4.9	3.8	4.1
August	27.47	27.74	27.20	58.3	81.7	84.9	54.5	69.7	98	42	46	46	66	30	.323	.320	.33	.20	3.9	4.1	3.5
September	27.50	27.79	27.05	46.1	64.4	68.5	42.0	55.2	90	28	38	37	74	41	.235	.232	.66	.37	5.3	5.0	4.6
October	27.49	27.90	27.12	36.1	53.6	59.6	32.3	46.0	86	16	27	30	71	43	.151	.165	.62	.61	3.0	2.8	3.5
November	27.52	28.06	26.89	10.6	15.6	19.8	5.6	12.7	71	—25	5	12	77	82	.067	.092	1.37	.47	6.7	5.7	7.8
December	27.46	28.03	26.98	27.0	34.3	40.3	22.5	31.4	55	—11	22	28	78	79	.120	.161	.09	.06	4.1	3.8	5.4
Year	27.45	28.09	26.63	36.0	50.3	55.3	31.5	43.4	98	—25	29	31	75	55	.196	.205	11.72	1.11	5.0	4.9	5.0

MILWAUKEE, WIS.

[λ=43° 2′ N.; φ=87° 54′ W.; gravity corr., 0.00.]

January	29.40	29.83	28.86	22.2	26.6	29.9	19.3	24.6	51	—12	18	22	84	82	.113	.126	1.22	0.71	6.5	6.2	6.8
February	29.20	29.82	28.62	20.8	26.0	31.8	17.8	24.8	58	— 8	17	22	83	85	.101	.128	1.36	.67	5.8	4.9	5.8
March	29.32	29.82	28.57	24.6	30.8	34.9	22.5	28.7	53	— 2	20	27	82	85	.114	.151	2.82	1.41	4.8	5.2	5.1
April	29.30	29.77	28.79	43.5	49.8	56.6	39.4	48.0	85	14	39	42	85	76	.260	.290	3.85	1.24	4.5	5.3	5.6
May	29.21	29.54	28.84	58.6	63.2	71.6	52.6	62.1	90	45	52	52	80	68	.396	.392	3.31	.60	3.6	5.5	4.9
June	29.27	29.56	28.95	62.0	68.5	73.5	57.4	65.4	89	48	56	55	81	65	.457	.454	2.03	.96	4.9	5.4	4.9
July	29.31	29.50	29.06	66.6	72.7	78.5	62.6	70.6	94	50	59	58	77	63	.506	.499	2.64	1.60	4.7	5.9	6.4
August	29.31	29.70	28.97	66.6	72.9	80.3	62.8	71.6	98	51	60	62	78	69	.528	.567	1.77	.65	4.8	4.5	5.7
September	29.31	29.64	28.74	53.5	59.5	65.6	50.8	58.2	86	38	49	52	85	78	.361	.407	5.72	2.56	5.6	5.9	7.2
October	29.33	29.67	28.78	41.7	48.2	53.7	39.9	46.8	74	26	38	43	87	82	.241	.293	1.02	.51	4.6	3.4	4.9
November	29.36	29.90	28.75	32.3	36.4	43.2	28.4	35.8	69	2	28	33	84	86	.178	.210	2.48	1.46	6.2	6.6	7.0
December	29.42	29.91	28.87	28.2	31.6	35.7	25.2	30.4	55	4	23	27	80	82	.131	.154	.76	.28	7.0	6.6	7.5
Year	29.31	29.91	28.57	43.4	48.8	54.6	39.9	47.2	98	—12	38	41	82	77	.282	.306	28.98	2.56	5.2	5.4	6.0

MINNEAPOLIS, MINN.

[λ=44° 59′ N.; φ=93° 18′ W.; gravity corr., 0.00.]

January					18.6	25.4	8.1	16.8	45	—18							0.67	0.18			
February					24.8	31.5	13.1	22.3	64	—13							.14	.07			
March					23.8	35.5	17.0	26.2	58	— 5							2.70	1.08			
April					51.1	57.2	39.3	48.2	81	15							5.12	.80			
May					67.3	73.1	54.8	64.0	89	41							3.93	.89			
June					73.5	79.3	58.6	69.0	90	46							2.69	1.18			
July					76.1	82.1	61.3	71.7	94	52							1.30	.84			
August					75.4	82.2	60.0	71.1	99	47							3.51	.98			
September					61.2	67.6	48.1	57.8	82	34							2.58	1.52			
October					47.3	55.3	37.3	46.3	76	21							3.55	1.01			
November					22.7	29.9	15.3	22.6	52	—10							3.80	2.01			
December					25.9	30.9	17.7	24.3	48	— 9							.57	.17			
Year					47.7	54.2	35.9	45.0	99	—18							30.65	2.01			

MOBILE, ALA.

[λ=30° 41′ N.; φ=88° 2′ W.; gravity corr., —0.04.]

January	30.11	30.60	29.55	44.0	50.7	56.8	42.0	49.4	71	22	41	44	91	80	.282	.310	4.16	2.16	7.2	5.6	7.1
February	29.99	30.46	29.18	47.2	54.7	62.1	44.5	53.3	72	28	42	45	84	72	.298	.322	7.70	3.14	5.2	3.6	5.8
March	30.04	30.40	29.59	52.1	59.1	65.2	49.6	57.4	75	34	48	50	86	76	.363	.400	7.59	5.54	5.8	6.4	6.5
April	30.10	30.36	29.84	64.3	70.1	76.0	61.6	68.8	83	41	60	61	86	74	.537	.561	2.20	1.15	5.1	5.4	5.8
May	29.99	30.20	29.79	73.6	77.9	84.1	69.0	76.6	93	63	68	67	83	70	.683	.667	1.96	.81	4.5	5.6	5.1
June	29.94	30.24	29.74	75.7	80.1	86.3	71.5	78.9	94	64	70	70	82	72	.736	.736	7.18	2.27	5.4	6.0	5.8
July	30.04	30.20	29.65	77.5	81.6	88.8	74.1	81.4	99	69	72	72	85	75	.798	.797	12.30	3.28	5.6	7.5	5.4
August	30.00	30.11	29.90	77.4	82.1	90.7	74.2	82.4	97	69	72	72	85	74	.794	.800	4.05	1.56	5.0	6.6	5.4
September	29.95	30.14	29.78	71.4	78.0	86.2	68.3	77.2	92	49	66	67	84	71	.664	.685	2.52	1.34	3.7	3.5	4.0
October	29.99	30.17	29.67	61.0	69.5	76.6	59.1	67.8	89	45	55	59	82	71	.454	.520	4.31	1.90	6.4	4.3	5.7
November	30.11	30.33	29.77	56.9	63.5	70.2	53.9	62.0	80	33	54	56	89	78	.446	.483	2.86	1.38	5.8	4.9	5.8
December	30.17	30.57	29.72	44.4	53.7	60.5	41.9	51.2	76	31	40	43	86	69	.269	.295	3.56	1.41	5.1	2.6	4.3
Year	30.04	30.60	29.18	62.1	68.4	75.3	59.1	67.2	99	22	57	59	85	74	.527	.548	60.39	5.54	5.4	5.2	5.6

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

MILES CITY, MONT.

[H = 2,372 ft.; h_t = 41 ft.; h_r = 34 ft.; h_a = 49 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	6.1	NE.	26	S.	0	6	15	2	4	9	3	8	7	8	9	12	10	9	5	9	0	0	20	0	30	0	0
February	7.5	S.	46	W.	1	8	3	2	4	14	4	7	11	5	11	10	8	5	2	5	0	0	8	0	27	0	0
March	8.1	N.	32	W.	0	15	11	4	3	5	3	6	14	1	7	13	11	9	3	5	0	0	13	0	27	1	2
April	8.9	NW.	38	NW.	0	8	7	5	6	6	3	10	14	1	10	11	9	8	7	5	0	0	3	0	15	2	0
May	9.0	N.	38	W.	0	14	4	10	4	2	7	7	9	5	7	11	13	13	12	0	0	0	0	0	1	6	1
June	7.5	E.	39	W.	0	6	3	11	8	7	3	5	11	6	17	8	5	8	6	0	0	0	0	8	0	9	0
July	6.2	N.	36	NW.	0	14	10	10	8	4	1	3	8	4	15	9	7	8	7	0	0	0	0	12	0	7	0
August	7.2	NW.	34	NW.	0	10	8	7	1	5	5	9	14	3	20	4	7	3	2	0	0	0	0	5	0	4	0
September	6.3	NW.	38	NW.	0	10	6	3	3	6	8	8	12	4	16	3	11	10	4	0	0	0	0	0	3	0	0
October	5.4	N.	24	NE.	0	12	7	4	5	10	5	3	5	11	20	6	5	2	1	0	0	0	0	0	14	0	1
November	7.0	NW.	30	NW.	0	8	14	3	5	5	2	3	17	3	2	11	17	13	8	13	0	0	22	0	29	0	0
December	5.1	SW.	24	SE.	0	4	5	3	9	8	13	10	2	8	10	12	9	3	1	2	0	0	4	0	27	0	0
Year	7.0	NW.	46	W.	1	115	93	64	60	81	57	79	124	59	144	110	112	91	58	39	0	0	70	25	173	29	4

MILWAUKEE, WIS.

[H = 671 ft.; h_t = 106 ft.; h_r = 100 ft.; h_a = 149 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.8	W.	38	W.	0	8	10	1	7	6	10	10	10	0	7	7	17	8	7	5	0	2	15	0	28	0	0
February	12.6	W.	37	W.	0	8	6	1	1	5	8	21	8	0	9	8	12	9	6	7	0	0	14	0	25	0	0
March	12.4	NW.	35	W.	0	12	4	3	9	5	10	9	10	0	11	11	9	9	8	5	2	0	13	0	26	1	0
April	10.9	SE.	37	SW.	0	8	6	9	12	5	9	2	9	0	11	6	13	15	13	0	1	3	1	0	8	5	0
May	10.8	SW.	49	SE.	2	2	9	8	11	4	16	6	6	0	10	16	5	11	9	0	0	0	0	0	0	6	0
June	7.7	E.	30	N.	0	6	15	12	9	4	4	5	5	0	11	8	11	9	8	0	0	1	0	0	0	5	0
July	8.1	NE.	22	NE.	0	7	10	7	9	4	10	5	8	2	9	6	16	12	7	0	0	0	0	3	0	4	0
August	8.8	SW.	52	W.	1	9	2	4	8	7	14	7	11	0	9	13	9	9	7	0	0	0	0	5	0	8	0
September	9.7	N.	31	NW.	0	17	7	5	3	5	10	4	9	0	3	13	14	18	12	0	0	2	0	0	0	3	0
October	9.4	N.	32	SW.	0	9	7	2	10	4	10	7	13	0	12	9	10	6	4	2	0	1	0	0	7	1	0
November	12.2	W.	36	SW.	0	6	3	4	2	11	9	14	11	0	8	3	19	12	7	4	0	1	6	0	19	2	0
December	8.9	SW.	30	W.	0	10	5	1	6	3	17	10	10	0	4	8	19	11	6	7	0	1	9	0	22	0	0
Year	10.2	SW.	52	W.	3	102	84	57	87	63	127	100	110	2	104	108	154	129	94	30	3	11	58	8	135	35	0

MINNEAPOLIS, MINN.

[H = — ft.; h_t = 99 ft.; h_r = 95 ft.; h_a = 208 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.0	NW.	31	NW.	0	....	....	....	....	....	....	....	....	....	8	11	12	11	5	9	0	0	21	0	31	0	0
February	10.4	NW.	54	NW.	2	....	....	....	....	....	....	....	....	....	7	11	11	5	2	5	0	0	15	0	27	0	0
March	11.1	NW.	42	NW.	1	....	....	....	....	....	....	....	....	....	8	13	10	10	7	6	0	0	11	0	27	2	0
April	11.1	E.	42	.....	1	....	....	....	....	....	....	....	....	....	8	8	14	17	15	3	1	0	2	0	8	8	1
May	12.6	S.	43	NW.	1	....	....	....	....	....	....	....	....	....	4	20	7	16	10	0	0	0	0	0	0	5	0
June	10.5	S.	39	NW.	0	....	....	....	....	....	....	....	....	....	9	18	3	9	7	0	0	0	0	0	0	7	0
July	9.9	NW.	32	NW.	0	....	....	....	....	....	....	....	....	....	8	16	7	7	5	0	0	0	0	2	0	5	0
August	10.6	SW.	66	N.	1	....	....	....	....	....	....	....	....	....	7	21	3	9	9	0	1	0	0	5	0	7	3
September	12.2	S.	40	SW.	1	....	....	....	....	....	....	....	....	....	7	13	10	9	7	0	0	0	0	0	0	2	0
October	11.0	NW.	34	S.	0	....	....	....	....	....	....	....	....	....	15	5	11	10	10	0	0	0	0	0	9	1	0
November	12.0	NW.	36	W.	0	....	....	....	....	....	....	....	....	....	4	10	16	12	6	9	0	1	14	0	29	2	0
December	9.9	S.	30	SE.	0	....	....	....	....	....	....	....	....	....	3	9	19	6	5	8	0	1	17	0	29	0	0
Year	10.9	NW.	66	N.	7	....	....	....	....	....	....	....	....	....	88	155	123	121	88	40	2	2	80	7	160	39	4

MOBILE, ALA.

[H = 57 ft.; h_t = 88 ft.; h_r = 78 ft.; h_a = 96 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.9	NW.	30	NW.	0	17	6	0	7	7	3	3	17	2	6	6	19	9	7	0	0	7	0	0	4	1	0
February	9.2	SW.	36	NE.	0	10	4	1	6	10	12	5	9	1	10	4	15	11	9	0	1	1	0	0	2	5	0
March	8.7	S.	31	NW.	0	9	8	3	9	20	2	3	8	0	6	12	13	9	8	0	0	4	0	0	0	3	0
April	8.7	S.	34	NW.	0	6	3	4	15	18	8	0	5	1	7	12	11	4	4	0	0	4	0	0	0	4	0
May	7.3	S.	34	N.	0	12	7	1	4	26	6	2	4	0	8	15	8	6	5	0	0	1	0	1	0	9	0
June	7.0	SE.	33	NW.	0	11	3	3	11	9	11	1	8	3	9	10	11	16	14	0	0	0	0	6	0	11	0
July	7.0	SW.	36	NE.	0	7	9	6	2	11	11	10	6	0	11	9	11	14	13	0	0	0	0	12	0	12	0
August	6.9	SW.	37	SE.	0	10	7	2	4	7	16	6	9	1	9	17	5	15	11	0	0	0	0	19	0	18	0
September	6.3	N.	26	NE.	0	24	3	5	5	5	10	4	2	2	16	7	7	5	4	0	0	0	0	4	0	4	0
October	6.5	N.	32	S.	0	26	3	5	4	9	5	2	8	0	11	6	14	7	5	0	0	0	0	0	0	5	0
November	7.9	N.	34	N.	0	16	11	3	12	10	0	2	6	0	9	10	11	12	10	0	0	0	0	0	0	2	0
December	7.0	N.	34	SE.	0	28	6	2	9	7	1	2	7	0	16	6	9	9	8	0	1	0	0	0	3	1	0
Year	7.4	N.	37	SE.	0	176	70	35	88	139	85	40	89	10	118	114	134	117	98	0	2	17	0	42	9	75	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

MONTGOMERY, ALA.

[λ = 32° 23′ N.; φ = 86° 18′ W.; gravity corr., −0.03.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.94	30.46	29.40	40.9	48.8	53.9	38.0	46.0	73	19	37	42	87	77	.239	.275	6.10	2.62	6.1	4.9	6.0
February	29.80	30.27	28.96	43.8	54.8	60.3	40.7	50.5	74	22	38	44	81	68	.256	.301	6.03	2.61	5.3	4.2	4.8
March	29.86	30.29	29.34	47.7	59.0	65.3	45.5	55.4	87	32	42	48	81	69	.289	.361	4.58	1.83	4.8	5.1	5.6
April	29.92	30.18	29.65	62.6	74.8	81.0	59.4	70.2	90	40	56	59	79	59	.464	.511	4.17	1.83	4.7	3.9	3.9
May	29.83	30.06	29.65	70.9	80.3	87.5	66.6	77.0	95	61	65	66	81	63	.611	.635	3.12	1.54	3.6	3.8	3.2
June	29.78	30.07	29.54	73.5	81.0	86.8	69.7	78.2	96	62	67	69	81	69	.673	.714	6.10	2.62	5.3	4.8	5.3
July	29.88	30.05	29.59	76.3	83.3	90.6	72.6	81.6	101	66	72	73	86	73	.779	.812	6.46	2.11	5.6	4.7	4.4
August	29.83	29.96	29.73	76.4	85.3	93.3	73.3	83.3	99	68	70	72	81	67	.740	.804	2.31	1.26	3.1	5.4	3.9
September	29.79	30.08	29.58	69.6	83.0	89.5	66.4	78.0	98	50	63	63	79	52	.587	.599	1.16	.59	3.0	2.4	2.5
October	29.82	30.02	29.44	57.7	70.0	76.3	55.6	66.0	86	41	51	51	80	54	.393	.399	1.02	.63	4.3	4.2	4.5
November	29.96	30.25	29.57	53.1	62.4	69.4	49.5	59.4	85	32	50	51	89	68	.391	.398	2.64	.55	5.2	3.0	4.6
December	30.01	30.43	29.56	41.5	52.5	58.4	39.0	48.7	77	24	36	40	82	65	.229	.266	2.13	1.26	4.3	3.0	3.7
Year	29.87	30.46	28.96	59.5	69.6	76.0	56.4	66.2	101	19	54	56	82	65	.471	.506	45.82	2.62	4.6	4.1	4.4

MOORHEAD, MINN.

[λ = 46° 52′ N.; φ = 96° 44′ W.; gravity corr., 0.00.]

January	29.11	29.65	28.43	3.9	8.3	13.7	−2.8	5.4	43	−27	1	5	85	85	.052	.068	0.74	0.28	7.1	6.8	7.3
February	28.93	29.56	28.27	8.9	16.5	22.9	4.5	13.7	59	−19	5	12	84	80	.066	.085	.66	.51	5.5	4.6	5.5
March	a29.02	a29.56	a28.11	b9.1	c20.0	25.2	3.5	14.4	48	−28	b5	c15	b82	c80	b.075	c.096	1.48	.40	b6.4	c5.7	6.2
April	28.91	29.51	28.42	36.2	45.3	50.2	33.7	42.0	76	14	31	35	82	69	.192	.218	4.48	1.70	7.6	7.2	6.9
May	28.80	29.17	28.44	52.8	65.0	68.9	48.7	58.8	88	36	48	50	83	61	.338	.381	4.20	1.18	6.5	6.7	6.1
June	28.92	29.24	28.39	60.3	72.5	76.7	54.9	65.8	93	46	55	55	82	57	.434	.452	2.61	.70	4.9	4.1	4.5
July	28.99	29.23	28.67	59.8	73.2	78.9	55.3	67.1	94	45	55	56	84	57	.439	.471	1.30	.40	4.9	5.2	4.8
August	28.96	29.35	28.53	56.1	73.6	79.1	52.5	65.8	94	34	51	50	83	44	.384	.377	2.26	1.02	3.4	3.3	3.4
September	28.97	29.36	28.36	44.2	53.6	65.7	41.9	53.8	95	27	40	43	88	59	.264	.293	3.02	.90	5.3	5.2	5.2
October	28.99	29.42	28.42	32.7	44.3	51.9	30.3	41.1	79	15	29	32	85	64	.161	.185	2.23	.96	5.8	4.9	5.8
November	29.07	29.66	28.40	8.7	11.1	17.6	2.7	10.2	32	−26	6	8	87	84	.065	.071	3.09	1.02	8.0	6.8	7.2
December	29.02	29.67	28.63	12.1	16.7	23.1	6.1	14.6	41	−27	9	13	86	84	.073	.086	.73	.48	5.9	5.6	6.3
Year	28.97	29.67	23.11	32.1	42.1	47.8	27.6	37.7	95	−28	28	31	84	69	.212	.232	26.80	1.70	5.9	5.5	5.8

a For 23½ days. b For 24 days. c For 23 days.

NANTUCKET, MASS.

[λ = 41° 17′ N.; φ = 70° 6′ W.; gravity corr., −0.01.]

January	30.12	30.47	29.69	29.6	30.0	33.5	25.3	29.4	50	3	21	22	71	73	.123	.132	1.57	0.50	5.6	5.0	6.4
February	29.85	30.40	28.91	30.4	32.8	37.4	24.8	31.1	52	−1	24	26	77	75	.140	.153	2.67	.85	5.7	4.9	6.1
March	29.89	30.50	29.08	31.9	32.9	38.8	26.9	32.8	52	18	24	27	74	80	.140	.155	5.97	1.50	5.8	4.1	7.1
April	30.10	30.45	29.49	43.2	41.1	48.7	36.9	42.8	70	25	36	36	76	82	.221	.217	.62	.28	4.2	4.1	6.0
May	30.03	30.38	29.62	55.0	52.3	61.0	47.4	54.2	75	38	49	48	81	86	.353	.342	2.35	1.16	3.5	4.8	4.3
June	29.97	30.35	29.49	62.1	58.8	67.4	55.1	61.2	79	50	56	55	81	89	.454	.442	2.43	.66	3.7	4.4	4.6
July	30.03	30.39	29.69	68.2	65.8	73.5	62.7	68.1	82	58	64	63	87	91	.599	.577	4.12	2.30	5.3	2.7	5.4
August	30.03	30.29	29.82	68.2	65.8	74.2	62.3	68.2	86	54	63	66	84	91	.589	.588	1.88	.50	4.5	3.4	4.8
September	30.03	30.41	29.35	61.8	60.8	66.6	57.0	61.8	76	47	56	56	83	86	.465	.469	2.06	.74	4.1	3.3	5.7
October	30.01	30.54	29.50	51.8	52.1	55.5	47.5	51.5	68	39	47	48	84	87	.333	.345	5.03	2.84	4.9	5.4	5.8
November	30.18	30.76	29.72	48.7	48.2	54.0	43.0	48.5	62	31	44	44	85	85	.300	.300	2.29	.97	5.8	4.1	5.4
December	30.11	30.89	29.48	34.1	34.7	40.1	30.1	35.1	54	14	30	30	84	82	.173	.173	2.68	1.02	5.6	2.9	4.2
Year	30.03	30.89	28.91	48.8	47.9	54.2	43.2	48.7	86	−1	43	43	81	84	.324	.324	33.17	2.84	4.9	4.1	5.5

NARRAGANSETT PIER, R. I.

[λ = 41° 19′ N.; φ = 71° 17′ W.; gravity corr., —.]

January						32.4	17.6	25.0	45	−11							1.59	0.94			
February						36.9	20.8	28.8	50	−12							4.55	1.35			
March						39.7	23.5	31.6	61	9							4.53	1.27			
April						54.1	37.1	45.6	79	24							1.38	.66			
May						67.0	48.5	57.8	92	33							3.35	1.12			
June						71.8	55.3	63.6	85	46							3.36	1.07			
July						78.0	62.8	70.4	87	51							2.15	.50			
August						77.7	62.4	70.0	89	47							3.97	1.65			
September						68.3	54.6	61.4	76	35							6.30	1.85			
October						55.9	42.6	49.2	69	28							3.29	1.53			
November						54.4	39.0	46.7	66	20							2.62	.83			
December						38.8	21.0	29.9	53	0							1.56	.55			
Year						56.2	40.4	48.3	92	−12							38.65	1.85			

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

MONTGOMERY, ALA.

[H = 221 ft.; h_t = 100 ft.; h_r = 70 ft.; h_a = 107 ft.]

Month.	Wind. By self registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	6.4	NW.	25	SE.	0	6	8	8	9	5	4	8	13	1	9	8	14	8	6	0	0	2	0	0	6	1	0
February	8.2	W.	36	W.	0	3	5	7	6	9	7	11	10	0	14	5	10	9	8	0	0	1	0	0	4	1	0
March	7.9	NE.	41	NW.	1	7	11	8	9	7	10	0	10	0	8	10	13	10	9	0	0	0	0	0	2	2	0
April	6.5	SW.	32	NW.	0	1	10	8	10	4	15	7	5	0	15	11	4	6	4	0	0	0	0	1	0	4	0
May	5.3	SW.	24	SW.	0	4	8	4	13	8	19	2	4	0	18	12	1	8	8	0	0	1	0	13	0	9	0
June	5.5	SW.	25	SW.	0	3	8	7	6	4	16	7	9	0	11	9	10	13	13	0	0	0	0	8	0	9	0
July	5.5	SW.	30	SW.	0	0	6	10	11	5	18	9	2	1	15	12	4	11	9	0	0	0	0	20	0	9	0
August	4.8	SW.	30	SW.	0	5	10	9	6	6	12	8	5	1	15	13	3	8	8	0	1	0	0	27	0	10	0
September	5.5	SW.	23	NW.	0	5	11	13	5	0	16	2	7	1	22	7	1	3	3	0	0	0	0	18	0	0	0
October	5.6	NE.	23	SW.	0	9	21	7	5	2	4	7	7	0	13	12	6	6	4	0	0	0	0	0	0	0	0
November	6.6	E.	24	S.	0	7	11	23	8	1	3	3	4	0	14	8	8	9	9	0	0	1	0	0	0	2	0
December	6.2	E.	22	NW.	0	12	9	13	9	4	2	6	7	0	19	3	9	5	5	0	1	1	0	0	6	1	0
Year	6.2	SW.	41	NW.	1	62	118	117	97	55	126	70	83	4	173	110	83	96	86	0	2	6	0	87	18	48	0

MOORHEAD, MINN.

[H = 935 ft.; h_t = 54 ft.; h_r = 44 ft.; h_a = 60 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.9	N.	53	SE.	1	25	1	1	7	9	2	1	16	0	6	5	20	9	5	7	0	0	25	0	31	0	0
February	11.4	NW.	46	NW.	1	16	4	1	2	15	2	2	16	0	11	6	12	8	3	8	0	0	20	0	27	0	0
March	11.4	N.	48	NW.	2	20	0	2	6	16	2	3	12	1	7	12	12	12	8	11	0	1	21	0	28	0	0
April	12.9	N.	51	SE.	3	13	1	7	11	7	4	5	12	0	6	9	15	15	12	2	0	0	1	0	12	5	0
May	12.2	NW.	63	SE.	2	9	1	3	10	13	3	8	15	0	6	15	10	20	17	0	1	0	0	0	0	6	0
June	9.9	S.	36	SE.	0	12	3	2	4	22	0	7	10	0	12	11	7	11	11	0	1	0	0	1	0	4	0
July	8.5	N.	33	S.	0	24	2	4	4	19	1	4	4	0	14	9	8	9	7	0	0	1	0	2	0	6	0
August	8.5	S.	39	W.	0	17	2	0	1	18	3	7	14	0	18	9	4	9	7	0	0	1	0	4	0	6	0
September	10.6	N.	34	SE.	0	20	2	0	4	16	3	3	12	0	11	10	9	13	9	0	0	0	0	1	3	5	0
October	10.5	N.	42	S.	1	20	2	2	1	14	4	2	16	1	8	10	13	7	5	3	0	3	1	0	17	0	0
November	10.0	NW.	36	S.	0	19	3	2	0	4	1	5	25	1	5	7	18	14	10	14	0	0	28	0	30	0	0
December	10.3	S.	41	W.	1	9	3	0	8	18	7	7	10	0	6	12	13	6	4	6	0	4	21	0	31	0	0
Year	10.6	N.	63	SE.	11	204	24	24	58	171	32	54	162	3	110	115	141	133	98	51	2	10	117	8	179	32	0

NANTUCKET, MASS.

[H = 14 ft.; h_t = 43 ft.; h_r = 38 ft.; h_a = 54 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	14.2	NE.	48	SE.	1	16	22	7	7	2	2	3	3	0	5	14	12	13	8	7	0	1	10	0	27	1	0
February	16.3	NW.	48	SW.	1	13	8	4	5	6	5	4	12	1	10	6	13	12	11	6	0	2	5	0	22	1	0
March	16.1	N.	42	SE.	2	16	11	5	3	3	6	8	10	0	7	6	18	17	15	8	0	7	7	0	26	1	0
April	12.3	NE.	40	N.	1	13	10	5	5	4	9	9	5	0	9	9	12	9	3	1	0	6	0	0	4	2	0
May	11.4	SW.	37	NE.	0	4	9	3	6	6	16	15	3	0	15	9	7	10	6	0	0	5	0	0	0	2	0
June	9.8	SW.	35	E.	0	6	0	1	8	6	19	12	8	0	14	8	8	10	8	0	0	7	0	0	0	0	0
July	9.1	SW.	28	N.	0	2	4	2	3	4	30	11	6	0	8	13	10	14	10	0	0	11	0	0	0	2	1
August	7.9	SW.	33	N.	0	10	5	4	7	9	14	9	4	0	14	8	9	9	8	0	0	5	0	0	0	3	0
September	12.5	SW.	55	S.	2	8	9	3	8	9	15	4	4	0	11	7	12	14	11	0	0	10	0	0	0	1	0
October	14.9	NE.	60	NE.	3	8	19	3	1	6	8	6	11	0	11	6	14	17	9	0	0	1	0	0	0	1	1
November	12.1	SW.	42	N.	1	10	5	4	5	7	16	7	6	0	9	10	11	14	12	1	0	2	0	0	2	0	0
December	14.6	NW.	62	NE.	7	14	8	2	1	4	8	7	18	0	15	7	9	11	10	7	0	0	6	0	18	0	1
Year	12.6	SW.	62	NE.	18	120	110	43	59	66	148	95	90	1	128	103	135	150	111	30	0	57	28	0	99	14	3

NARRAGANSETT PIER, R. I.

[H = — ft.; h_t = 10 ft.; h_r = 1 ft.; h_a = 38 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	.....	NW.	....	.....	2	6	5	2	1	0	3	4	10	....	19	1	11	6	6	4	0	0	12	0	30	0	1
February	.....	NW.	....	.....	3	3	4	0	0	2	8	3	9	....	17	1	11	9	8	2	0	0	7	0	24	0	0
March	.....	W.	....	.....	3	1	2	1	3	4	5	8	7	....	14	4	13	13	11	7	0	1	4	0	27	0	0
April	.....	SW.	....	.....	0	2	3	3	3	5	10	0	4	....	22	2	6	7	4	0	0	0	0	0	7	3	0
May	.....	S.	....	.....	0	1	4	1	2	14	6	2	1	....	21	2	8	8	6	0	0	0	0	1	0	5	1
June	.....	SW.	....	.....	1	1	4	2	1	9	10	3	0	....	16	3	11	7	6	0	0	0	0	0	0	1	0
July	.....	S.	....	.....	0	0	1	1	4	12	6	7	0	....	16	4	11	11	10	0	0	4	0	0	0	3	0
August	.....	S.	....	.....	0	0	0	0	2	14	8	7	0	....	20	4	7	8	7	0	1	0	0	0	0	3	0
September	.....	SE.	....	.....	4	3	5	3	7	6	4	3	0	....	13	6	11	12	10	0	0	0	0	0	0	3	0
October	.....	NE.	....	.....	2	2	8	2	2	4	4	3	5	....	15	2	14	9	8	0	0	0	0	0	4	0	0
November	.....	NW.	....	.....	0	0	2	3	5	6	3	1	7	....	14	2	14	9	8	1	0	1	0	0	8	0	0
December	.....	N.	....	.....	2	3	4	1	2	3	5	0	7	....	20	4	7	6	5	2	0	0	8	0	25	0	0
Year	.....	S.	....	.....	17	20	43	19	32	79	72	41	50	....	207	35	124	105	89	16	1	6	31	1	125	18	2

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

NASHVILLE, TENN.

[λ=36° 10′ N.; φ=86° 47′ W.; gravity corr., —0.02.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.59	30.13	29.05	34.4	42.1	46.2	32.9	39.6	63	10	30	32	84	68	.175	.193	1.37	0.55	5.9	5.3	6.3
February	29.44	29.98	28.87	37.0	44.2	50.7	33.0	41.8	74	9	29	32	74	65	.177	.195	3.65	.95	6.8	4.7	5.6
March	29.50	29.98	29.05	40.5	48.6	54.0	36.7	45.4	80	23	33	36	76	62	.207	.229	6.45	1.95	7.7	5.8	6.5
April	29.54	29.81	29.29	59.1	68.9	75.3	54.9	65.1	88	36	50	50	73	54	.389	.391	2.92	.80	3.8	3.5	4.3
May	29.45	29.71	29.24	67.4	77.6	84.5	62.5	73.5	91	55	60	58	78	54	.527	.504	4.05	1.35	4.7	3.0	4.2
June	29.44	29.71	29.13	69.8	77.8	83.3	65.7	74.5	92	56	63	63	80	62	.586	.585	1.82	.72	3.9	4.1	5.2
July	29.51	29.68	29.34	74.2	79.9	87.9	70.3	79.1	98	61	68	70	81	72	.689	.730	7.33	2.04	4.7	5.8	5.5
August	29.49	29.73	29.31	72.5	83.7	89.8	68.8	79.3	97	57	65	65	78	54	.636	.627	1.40	.76	2.8	2.2	2.7
September	29.47	29.78	29.24	63.6	75.6	83.2	60.2	71.7	99	40	56	56	78	52	.473	.460	2.74	1.51	2.9	3.2	3.6
October	29.50	29.70	29.22	50.3	62.6	70.1	48.0	59.0	81	35	44	45	82	55	.304	.317	.98	.77	2.7	2.5	2.9
November	29.63	30.03	29.17	46.3	53.1	60.9	42.6	51.8	75	18	41	41	82	66	.278	.282	5.71	3.37	6.4	4.7	5.4
December	29.65	30.12	29.20	36.3	46.1	52.1	33.7	42.9	69	19	30	32	79	60	.178	.197	1.79	1.05	4.8	3.4	4.1
Year	29.52	30.13	28.87	54.3	63.4	69.8	50.8	60.3	99	9	47	48	79	60	.385	.392	40.21	3.37	4.8	4.0	4.7

NEAHBAY, WASH.

[λ=48° 23′ N.; φ=124° 36′ W.; gravity corr., —.]

January						48.3	35.8	42.0	65	24					25.85	3.93					
February						50.5	38.4	44.4	58	30					17.50	2.40					
March						48.9	35.2	42.0	57	24					7.21	1.40					
April						53.0	36.7	44.8	62	27					7.87	1.47					
May						58.1	41.6	49.8	68	34					4.90	.80					
June						62.9	46.2	54.5	71	38					4.49	1.57					
July						69.0	51.3	60.2	75	46					.08	.08					
August						67.8	50.9	59.4	88	45					.00	.00					
September																					
October																					
November																					
December																					
Year																					

NEW HAVEN, CONN.

[λ=41° 18′ N.; φ=72° 56′ W.; gravity corr., —0.01.]

January	30.05	30.40	29.56	21.5	26.4	31.3	18.7	25.0	45	—8	16	18	78	70	.095	.105	1.82	1.05	5.5	3.9	5.0
February	29.75	30.37	28.64	25.4	30.2	36.6	20.5	28.6	53	—11	19	22	75	70	.113	.129	5.65	1.93	5.6	4.3	5.5
March	29.83	30.42	29.03	28.0	32.3	38.1	23.5	30.8	62	9	20	23	72	69	.119	.134	5.61	2.00	4.7	3.6	5.3
April	30.00	30.40	29.52	46.8	48.2	57.4	39.1	48.2	85	22	36	37	66	66	.228	.240	1.19	.42	3.7	3.6	4.4
May	29.91	30.28	29.57	60.1	61.9	72.6	51.2	61.9	93	38	49	50	69	67	.360	.373	3.67	1.43	4.0	5.5	5.1
June	29.86	30.22	29.40	64.0	66.1	74.1	56.3	65.2	89	50	56	57	77	75	.461	.483	2.96	1.70	4.5	4.9	5.1
July	29.90	30.30	29.54	71.0	72.6	80.4	63.9	72.2	90	55	64	65	81	79	.616	.630	3.86	1.06	4.1	5.5	5.0
August	29.91	30.19	29.62	69.6	71.8	80.0	62.6	71.3	94	50	62	64	78	76	.576	.607	2.57	.82	4.3	3.2	4.1
September	29.92	30.24	29.52	60.7	63.0	71.1	54.7	62.9	84	38	54	57	80	82	.440	.487	3.42	1.27	5.2	4.6	5.4
October	29.92	30.46	29.44	47.3	50.8	57.2	42.4	49.8	75	31	43	40	84	78	.285	.295	2.91	.88	5.5	4.5	6.2
November	30.08	30.68	29.48	43.4	46.3	53.8	38.8	46.3	72	23	36	39	76	76	.230	.256	2.33	.98	6.2	4.9	6.6
December	30.04	30.80	29.39	25.0	31.5	36.9	22.0	29.4	53	—2	18	22	73	65	.110	.125	2.40	1.00	4.0	4.4	4.1
Year	29.93	30.80	28.64	46.9	50.1	57.5	41.1	49.3	94	—11	39	41	76	73	.303	.322	38.39	2.00	4.8	4.4	5.2

NEW ORLEANS, LA.

[λ=29° 58′ N.; φ=90° 4′ W.; gravity corr., —0.04.]

January	30.13	30.62	29.56	47.9	53.2	58.8	45.6	52.2	76	28	44	46	86	77	.306	.330	2.33	0.71	6.1	5.1	5.9
February	30.02	30.42	29.31	50.7	57.9	64.6	47.9	56.2	73	37	46	46	85	67	.333	.327	2.78	1.08	5.2	3.6	4.3
March	30.04	30.42	29.53	54.6	62.9	69.1	53.4	61.2	81	41	51	53	89	71	.398	.428	5.29	2.33	4.9	4.6	5.5
April	30.09	30.36	29.84	65.2	71.6	78.0	63.3	70.6	84	49	61	60	87	70	.562	.546	4.84	2.25	4.7	5.4	5.9
May	29.99	30.18	29.82	74.1	78.8	85.5	70.1	77.8	92	65	69	68	84	69	.707	.680	2.80	.85	2.8	4.7	3.6
June	29.95	30.26	29.76	76.2	80.4	87.3	72.8	80.0	95	69	70	70	83	72	.753	.736	8.23	2.02	4.0	4.7	3.8
July	30.05	30.22	29.79	78.8	83.4	89.8	75.7	82.8	96	70	72	72	81	70	.795	.791	2.92	.94	3.3	5.4	3.5
August	30.02	30.12	29.90	78.8	83.1	90.5	75.6	83.0	96	70	73	72	82	70	.802	.781	3.31	.90	4.5	6.4	3.8
September	29.96	30.11	29.82	74.0	78.6	85.9	71.9	78.9	91	56	69	69	84	73	.728	.719	5.26	3.73	2.7	4.1	3.9
October	29.99	30.17	29.71	64.9	71.0	77.7	63.0	70.4	91	54	58	60	80	71	.505	.537	5.33	2.66	6.1	4.7	6.3
November	30.09	30.29	29.79	60.9	64.9	72.6	57.9	65.2	84	35	57	58	87	81	.501	.529	2.82	1.62	4.7	4.8	6.4
December	30.17	30.55	29.74	48.5	56.6	62.4	46.9	54.6	78	32	44	47	85	71	.305	.338	3.77	1.85	3.6	3.0	5.3
Year	30.04	30.62	29.31	64.6	70.2	76.8	62.0	69.4	96	28	60	60	84	72	.558	.562	49.68	3.73	4.4	4.7	4.8

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

NASHVILLE, TENN.

[H = 545 ft.; h_t = 128 ft.; h_r = 116 ft.; h_a = 134 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		Mi.																								
January	6.5	SE.	28	SE.	0	8	8	1	14	8	5	7	10	1	9	8	14	10	7	1	0	3	2	0	15	0	0
February	8.0	NW.	30	W.	0	5	7	2	7	8	11	4	14	0	11	5	13	12	10	2	0	3	2	0	14	0	0
March	8.7	NW.	36	SE.	0	7	12	4	9	3	5	7	15	0	9	7	15	13	11	3	0	2	0	0	11	6	0
April	8.2	SE.	36	SE.	0	2	3	2	23	12	9	3	6	0	15	10	5	11	10	0	1	0	0	0	0	6	0
May	5.9	SW.	43	SW.	2	4	4	5	13	11	14	4	7	0	12	14	5	12	10	0	0	0	0	4	0	11	0
June	5.9	NW.	29	NW.	0	6	5	2	12	4	13	8	10	0	11	13	6	9	6	0	1	1	0	2	0	9	0
July	5.8	SW.	33	SE.	0	4	6	3	15	10	20	3	1	0	8	14	9	14	13	0	0	1	0	10	0	14	0
August	5.0	NW.	32	NW.	0	16	5	2	4	10	7	5	13	0	20	9	2	4	4	0	0	0	0	17	0	5	0
September	6.1	NW.	30	NW.	0	14	4	1	8	3	7	7	13	3	18	6	6	8	8	0	0	0	0	11	0	3	0
October	6.2	NW.	35	SE.	0	8	8	0	11	6	7	8	10	4	18	9	4	6	5	0	0	0	0	0	0	0	0
November	8.7	SE.	37	SE.	0	6	3	5	19	9	2	2	13	1	12	5	13	8	7	0	0	1	2	0	5	1	0
December	6.5	NW.	30	S.	0	9	5	6	9	9	3	7	11	3	17	5	9	4	4	0	0	5	0	0	13	1	0
Year	6.8	SE.	43	SW.	2	89	70	33	144	93	103	65	123	12	160	105	101	111	95	6	2	16	6	44	58	56	0

NEAHBAY, WASH.

[H = — ft.; h_t = 8 ft.; h_r = 1 ft.; h_a = — ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	.....	SE.	....	.....	....	0	0	9	10	1	6	5	0	0	4	3	24	25	25	5	0	0	2	0	10	0	0
February	.....	W.	....	.....	....	0	1	6	5	5	4	7	0	1	2	7	20	24	24	1	0	0	0	0	4	0	0
March	.....	E.	....	.....	....	0	4	12	3	0	2	9	0	1	7	10	14	13	12	0	0	0	1	0	6	0	0
April	.....	SW.	....	.....	....	0	0	6	6	0	10	8	0	0	3	10	17	17	16	0	0	0	0	0	4	0	0
May	.....	SW.	....	.....	....	0	0	0	6	0	9	10	3	3	5	11	15	18	17	0	0	0	0	0	0	0	0
June	.....	W.	....	.....	....	0	0	1	2	2	10	14	0	1	5	11	14	11	10	0	0	0	0	0	0	0	0
July	.....	SW.	....	.....	....	0	0	2	0	1	14	9	0	1	11	4	12	1	1	0	0	0	0	0	0	0	0
August	.....	SW.	....	.....	....	0	0	4	0	1	7	7	0	2	10	3	8	0	0	0	0	0	0	0	0	0	0
September	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
October	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
November	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
December	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Year	.....	.....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

NEW HAVEN, CONN.

[H = 107 ft.; h_t = 118 ft.; h_r = 110 ft.; h_a = 140 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.5	N.	38	NE.	0	28	6	0	0	0	5	8	15	0	15	5	11	8	5	6	0	0	13	0	30	0	0
February	14.0	N.	54	E.	4	15	8	1	2	1	12	12	7	0	11	8	10	13	12	8	0	3	8	0	25	0	0
March	13.9	NW.	50	NE.	4	9	4	3	1	4	11	14	15	1	13	4	14	16	14	7	0	5	12	0	25	0	0
April	9.3	S.	45	W.	1	8	9	4	9	9	10	3	7	1	14	9	7	7	7	2	0	0	0	0	8	2	0
May	8.4	S.	32	W.	0	8	9	5	5	16	10	7	2	0	10	10	11	11	8	0	0	2	0	2	0	4	0
June	7.7	SW.	35	N.	0	10	1	8	3	11	13	5	9	0	12	7	11	11	10	0	0	4	0	0	0	1	0
July	7.4	SW.	31	NE.	0	10	2	6	3	8	19	4	10	0	14	7	10	14	13	0	0	4	0	0	0	5	0
August	6.7	N.	25	NW.	0	12	6	4	3	9	12	6	10	0	16	7	8	10	10	0	0	2	0	6	0	1	0
September	10.0	N.	39	SE.	0	21	3	3	1	14	7	5	6	0	12	5	13	11	9	0	0	2	0	0	0	2	0
October	9.8	N.	41	NE.	1	23	6	2	2	5	8	8	8	0	9	6	16	13	10	0	0	4	0	0	2	0	0
November	9.5	N.	41	S.	1	17	3	1	3	8	11	9	8	0	7	7	16	10	8	1	0	3	0	0	9	0	0
December	10.2	N.	42	N.	2	21	2	0	1	5	12	11	10	0	16	7	8	6	4	3	0	0	11	0	24	0	0
Year	9.8	N.	54	E.	13	182	59	37	33	90	130	92	107	2	149	82	135	130	110	27	0	29	44	8	123	15	0

NEW ORLEANS, LA.

[H = 54 ft.; h_t = 112 ft.; h_r = 111 ft.; h_a = 120 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	8.7	NW.	30	N.	0	9	11	5	10	7	4	5	11	0	8	10	13	10	8	0	0	2	0	0	2	2	0
February	10.2	SW.	32	W.	0	8	4	5	7	10	11	6	6	1	15	6	8	8	8	0	0	1	0	0	0	2	0
March	10.3	SE.	32	NW.	0	9	11	5	14	10	6	2	4	1	9	11	11	9	7	0	0	4	0	0	0	2	0
April	8.8	SE.	36	SE.	0	3	1	7	31	7	10	1	0	0	10	13	7	5	3	0	0	4	0	0	0	2	0
May	6.8	SE.	25	N.	0	0	3	2	29	19	7	1	1	0	18	11	2	11	9	0	0	0	0	1	0	8	0
June	7.1	SE.	30	SE.	0	8	5	5	18	6	7	6	3	2	17	9	4	17	16	0	0	0	0	4	0	6	0
July	6.8	SE.	35	SE.	0	4	10	2	18	8	13	5	1	1	18	10	3	12	10	0	0	0	0	14	0	3	0
August	6.3	SW.	28	NE.	0	4	12	4	5	6	19	5	6	0	14	14	3	12	10	0	0	0	0	16	0	13	0
September	7.5	SE.	30	N.	0	4	18	6	20	2	1	1	6	2	15	11	4	6	5	0	0	0	0	5	0	4	0
October	7.8	NE.	54	N.	2	7	21	7	9	2	3	3	9	1	9	5	17	9	9	0	0	0	0	1	0	3	0
November	10.5	NE.	32	N.	0	12	17	15	10	2	3	0	1	0	6	10	14	10	7	0	0	2	0	0	0	0	0
December	9.6	N.	24	SW.	0	14	22	2	9	3	4	1	6	1	13	6	12	10	3	0	0	2	0	0	0	1	0
Year	8.4	SE.	54	N.	2	82	136	65	180	82	88	36	54	9	152	116	98	119	95	0	0	15	0	41	2	46	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

NEW YORK CITY, N. Y.

[λ=40° 43′ N.; φ=74° W.; gravity corr., —0.01.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.83	30.17	29.34	25.0	28.2	33.0	22.1	27.6	47	—3	20	21	78	73	.110	.120	1.25	0.93	5.1	4.6	5.5
February	29.54	30.13	28.35	26.9	31.3	38.0	22.4	30.2	56	—6	21	23	78	72	.123	.141	5.50	1.63	6.2	4.6	6.0
March	29.63	30.20	28.78	28.2	33.4	39.5	24.7	32.1	62	13	21	24	73	69	.123	.140	6.13	1.90	5.2	3.3	5.3
April	29.79	30.18	29.32	47.0	50.9	58.5	42.2	50.4	90	23	40	41	77	71	.270	.281	1.24	.40	4.5	4.4	5.1
May	29.70	30.05	29.35	60.1	64.7	72.2	55.3	63.8	91	43	53	54	78	71	.407	.434	2.01	.58	4.6	5.6	5.4
June	29.66	29.97	29.20	63.7	67.1	73.7	59.3	66.5	87	51	58	59	82	78	.489	.518	6.38	2.59	3.5	5.6	5.0
July	29.70	30.07	29.38	70.2	74.2	80.1	66.7	73.4	89	59	66	66	87	78	.645	.657	4.45	1.14	4.9	6.6	4.6
August	29.71	29.99	29.44	69.9	74.3	79.8	66.2	73.0	94	56	64	65	82	75	.611	.639	2.46	.74	3.9	3.8	3.9
September	29.71	30.02	29.37	60.7	65.4	71.7	57.9	64.8	86	43	56	57	84	76	.461	.478	3.04	1.16	5.0	4.1	5.2
October	29.71	30.10	29.26	49.1	52.4	57.7	46.1	51.9	72	36	44	44	82	76	.293	.302	1.71	.76	4.8	5.3	6.4
November	29.86	30.41	29.27	45.7	48.2	54.8	41.3	48.0	70	27	40	41	81	78	.262	.279	2.12	.89	6.2	5.7	6.1
December	29.83	30.56	29.21	28.7	33.2	38.7	25.5	32.1	55	5	22	25	76	72	.129	.142	1.70	.88	4.2	4.5	4.9
Year	29.72	30.56	28.35	47.9	51.9	58.1	44.1	51.2	94	—6	42	43	80	74	.327	.344	37.99	2.59	4.8	4.8	5.3

NORFOLK, VA.

[λ=36° 51′ N.; φ=76° 17′ W.; gravity corr., —0.02.]

January	30.14	30.50	29.59	35.1	38.3	45.5	32.2	38.8	65	14	30	32	80	78	.174	.187	1.89	1.27	4.1	5.1	4.8
February	29.89	30.48	28.80	40.1	42.5	51.7	33.9	42.8	70	11	33	36	75	78	.209	.223	4.39	1.74	5.4	4.4	5.7
March	29.98	30.60	29.00	42.3	46.6	55.2	37.0	46.1	76	28	33	38	70	74	.216	.242	1.67	.46	4.2	3.9	4.4
April	30.10	30.48	29.73	56.2	59.0	69.7	50.1	59.9	95	33	50	52	80	78	.386	.411	1.18	.54	3.5	4.1	4.8
May	30.09	30.30	29.72	67.9	70.5	80.6	62.5	71.6	93	46	62	64	81	80	.560	.598	6.63	1.58	5.3	5.5	6.0
June	29.95	30.20	29.56	72.5	72.8	81.3	66.4	73.8	91	60	66	67	79	81	.643	.662	7.91	2.54	5.1	7.0	6.1
July	30.03	30.32	29.75	76.6	77.9	87.5	71.0	79.2	98	61	72	72	87	83	.803	.789	7.26	1.78	5.6	6.4	5.7
August	30.00	30.23	29.80	76.3	78.1	87.5	70.8	79.2	98	61	70	70	81	77	.740	.749	2.05	.99	3.0	2.7	3.6
September	30.00	30.33	29.59	67.8	70.3	78.7	63.4	71.0	96	48	62	64	83	80	.583	.607	3.47	.89	5.7	2.8	4.6
October	30.01	30.36	29.56	55.8	58.1	66.1	51.9	59.0	77	42	50	50	81	76	.372	.373	2.15	.74	5.4	4.1	5.3
November	30.20	30.62	29.64	52.0	55.5	66.0	47.5	56.8	79	34	47	48	84	77	.342	.353	2.41	1.25	5.0	4.0	5.0
December	30.17	30.81	29.48	37.2	41.3	48.6	33.8	41.2	65	20	32	33	80	74	.188	.200	3.21	1.83	4.1	3.2	4.8
Year	30.04	30.81	28.80	56.6	59.2	68.2	51.7	60.0	98	11	51	52	80	78	.435	.450	44.22	2.54	4.7	4.4	5.1

NORTHFIELD, VT.

[λ=44° 10′ N.; φ=72° 41′ W.; gravity corr., 0.00.]

January	29.20	29.56	28.55	10.0	14.8	20.6	5.8	13.2	39	—22	5	9	80	78	.062	.071	0.87	0.50	7.2	6.6	6.9
February	28.88	29.52	28.05	12.0	18.4	25.8	5.2	15.5	42	—30	8	13	80	78	.073	.090	4.45	1.52	7.7	5.9	6.6
March	28.96	29.63	28.16	17.9	22.3	29.8	10.0	19.9	50	—15	12	16	78	76	.089	.096	6.41	1.68	6.8	5.6	6.8
April	29.16	29.58	28.56	39.0	44.0	53.9	30.3	42.1	81	14	31	36	72	73	.184	.230	.51	.27	4.5	5.1	5.5
May	29.07	29.48	28.74	55.1	59.2	68.8	43.7	56.2	88	29	46	49	74	70	.317	.359	1.44	.30	6.8	5.8	5.6
June	29.04	29.40	28.63	60.2	61.5	72.2	47.6	59.9	86	36	50	51	70	70	.372	.383	1.62	.81	5.8	6.4	6.3
July	29.07	29.43	28.67	65.3	67.9	78.4	55.5	67.0	91	45	57	59	76	75	.485	.513	5.99	2.32	6.2	6.5	6.5
August	29.10	29.40	28.81	61.7	64.5	76.5	51.5	64.0	90	37	57	58	84	81	.473	.506	2.27	.51	5.1	4.5	5.5
September	29.11	29.40	28.54	51.3	55.6	66.6	43.2	54.9	90	29	47	50	86	83	.336	.381	3.48	1.15	6.7	5.1	6.3
October	29.11	29.66	28.64	39.1	42.9	51.2	33.8	42.5	64	20	35	36	85	79	.213	.224	2.42	.79	7.5	6.8	7.4
November	29.20	29.80	28.64	35.5	37.5	46.7	27.5	37.1	69	—3	30	31	81	76	.181	.185	3.55	1.53	8.7	7.0	7.9
December	29.18	29.92	28.48	15.0	18.4	26.8	9.0	17.9	50	—10	10	13	81	77	.079	.086	.81	.64	7.0	5.1	6.2
Year	29.09	29.92	28.05	38.5	42.2	51.4	30.3	40.8	91	—30	32	35	79	76	.239	.260	33.82	2.32	6.6	5.9	6.5

NORTH PLATTE, NEBR.

[λ=41° 8′ N.; φ=100° 45′ W.; gravity corr., —0.01.]

January	27.11	27.69	26.78	21.8	32.6	43.9	18.3	31.1	63	—14	17	21	78	62	.098	.117	0.27	0.14	4.5	4.4	4.9
February	27.05	27.40	26.56	24.6	40.7	50.5	22.7	36.6	74	12	17	23	69	59	.091	.124	.06	.06	2.9	2.8	3.2
March	27.06	27.48	26.32	22.2	35.4	42.2	18.5	30.4	80	—8	17	24	80	64	.106	.139	.87	.34	5.0	5.3	5.4
April	26.95	27.44	26.52	40.8	58.6	63.9	28.3	51.1	84	18	36	40	82	53	.220	.251	3.44	1.68	5.6	4.7	5.0
May	26.96	27.26	26.64	55.1	69.4	73.9	50.9	62.4	89	34	48	50	77	54	.343	.377	1.47	.94	5.9	5.7	5.6
June	27.10	27.41	26.67	59.9	77.3	82.2	56.0	69.1	94	43	56	57	86	51	.448	.472	2.76	1.16	4.5	5.0	4.5
July	27.13	27.32	26.91	64.1	78.8	84.4	60.9	72.6	95	54	60	62	86	58	.520	.563	1.86	1.40	3.8	5.1	4.7
August	27.13	27.35	26.87	61.5	79.0	84.9	59.7	72.3	100	44	55	58	82	53	.445	.493	2.07	.71	3.9	4.3	4.5
September	27.13	27.49	26.77	49.3	66.2	72.7	47.6	60.2	93	30	46	48	89	55	.333	.357	1.84	.56	4.1	4.2	4.6
October	27.11	27.51	26.76	34.6	54.2	64.4	32.5	48.4	88	20	29	32	79	46	.163	.188	1.51	1.30	3.1	3.0	3.4
November	27.12	27.62	26.63	18.9	29.4	38.4	16.0	27.2	78	—13	15	20	82	66	.092	.117	.16	.10	3.4	3.9	4.7
December	27.16	27.68	26.72	25.9	37.0	49.3	23.1	36.2	64	7	21	26	79	64	.112	.140	.21	.20	2.3	3.9	3.9
Year	27.08	27.69	26.32	39.9	54.9	62.6	37.0	49.8	100	—14	35	38	81	56	.248	.278	16.52	1.68	4.1	4.4	4.5

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

NEW YORK CITY, N. Y.

[H = 314 ft.; h_t = 298 ft.; h_r = 258 ft.; h_a = 326 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	14.9	NW.	48	NE.	3	7	15	4	1	2	4	13	16	0	12	8	11	6	4	5	0	1	10	0	28	0	0
February	20.7	W.	65	W.	12	2	11	4	2	4	8	14	13	0	9	8	12	13	11	8	0	5	6	0	25	0	0
March	20.1	NW.	72	NW.	13	4	7	4	3	2	4	14	24	0	12	10	9	17	15	7	0	6	7	0	24	2	0
April	13.8	NW.	52	NW.	4	5	11	5	8	6	5	6	14	0	11	13	6	6	5	2	0	5	0	0	5	3	0
May	12.9	SW.	52	SW.	3	2	8	5	12	5	13	8	9	0	10	12	9	11	9	0	0	5	0	2	0	6	0
June	10.6	NW.	40	NW.	1	0	6	4	4	13	9	8	16	0	10	13	7	11	10	0	0	5	0	0	0	5	0
July	11.8	SW.	50	NW.	3	0	5	3	6	12	18	7	11	0	15	8	8	16	11	0	0	2	0	0	0	11	0
August	10.1	NW.	50	NW.	2	7	4	4	7	9	14	6	11	0	17	11	3	10	7	0	0	1	0	7	0	5	0
September	13.7	NW.	56	SE.	6	3	7	5	4	13	11	2	15	0	11	10	9	9	7	0	0	3	0	0	0	3	0
October	14.2	NW.	45	NW.	2	9	13	4	0	9	5	7	15	0	5	11	15	11	6	0	0	1	0	0	0	0	0
November	14.5	SW.	52	SE.	4	3	7	4	5	5	11	10	15	0	9	6	15	10	7	1	0	6	1	0	5	0	0
December	14.5	SW.	54	N.	3	12	3	3	0	4	16	11	13	0	13	8	10	4	3	2	0	1	7	0	20	0	0
Year	14.3	NW.	72	NW.	56	54	97	49	52	84	118	106	172	0	134	118	114	124	95	25	0	41	31	9	107	35	0

NORFOLK, VA.

[H = 57 ft.; h_t = 88 ft.; h_r = 80 ft.; h_a = 93 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	8.5	N.	42	NW.	2	20	15	2	3	5	8	2	7	0	14	6	11	6	5	0	0	0	3	0	15	0	0
February	12.1	SW.	56	SW.	4	9	4	4	6	7	9	9	10	0	12	5	12	12	10	2	0	3	3	0	10	1	0
March	12.3	NW.	38	SW.	0	8	13	5	6	7	6	3	14	0	14	8	9	8	8	1	0	0	0	0	8	0	0
April	8.9	NE.	35	NW.	0	7	12	8	7	10	8	3	4	1	13	9	8	8	6	0	0	0	0	2	0	1	0
May	8.2	SW.	48	NW.	1	3	12	6	11	5	15	3	6	1	8	9	14	14	11	0	0	0	0	4	0	9	0
June	7.2	SE.	34	NW.	0	7	6	11	13	7	7	6	2	1	6	11	13	15	11	0	1	0	0	1	0	5	0
July	8.7	SW.	30	NW.	0	1	9	5	5	11	25	5	1	0	9	12	10	17	14	0	0	0	0	10	0	8	0
August	6.6	NE.	36	W.	0	6	14	4	12	3	16	3	1	3	19	8	4	6	3	0	0	0	0	12	0	3	0
September	7.8	NE.	40	NW.	1	8	10	9	9	4	10	3	5	2	14	6	10	9	8	0	0	0	0	2	0	2	0
October	8.4	N.	30	NE.	0	15	10	5	8	4	7	2	11	0	14	4	13	8	5	0	0	0	0	0	0	0	0
November	8.8	SW.	42	NW.	1	8	10	2	7	10	14	2	7	0	13	7	10	9	7	0	0	1	0	0	0	0	0
December	8.5	NE.	36	NE.	0	14	13	0	6	3	15	6	5	0	13	10	8	6	6	2	0	3	2	0	15	0	
Year	8.8	SW.	56	SW.	9	106	128	61	93	76	140	47	73	8	149	95	122	118	94	5	1	7	8	31	48	29	0

NORTHFIELD, VT.

[H = 872 ft.; h_t = 15 ft.; h_r = 2 ft.; h_a = 63 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.4	N.	40	SW.	1	27	1	0	0	21	9	2	1	1	5	11	15	13	5	13	0	0	28	0	31	0	4
February	9.3	SE.	36	W.	0	15	4	0	0	16	6	8	9	0	9	5	15	16	9	15	0	1	21	0	28	0	0
March	12.6	N.	46	N.	2	18	7	1	0	17	8	3	8	0	5	13	13	16	16	13	0	1	18	0	30	0	3
April	8.4	S.	32	NW.	0	22	1	0	4	27	0	2	4	0	9	11	10	8	4	3	0	0	2	0	17	0	0
May	9.5	S.	38	SW.	0	18	3	1	3	24	4	1	8	0	5	17	9	11	9	0	1	0	0	0	5	2	0
June	8.8	S.	36	NW.	0	15	3	0	4	24	4	2	8	0	5	15	10	8	5	0	0	0	0	0	0	2	0
July	7.9	S.	30	NW.	0	16	2	1	3	30	2	3	5	0	4	15	12	15	11	0	0	0	0	1	0	3	0
August	7.0	S.	27	NW.	0	9	2	2	4	38	4	0	3	0	6	17	8	12	10	0	0	0	0	0	0	5	2
September	8.3	S.	28	N.	0	11	3	0	2	35	4	2	3	0	6	13	11	13	8	0	0	2	0	0	5	1	0
October	7.4	N.	34	SE.	0	21	2	0	3	20	5	2	9	0	4	9	18	16	11	2	0	0	0	0	13	0	0
November	10.8	S.	42	SE.	1	19	1	2	1	24	8	2	3	0	3	7	20	13	10	3	0	0	5	0	16	0	0
December	8.4	N.	44	NW.	1	29	1	1	2	18	3	6	2	0	8	8	15	6	3	6	0	0	18	0	30	0	2
Year	8.8	S.	46	N.	5	220	30	8	26	294	57	33	63	1	69	141	156	147	101	55	1	4	92	1	175	13	11

NORTH PLATTE, NEBR.

[H = 2,836 ft.; h_t = 43 ft.; h_r = 35 ft.; h_a = 52 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	8.8	W.	36	NW.	0	4	2	4	13	7	7	13	10	2	8	17	6	4	2	2	0	0	4	0	30	0	0
February	10.6	NW.	39	NW.	0	0	1	0	7	1	11	18	20	0	16	11	2	1	1	1	0	0	2	0	28	0	0
March	11.8	NW.	44	NW.	3	7	4	4	12	3	7	7	18	0	8	17	6	11	6	10	0	0	10	0	25	0	0
April	13.3	SE.	49	NW.	4	5	5	7	13	4	5	6	12	3	10	15	5	6	5	1	0	0	0	0	7	3	0
May	12.6	SE.	55	SE.	4	4	3	2	19	11	6	4	11	2	8	21	4	10	4	0	0	0	0	0	0	2	0
June	9.4	SE.	44	SW.	1	8	3	7	19	6	7	5	6	1	9	21	0	9	7	0	0	0	0	4	0	11	0
July	8.3	SE.	42	NW.	1	6	9	5	19	15	0	3	4	1	9	20	2	5	4	0	0	0	0	6	0	11	0
August	8.5	SE.	44	SE.	1	3	3	6	19	11	3	7	9	1	12	16	3	8	6	0	0	0	0	11	0	6	0
September	8.8	SE.	36	S.	0	6	5	4	13	10	4	7	9	2	9	18	3	8	6	0	0	0	0	2	0	4	0
October	8.6	W.	31	NW.	0	9	4	4	11	5	3	18	7	1	20	8	3	3	2	2	0	0	0	0	15	0	0
November	9.1	NW.	32	NW.	0	6	4	5	9	3	7	12	14	0	7	20	3	3	3	2	0	0	11	0	28	0	0
December	7.3	W.	36	NW.	0	3	2	2	5	8	8	24	9	1	12	17	2	2	1	0	0	0	1	0	29	0	0
Year	9.8	SE.	55	SE.	14	59	45	50	159	84	66	124	129	14	126	201	39	70	47	18	0	0	28	23	162	37	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

OKLAHOMA CITY, OKLA.

[λ=35° 26′ N.; φ=97° 33′ W.; gravity corr., −0.02.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	28.84	29.51	28.43	33.5	41.2	46.9	31.9	39.4	68	11	30	35	85	79	.172	.209	0.45	0.11	5.5	4.9	5.4
February	28.73	29.13	28.21	33.6	47.5	55.2	31.6	43.4	73	16	29	34	81	62	.164	.202	.14	.10	2.7	3.2	3.1
March	28.72	29.16	28.15	37.8	51.9	57.3	35.6	46.4	83	23	32	37	80	60	.194	.228	1.03	.36	5.9	3.7	4.9
April	28.65	29.23	28.27	56.5	71.6	77.6	54.6	66.1	92	28	51	53	84	55	.407	.435	1.02	.62	3.6	4.0	3.8
May	28.60	28.82	28.28	66.8	78.1	83.8	62.8	73.3	94	48	62	63	84	61	.556	.589	4.62	1.91	4.3	3.8	3.8
June	28.70	28.94	28.44	68.7	81.5	87.4	65.1	76.2	100	50	64	69	85	67	.603	.719	3.32	1.37	4.0	3.7	3.0
July	28.75	28.89	28.52	73.0	84.8	91.6	69.8	80.7	101	61	67	68	82	60	.660	.692	1.81	.70	3.4	3.4	3.2
August	28.74	29.04	28.46	72.8	90.2	96.5	70.0	83.2	104	53	61	61	67	39	.538	.539	1.83	1.16	2.3	1.7	2.0
September	28.73	29.04	28.42	62.3	76.0	83.9	59.9	71.9	100	37	55	56	80	54	.457	.467	2.14	1.10	3.8	3.6	3.3
October	28.76	29.04	28.37	50.0	62.7	70.4	47.9	59.2	91	35	44	46	81	55	.302	.320	1.91	1.41	5.1	3.1	4.1
November	28.82	29.45	28.24	40.7	47.9	57.1	36.1	46.6	80	14	35	35	80	62	.238	.234	2.41	2.33	4.8	3.0	3.7
December	28.88	29.38	28.44	35.4	47.5	56.5	33.5	45.0	75	17	30	34	78	61	.169	.202	1.22	.79	3.2	2.4	3.1
Year	28.74	29.51	28.15	52.6	65.1	72.0	49.9	61.0	104	11	47	49	81	60	.372	.403	21.90	2.33	4.0	3.4	3.6

OMAHA, NEBR.

[λ=41° 16′ N.; φ=95° 56′ W.; gravity corr., −0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	28.94	29.57	28.52	21.7	31.4	35.8	18.8	27.3	63	−8	18	21	83	66	.103	.118	0.33	0.16	5.4	4.5	6.0
February	28.82	29.32	28.28	25.3	37.2	42.8	22.4	32.6	78	2	17	19	68	50	.095	.107	.33	.17	4.8	3.6	5.8
March	28.87	29.40	28.03	25.6	36.5	41.4	21.9	31.6	70	2	19	22	76	56	.111	.126	1.31	.48	6.3	6.1	6.4
April	28.72	29.24	28.25	48.8	61.8	67.4	46.2	56.8	89	20	40	43	73	54	.281	.304	4.29	1.81	4.9	6.0	6.0
May	28.70	28.97	28.44	60.9	70.2	75.5	58.3	66.9	88	48	54	56	79	64	.427	.463	9.51	1.82	7.2	5.7	6.5
June	28.82	29.20	28.48	65.0	77.7	81.6	62.5	72.0	94	49	57	57	76	52	.473	.482	1.90	.69	5.9	4.9	5.7
July	28.85	29.05	28.51	68.4	79.2	83.3	65.9	74.6	96	56	62	64	80	61	.565	.599	4.53	2.08	3.7	4.1	4.6
August	28.85	29.17	28.58	66.6	78.3	83.3	64.5	73.9	96	54	60	64	79	62	.525	.608	3.50	1.71	5.6	3.2	4.8
September	28.87	29.21	28.48	53.6	65.4	70.7	52.4	61.6	88	37	49	53	85	66	.370	.427	3.97	1.44	4.6	4.3	4.8
October	28.86	29.24	28.26	42.3	55.6	62.2	40.8	51.5	82	26	35	39	76	56	.212	.250	3.72	1.83	3.5	4.4	4.4
November	28.92	29.56	28.27	25.3	33.2	39.4	20.4	29.9	72	−2	19	24	77	68	.115	.147	2.02	1.59	5.0	3.3	5.3
December	28.95	29.59	28.53	31.2	37.5	42.2	28.2	35.2	56	10	26	31	82	76	.150	.176	.50	.32	3.7	2.1	5.5
Year	28.85	29.59	28.03	44.6	55.3	60.5	41.9	51.2	96	−8	38	41	78	61	.286	.317	35.90	2.08	5.0	4.4	5.5

OSWEGO, N. Y.

[λ=43° 29′ N.; φ=76° 35′ W.; gravity corr., 0.00.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.78	30.22	29.32	19.3	22.7	25.2	15.9	20.6	40	−20	16	19	85	83	.095	.106	2.04	0.54	8.5	9.2	8.9
February	29.48	30.26	28.48	21.6	23.7	28.6	16.6	22.6	47	−18	19	19	86	82	.111	.111	4.90	1.47	9.2	7.4	8.1
March	29.62	30.27	28.89	23.0	26.3	30.9	18.1	24.5	50	3	18	19	80	73	.105	.106	4.79	1.09	7.7	5.8	6.4
April	29.72	30.19	29.28	45.3	48.4	55.4	39.4	47.4	80	18	39	40	78	72	.254	.264	1.06	.35	5.1	5.0	5.6
May	29.61	29.97	29.26	56.3	59.5	66.1	50.1	58.1	77	41	47	47	72	64	.329	.323	2.46	1.00	7.0	4.5	4.9
June	29.59	29.89	29.19	62.9	64.1	71.3	54.6	63.0	84	43	53	52	70	67	.413	.410	1.57	.69	4.6	4.0	4.1
July	29.62	29.99	29.26	68.1	70.4	76.2	62.5	69.4	86	54	60	60	76	71	.522	.530	5.89	3.30	4.8	6.2	5.1
August	29.64	29.97	29.34	67.8	70.5	76.7	62.2	69.4	90	48	60	59	75	67	.522	.514	3.00	1.07	5.4	5.1	4.3
September	29.65	29.92	29.16	57.8	60.3	66.9	52.4	59.6	90	41	50	51	76	72	.372	.385	4.05	.82	7.2	5.3	5.7
October	29.67	30.18	29.24	45.0	47.6	52.6	41.4	47.0	73	30	38	38	78	71	.237	.241	1.45	.43	7.2	6.4	5.9
November	29.75	30.26	29.04	40.6	43.2	49.8	35.8	42.8	70	20	34	34	77	72	.206	.211	3.95	.87	8.6	7.8	8.0
December	29.79	30.50	29.16	24.0	28.0	33.0	20.1	26.6	53	−1	19	22	81	77	.111	.125	3.16	.75	8.8	7.3	7.6
Year	29.66	30.50	28.48	44.3	47.1	52.7	39.1	45.9	90	−20	38	38	78	73	.273	.277	38.32	3.30	7.0	6.2	6.3

PALESTINE, TEX.

[λ=31° 45′ N.; φ=95° 40′ W.; gravity corr., −0.03.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.61	30.21	29.06	41.5	51.1	55.9	39.9	47.9	73	20	36	39	83	67	.231	.258	7.67	2.92	6.2	5.2	6.7
February	29.51	29.91	28.97	44.5	56.4	62.5	43.0	52.8	76	32	38	38	78	55	.239	.244	7.05	2.41	5.0	4.7	5.3
March	29.50	29.89	29.17	51.0	61.2	67.5	47.5	57.5	84	29	46	46	83	60	.336	.328	1.77	.79	5.7	6.5	6.3
April	29.52	29.98	29.21	61.6	72.2	77.5	59.1	68.3	85	38	57	57	85	60	.495	.487	1.22	.88	7.5	6.9	7.2
May	29.43	29.66	29.17	69.8	80.4	86.1	67.2	76.6	93	59	67	67	90	65	.659	.668	4.13	1.81	8.1	3.7	5.6
June	29.44	29.74	29.26	73.1	87.0	92.6	70.7	81.6	100	58	68	67	83	53	.683	.672	.71	.60	4.4	3.1	4.2
July	29.54	29.71	29.37	75.2	87.8	93.7	73.1	83.4	97	67	71	69	86	55	.753	.702	1.67	1.14	4.6	5.0	4.5
August	29.52	29.75	29.31	74.2	88.9	96.3	72.3	84.3	102	60	69	66	83	49	.710	.653	1.19	.58	4.3	5.6	4.8
September	29.46	29.71	29.26	68.8	84.3	91.1	67.3	79.2	104	47	64	61	85	48	.624	.557	2.01	1.58	2.7	4.6	4.3
October	29.52	29.69	29.23	57.6	68.8	77.2	55.6	66.4	92	45	54	56	87	65	.424	.454	7.16	2.73	3.1	5.5	5.9
November	29.60	30.02	29.22	53.7	60.7	67.6	50.9	59.2	83	28	49	49	83	67	.390	.394	1.67	1.01	5.5	4.3	6.3
December	29.68	30.05	29.15	44.0	57.3	63.8	42.2	53.0	80	23	37	38	76	50	.237	.242	2.15	1.18	3.9	3.8	4.4
Year	29.53	30.21	28.97	59.6	71.3	77.6	57.4	67.5	104	20	55	54	84	58	.482	.471	38.40	2.92	5.3	4.9	5.5

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

OKLAHOMA CITY, OKLA.

[H = 1,218 ft.; h_t = 54 ft.; h_r = 45 ft.; h_a = 53 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		Mi.																								
January	8.6	N.	32	N.	0	16	8	1	11	13	8	0	4	1	14	5	12	8	5	1	0	0	1	0	14	0	0
February	9.7	N.	40	N.	1	15	4	0	12	6	8	1	12	0	19	6	4	2	2	0	0	0	0	0	15	0	0
March	11.5	N.	42	N.	1	21	6	3	8	13	7	2	2	0	18	4	9	9	7	0	0	0	0	0	17	1	0
April	14.2	S.	40	N.	1	4	1	0	11	34	3	3	3	1	18	8	4	6	4	0	0	2	0	1	2	3	0
May	13.2	SE.	48	W.	1	3	1	1	28	24	3	0	2	0	16	13	2	10	9	0	1	0	0	3	0	10	0
June	8.8	SE.	48	NE.	1	8	10	4	26	6	4	0	2	0	20	8	2	11	9	0	0	0	0	10	0	7	0
July	7.9	S.	24	N.	0	2	7	1	17	25	6	2	2	0	17	12	2	8	7	0	0	0	0	17	0	2	0
August	7.7	S.	42	NW.	1	2	7	2	12	31	7	0	0	1	27	4	0	4	4	0	1	0	0	25	0	3	0
September	8.4	S.	28	SW.	0	10	11	3	9	14	6	1	4	2	21	5	4	7	6	0	0	0	0	14	0	2	0
October	7.0	N.	26	N.	0	15	7	4	9	13	6	1	7	0	19	8	4	5	3	0	0	0	0	1	0	1	0
November	12.0	N.	32	N.	0	19	5	0	6	19	4	2	5	0	19	4	7	4	3	0	0	0	4	0	13	1	0
December	7.2	SW.	26	S.	0	12	1	0	13	12	13	3	7	1	24	2	5	4	4	0	0	1	0	0	14	0	0
Year	9.7	S.	48	W.	6	127	68	19	162	210	75	15	50	6	232	79	55	78	63	1	2	3	5	71	75	30	0

OMAHA, NEBR.

[H = 1,103 ft.; h_t = 92 ft.; h_r = 86 ft.; h_a = 97 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.5	SE.	26	NW.	0	9	1	3	20	7	3	2	15	2	9	7	15	5	3	4	0	2	12	0	27	0	0
February	8.0	NW.	28	N.	0	13	3	0	9	4	4	8	17	0	10	6	13	4	2	3	0	0	5	0	23	0	0
March	8.8	NW.	34	NW.	0	14	3	2	9	4	8	3	18	1	6	11	14	10	4	7	0	0	9	0	25	1	0
April	10.5	SE.	40	NE.	1	9	4	5	18	3	2	10	9	0	10	4	16	15	11	0	2	0	0	0	3	14	0
May	8.9	SE.	36	NW.	0	11	5	6	10	8	5	10	7	0	5	12	14	18	14	0	2	1	0	0	0	14	0
June	7.3	SE.	35	NW.	0	9	7	5	11	5	7	10	6	0	5	16	9	10	9	0	1	0	0	3	0	12	0
July	7.0	N.	30	NW.	0	12	9	6	14	5	6	6	4	0	15	8	8	10	8	0	0	0	0	6	0	8	0
August	7.6	SE.	54	NE.	1	8	6	5	19	6	5	4	8	1	11	12	8	11	10	0	1	0	0	6	0	8	0
September	7.1	N.	28	S.	0	16	4	3	16	6	4	0	11	0	13	8	9	7	6	0	0	2	0	0	0	5	0
October	7.2	N.	24	N.	0	26	3	0	12	10	0	4	5	2	15	7	9	10	6	0	0	1	0	0	3	1	0
November	7.5	NW.	24	N.	0	8	7	1	8	5	2	4	25	0	8	13	9	6	4	2	0	2	10	0	25	0	0
December	6.7	NW.	26	SW.	0	10	2	0	9	12	5	9	15	0	10	11	10	3	3	1	0	7	4	0	21	0	0
Year	7.8	SE.	54	NE.	2	145	54	36	155	75	51	70	140	6	117	115	134	109	80	17	6	15	40	15	127	63	0

OSWEGO, N. Y.

[H = 335 ft.; h_t = 76 ft.; h_r = 68 ft.; h_a = 87 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	12.1	SE.	38	W.	0	3	6	3	20	6	5	5	14	0	1	4	26	19	11	17	0	0	21	0	30	0	0
February	15.9	SE.	39	W.	0	11	1	1	19	5	6	9	6	0	3	5	21	21	16	15	0	0	16	0	26	0	0
March	15.9	NW.	42	SW.	1	4	3	1	14	8	4	11	17	0	6	10	15	15	11	12	0	0	17	0	29	1	2
April	10.6	SE.	36	W.	0	3	4	0	17	14	3	13	5	1	2	7	14	7	6	3	0	0	2	0	9	1	0
May	10.5	W.	36	SW.	0	5	4	0	15	9	10	18	1	0	11	11	9	10	7	0	0	0	0	0	0	5	1
June	8.3	W.	25	N.	0	4	0	1	16	12	6	17	4	0	16	7	7	7	7	0	0	1	0	0	0	4	0
July	7.9	W.	30	NW.	0	3	1	1	9	13	8	16	11	0	8	15	8	15	7	0	0	0	0	0	0	2	0
August	8.3	S.	29	W.	0	4	0	0	9	14	13	14	8	0	14	9	8	12	10	0	0	0	0	1	0	6	0
September	9.4	S.	42	SE.	1	7	6	2	16	17	3	5	4	0	10	6	14	13	12	0	0	0	0	0	0	0	0
October	9.6	SE.	36	NW.	0	4	10	1	15	12	5	3	12	0	7	5	19	13	10	0	0	0	0	0	2	0	0
November	12.8	S.	42	W.	1	3	0	0	12	18	10	10	7	0	2	7	21	15	12	4	0	0	2	0	10	0	0
December	12.5	SE.	40	W.	1	5	10	2	18	9	8	3	7	0	3	7	21	19	11	12	0	0	15	0	21	0	1
Year	11.2	SE.	42	SW.	4	56	45	12	180	137	81	124	96	1	90	93	183	166	120	63	0	1	73	1	127	19	4

PALESTINE, TEX.

[H = 510 ft.; h_t = 54 ft.; h_r = 54 ft.; h_a = 61 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	6.7	NE.	28	SW.	0	9	16	4	10	6	5	3	8	1	5	14	12	9	9	0	0	4	0	0	7	2	0
February	8.2	NW.	26	SE.	0	6	7	0	8	4	14	5	14	0	12	9	8	10	10	0	1	0	0	0	0	1	0
March	8.7	SE.	26	SE.	0	3	7	3	14	13	8	2	12	0	8	8	15	9	7	0	0	3	0	0	1	2	0
April	8.9	S.	34	SE.	0	3	2	2	11	34	5	1	2	0	1	14	15	7	5	0	0	0	0	0	0	0	0
May	7.8	S.	39	SW.	0	1	4	5	14	32	4	1	1	0	6	18	7	6	6	0	0	0	0	3	0	4	0
June	5.9	S.	20	N.	0	4	12	7	13	19	2	1	3	0	11	18	1	5	3	0	0	0	0	24	0	4	0
July	6.0	S.	22	NE.	0	1	10	2	13	32	2	1	1	0	11	16	4	6	6	0	0	0	0	27	0	2	0
August	5.7	S.	23	NW.	0	4	7	3	5	28	10	1	3	1	9	19	3	5	5	0	0	0	0	29	0	5	0
September	6.2	SE.	26	S.	0	3	11	4	16	14	4	1	7	0	14	11	5	5	5	0	0	2	0	20	0	0	0
October	4.8	NE.	22	SE.	0	13	15	4	11	3	2	3	9	2	6	14	11	11	11	0	0	6	0	2	0	4	0
November	7.2	S.	28	S.	0	14	2	3	14	14	3	1	9	0	7	11	12	6	6	0	0	5	0	0	3	0	0
December	6.3	NE.	27	SE.	0	8	15	4	7	13	6	1	7	1	15	8	8	4	4	0	0	0	0	0	5	1	0
Year	6.9	S.	39	SW.	0	69	108	41	136	212	65	21	75	5	105	160	101	83	77	0	1	20	0	105	16	25	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

PARKERSBURG, W. VA.

[λ = 39° 16′ N.; φ = 81° 36′ W.; gravity corr., − 0.01.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.50	29.90	28.90	29.9	34.7	39.3	27.3	33.3	60	4	25	28	82	75	.141	.159	1.42	0.48	8.1	6.8	8.0
February	29.29	29.85	28.46	30.4	35.6	41.7	26.6	34.2	67	0	25	27	81	73	.151	.161	3.14	.59	7.1	6.7	7.4
March	29.40	29.91	28.75	30.7	38.2	44.3	26.1	35.2	68	6	26	28	82	68	.150	.166	4.58	1.00	6.1	5.3	6.1
April	29.45	29.86	29.14	53.9	63.3	71.0	48.4	59.7	93	26	45	45	71	53	.318	.328	2.37	.76	5.2	5.7	6.6
May	29.35	29.63	29.07	65.4	73.3	81.4	59.0	70.2	92	51	57	57	76	59	.475	.479	1.95	.66	5.4	5.6	5.6
June	29.34	29.57	28.98	67.5	72.8	81.1	61.0	71.0	92	50	61	61	79	68	.542	.547	4.22	1.31	5.4	6.1	6.6
July	29.40	29.60	29.17	71.4	75.9	83.8	65.5	74.6	94	54	65	65	80	70	.622	.629	11.46	2.70	5.4	6.6	6.9
August	29.41	29.71	29.14	68.3	75.2	84.0	63.3	73.6	97	51	64	65	85	72	.599	.637	4.37	1.48	4.4	4.7	5.4
September	29.59	29.71	28.89	59.5	66.7	76.8	55.0	65.9	92	36	55	58	85	76	.454	.511	3.86	1.56	4.3	4.5	5.4
October	29.41	29.70	29.06	43.7	53.2	61.2	41.7	51.4	79	29	40	44	88	74	.253	.300	3.52	1.55	4.7	4.4	4.8
November	29.53	29.89	28.93	43.6	48.8	57.7	39.7	48.7	76	21	39	43	85	81	.254	.299	3.48	1.25	7.2	5.2	7.0
December	29.54	30.04	29.06	32.2	38.7	44.6	29.1	36.8	64	10	28	32	86	78	.161	.188	1.56	1.04	7.2	5.3	6.8
Year	29.42	30.04	28.46	49.7	56.4	63.9	45.2	54.6	97	0	44	46	82	71	.343	.367	45.93	2.70	5.9	5.6	6.4

PENSACOLA, FLA.

[λ = 30° 25′ N.; φ = 87° 13′ W.; gravity corr., − 0.04.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	30.12	30.57	29.57	46.2	52.0	57.9	43.3	50.6	71	22	41	45	81	77	.278	.313	2.98	1.13	5.8	4.8	6.0
February	30.01	30.44	29.17	49.7	56.2	61.7	45.9	53.8	70	30	42	46	77	72	.303	.340	2.98	.85	4.1	3.8	4.4
March	30.05	30.39	29.59	54.6	59.5	65.8	51.2	58.5	75	34	49	52	83	77	.379	.411	6.97	5.08	6.0	4.4	6.1
April	30.11	30.36	29.87	65.8	69.5	75.1	62.2	68.6	83	43	59	61	81	75	.535	.553	1.14	.48	4.5	4.2	4.5
May	30.00	30.21	29.84	76.1	77.6	83.4	69.7	76.6	90	64	68	67	77	72	.690	.673	2.81	1.13	3.9	4.9	4.5
June	29.95	30.25	29.72	77.8	80.3	85.6	72.7	79.2	94	66	71	70	79	72	.759	.733	12.46	2.99	5.4	5.2	5.5
July	30.04	30.20	28.92	78.9	81.5	87.0	75.2	81.1	99	70	73	73	83	76	.813	.815	11.76	5.01	4.3	5.8	4.8
August	30.01	30.12	29.91	79.4	82.9	90.0	75.4	82.7	97	70	73	74	81	74	.812	.827	5.87	1.96	4.4	6.4	4.9
September	29.95	30.14	29.74	74.3	79.9	85.5	70.7	78.1	92	54	67	67	78	67	.685	.690	1.63	.78	3.2	3.4	3.3
October	29.97	30.17	29.71	64.6	71.0	76.9	61.7	69.3	86	48	57	60	77	69	.487	.536	6.86	3.14	5.5	5.1	5.5
November	30.11	30.37	29.78	60.0	64.3	70.0	56.6	63.3	81	34	55	57	84	79	.469	.504	4.59	2.08	5.5	4.4	5.4
December	30.17	30.55	29.73	47.0	55.0	61.2	44.0	52.6	75	31	41	45	80	71	.274	.319	2.09	.92	4.4	2.6	4.2
Year	30.04	30.57	28.92	64.5	69.1	75.0	60.7	67.9	99	22	58	60	80	73	.540	.560	62.14	5.08	4.8	4.6	4.9

PHILADELPHIA, PA.

[λ = 39° 57′ N.; φ = 75° 9′ W.; gravity corr., − 0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	30.07	30.44	29.57	28.0	32.3	36.6	25.6	31.1	53	4	21	23	74	68	.120	.129	1.57	1.38	6.3	4.3	5.5
February	29.79	30.42	28.66	29.8	35.0	41.5	25.7	33.6	60	−2	23	25	74	68	.136	.156	6.87	3.86	5.8	4.0	5.7
March	29.88	30.50	28.96	32.8	37.6	43.9	27.8	35.8	63	15	24	25	68	61	.139	.149	4.11	1.06	5.8	3.9	5.1
April	30.02	30.42	29.59	50.9	56.4	64.5	46.0	55.2	93	28	41	42	70	60	.286	.289	1.19	.31	5.7	4.6	5.3
May	29.92	30.30	29.54	63.8	68.3	76.7	57.6	67.2	93	45	52	55	68	65	.400	.443	2.27	1.09	7.0	5.8	6.4
June	29.87	30.16	29.43	67.7	71.7	78.6	62.1	70.4	91	54	58	58	72	64	.494	.500	4.07	1.62	5.6	5.9	6.3
July	29.92	30.28	29.61	74.8	78.3	85.3	69.8	77.6	93	61	66	65	74	66	.645	.639	3.27	.83	5.3	6.7	6.3
August	29.93	30.20	29.69	72.8	77.0	85.6	67.6	76.6	97	56	62	62	70	62	.581	.587	.46	.20	4.1	3.7	4.5
September	29.94	30.24	29.61	63.5	68.0	76.2	59.4	67.8	92	44	55	57	76	69	.458	.477	2.76	1.13	5.6	4.5	5.3
October	29.94	30.38	29.52	50.1	54.7	60.2	47.0	53.6	74	37	43	44	78	68	.291	.297	2.08	1.25	5.8	5.2	6.1
November	30.10	30.65	29.40	47.5	50.9	58.3	42.5	50.4	73	29	41	42	78	72	.274	.291	2.50	.91	6.5	4.9	5.9
December	30.07	30.79	29.51	31.3	36.5	41.3	28.2	34.7	60	12	24	26	72	64	.132	.146	1.00	.71	5.2	3.7	4.7
Year	29.95	30.79	28.66	51.1	55.6	62.4	46.6	54.5	97	−2	42	44	73	66	.330	.342	32.15	3.86	5.7	4.8	5.6

PHŒNIX, ARIZ.

[λ = 33° 28′ N.; φ = 112° W.; gravity corr., − 0.03.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	28.88	29.11	28.54	42.6	63.0	68.8	39.2	54.0	79	30	33	37	69	40	.193	.229	0.46	0.46	0.9	3.9	2.8
February	28.88	29.15	28.52	44.5	66.8	70.3	41.1	55.7	82	28	33	29	65	25	.190	.160	.05	.05	1.9	3.1	3.0
March	28.79	29.03	28.55	50.8	72.8	75.7	48.4	62.0	92	34	35	29	56	21	.204	.166	.99	.33	3.4	5.1	4.7
April	28.76	29.08	28.53	50.6	76.3	78.7	48.7	63.7	89	38	32	26	50	15	.187	.138	.05	.05	1.7	2.4	2.0
May	28.68	28.86	28.45	60.6	87.2	89.6	59.1	74.4	110	45	37	31	41	14	.226	.181	T.	T.	1.8	1.8	2.0
June	28.64	28.89	28.46	72.8	102.4	105.1	71.7	88.4	115	61	46	41	40	13	.319	.363	T.	T.	0.6	1.2	1.8
July	28.71	28.88	28.52	77.0	97.5	100.2	75.8	88.0	109	69	65	57	68	30	.622	.483	4.25	1.48	4.4	5.2	5.0
August	28.75	28.96	28.50	77.2	97.8	100.7	76.5	88.6	108	69	64	60	65	33	.604	.536	1.77	.60	3.9	4.8	4.0
September	28.67	28.82	28.33	72.1	92.0	95.5	70.3	82.9	104	55	57	57	60	33	.480	.473	1.18	.66	3.2	3.6	2.8
October	28.73	28.93	28.52	60.4	77.5	83.3	58.8	71.0	98	47	50	50	70	41	.363	.361	1.02	.32	1.8	2.8	2.7
November	28.82	29.19	28.55	48.1	66.7	73.4	45.8	59.6	83	32	37	42	67	42	.229	.274	.64	.64	1.2	2.8	3.1
December	28.93	29.11	28.68	43.7	62.8	68.8	39.7	54.2	75	33	32	34	65	35	.179	.194	.67	.57	1.0	2.4	2.7
Year	28.77	29.19	28.33	58.4	80.2	84.2	56.3	70.2	115	28	43	41	60	28	.316	.296	10.48	1.48	2.2	3.2	3.0

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

PARKERSBURG, W. VA.

[H = 638 ft.; h_t = 77 ft.; h_r = 69 ft.; h_a = 84 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		Mi.																								
January	4.8	W.	26	W.	0	5	4	4	6	5	9	12	2	15	2	9	20	13	7	4	0	0	7	0	23	0	0
February	8.5	SW.	37	W.	0	6	3	3	11	8	13	9	4	1	4	9	16	13	11	6	0	0	5	0	16	0	0
March	7.4	W.	38	W.	0	9	7	9	5	4	6	16	3	3	10	5	16	17	14	8	0	0	4	0	25	1	0
April	6.1	SE.	35	W.	0	4	5	6	12	5	8	7	6	7	3	14	13	12	9	1	0	0	0	2	4	4	0
May	4.4	SE.	40	W.	1	1	5	5	15	8	6	3	5	14	8	12	11	12	11	0	0	0	0	2	0	6	0
June	3.7	SE.	30	W.	0	3	4	3	12	7	3	7	4	17	4	12	14	15	11	0	0	0	0	1	0	7	0
July	b4.7	S.	36	W.	0	7	2	3	12	15	12	2	2	7	6	9	16	13	13	0	0	0	0	3	0	6	0
August	c4.1	S.	32	W.	0	11	1	2	10	12	12	1	5	8	11	10	10	11	10	0	0	0	0	6	0	5	0
September	4.7	SE.	30	W.	0	8	3	4	12	7	7	5	4	10	11	7	12	12	10	0	0	3	0	2	0	4	0
October	4.6	NE.	36	SW.	0	6	10	3	8	3	5	9	8	10	12	9	10	12	12	0	0	2	0	0	3	0	0
November	6.5	SE.	25	W.	0	3	3	1	17	12	2	0	8	5	6	7	17	11	10	0	0	0	1	0	7	0	0
December	6.0	S.	30	W.	0	2	5	4	8	13	7	6	9	8	6	9	16	10	7	2	0	1	4	0	17	0	0
Year	5.5	SE.	40	W.	1	65	52	47	128	99	90	86	60	105	83	112	171	151	125	21	0	6	21	16	95	33	0

PENSACOLA, FLA.

[H = 56 ft.; h_t = 78 ft.; h_r = 79 ft.; h_a = 90 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.2	N.	37	NW.	0	18	9	5	8	1	7	1	13	0	10	8	13	9	7	0	1	2	0	0	3	1	0
February	11.8	SW.	47	NW.	1	12	7	1	7	4	12	11	4	0	15	3	11	9	8	0	0	1	0	0	1	2	0
March	10.2	SE.	37	NW.	0	10	7	7	13	10	8	0	7	0	6	14	11	8	7	0	1	3	0	0	0	2	0
April	9.8	SW.	41	SW.	1	5	5	2	14	10	19	4	1	0	14	11	5	4	4	0	0	2	0	0	0	1	0
May	8.1	SW.	33	SW.	0	9	7	2	2	6	28	2	6	0	12	11	8	7	7	0	0	0	0	0	0	6	0
June	9.2	SW.	39	SW.	0	9	3	3	11	5	19	3	7	0	9	12	9	16	15	0	0	0	0	4	0	8	0
July	9.7	SW.	72	N.	2	4	6	4	8	6	20	4	10	0	14	9	8	13	10	0	0	0	0	5	0	4	0
August	7.9	NW.	39	NW.	0	5	12	3	3	5	16	1	17	0	10	19	2	12	8	0	0	0	0	12	0	8	0
September	8.5	NE.	27	NW.	0	8	15	5	6	6	11	3	6	0	21	4	5	4	4	0	0	0	0	2	0	3	0
October	9.1	N.	36	SW.	0	20	12	5	9	3	4	3	6	0	10	8	13	10	7	0	0	0	0	0	0	0	0
November	10.6	NE.	30	N.	0	10	16	16	8	6	2	0	2	0	11	7	12	8	8	0	0	0	0	0	0	1	0
December	9.4	N.	35	NE.	0	19	17	11	6	0	0	3	6	0	16	6	9	6	6	0	1	0	0	0	1	1	0
Year	9.5	SW.	72	N.	4	129	116	64	95	62	146	35	85	0	148	112	106	106	91	0	3	8	0	23	5	37	0

PHILADELPHIA, PA.

[H = 117 ft.; h_t = 168 ft.; h_r = 166 ft.; h_a = 184 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.9	NW.	34	NE.	0	12	14	3	3	2	6	8	14	0	10	10	11	6	4	4	0	0	7	0	26	0	0
February	13.8	NW.	39	SE.	0	12	12	2	3	4	4	11	10	0	10	8	11	13	10	7	0	4	4	0	19	1	0
March	13.9	NW.	50	NW.	3	7	7	2	4	7	5	9	21	0	14	5	12	14	11	6	0	0	3	0	23	0	0
April	10.3	NW.	36	NW.	0	7	8	8	5	6	10	5	11	0	9	14	7	9	7	1	0	1	0	3	5	3	0
May	9.8	SW.	36	NW.	0	3	5	9	6	3	11	9	16	0	8	9	14	8	7	0	0	0	0	3	0	8	0
June	8.9	SW.	32	N.	0	9	2	5	4	4	17	5	14	0	8	7	15	11	10	0	0	0	0	1	0	4	0
July	10.6	SW.	53	N.	1	9	0	2	3	15	16	9	8	0	7	11	13	14	10	0	0	1	0	5	0	6	0
August	8.2	SW.	32	NW.	0	15	1	4	9	5	12	6	10	0	14	9	8	6	3	0	0	0	0	10	0	2	0
September	9.9	SW.	42	SE.	1	13	6	5	5	10	12	3	6	0	11	8	11	11	10	0	0	0	0	2	0	5	0
October	10.2	N.	38	N.	0	16	7	3	2	3	9	6	16	0	9	7	15	7	5	0	0	2	0	0	0	0	0
November	9.9	SW.	36	SE.	0	12	7	0	4	4	17	7	9	0	9	10	11	9	8	1	0	2	0	0	1	0	0
December	9.8	NW.	36	NW.	0	14	2	2	2	1	14	13	14	0	11	12	8	4	3	2	0	0	5	0	20	0	0
Year	10.5	NW.	53	N.	5	129	71	45	50	54	133	91	149	0	120	110	136	112	88	21	0	10	19	24	94	29	0

PHŒNIX, ARIZ.

[H = 1,076 ft.; h_t = 47 ft.; h_r = 39 ft.; h_a = 57 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	4.8	SE.	20	SE.	0	1	0	0	19	17	12	12	0	1	21	7	3	2	1	0	0	0	0	0	4	0	0
February	4.8	S.	22	NW.	0	0	0	0	12	20	10	14	2	0	18	7	4	1	1	0	0	0	0	0	4	0	0
March	5.1	W.	36	SW.	0	0	0	0	11	12	9	20	10	0	12	9	10	3	2	0	0	0	0	2	0	0	0
April	6.0	W.	34	W.	0	0	1	3	12	9	2	22	11	0	24	3	3	1	1	0	0	0	0	0	0	0	0
May	5.7	W.	24	SW.	0	1	0	2	5	14	7	27	6	0	24	3	4	0	0	0	0	0	0	12	0	0	0
June	5.1	W.	24	SE.	0	0	0	2	10	15	4	21	8	0	27	1	2	0	0	0	0	0	0	30	0	0	0
July	4.8	W.	48	SE.	1	0	1	1	10	16	5	24	5	0	11	14	6	13	9	0	0	0	0	31	0	13	0
August	4.6	W.	40	NE.	1	1	0	1	9	14	8	25	3	1	15	10	6	8	6	0	0	0	0	31	0	11	0
September	4.4	W.	23	SE.	0	0	0	1	13	14	5	23	3	1	21	3	6	3	2	0	0	0	0	25	0	3	0
October	4.3	S.	36	SE.	0	1	1	5	13	20	4	13	5	0	19	8	4	6	6	0	0	0	0	9	0	2	0
November	3.3	W.	20	SE.	0	1	0	2	13	14	7	21	0	2	18	9	3	1	1	0	0	0	0	0	1	1	0
December	3.1	E.	26	NW.	0	2	3	13	9	10	6	13	2	4	19	11	1	2	2	0	0	1	0	0	0	0	0
Year	4.6	W.	48	SE.	2	7	6	30	136	175	79	235	55	9	229	85	52	40	31	0	0	1	0	140	9	30	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station. b For 603½ hours. c For 725 hours.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

PIERRE, S. DAK.

[λ=44° 22′ N.; φ=100° 21′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	28.52	29.12	27.94	13.2	22.5	27.6	9.4	18.5	60	—11	7	14	76	70	.065	.089	0.62	0.28	6.0	4.8	6.2
February	28.40	28.88	27.89	18.8	33.8	39.2	16.2	27.7	67	1	13	21	76	61	.079	.118	.87	.32	5.2	4.5	5.1
March	28.46	29.00	27.49	18.3	29.5	34.4	14.7	24.6	78	— 8	13	20	79	69	.095	.120	.85	.26	6.5	5.3	6.4
April	28.31	28.79	27.81	39.6	55.0	58.5	37.5	48.0	89	23	35	38	83	56	.213	.235	3.70	2.09	5.5	5.9	6.0
May	28.25	28.57	27.75	56.0	71.6	74.9	52.4	63.6	89	42	47	41	72	35	.332	.276	.30	.17	5.3	5.3	5.9
June	28.38	28.70	27.79	62.4	79.3	83.0	58.3	70.6	97	46	54	52	74	41	.421	.398	2.76	1.31	4.7	3.9	4.7
July	28.43	28.73	28.08	65.1	82.0	85.4	61.6	73.5	101	54	58	55	78	43	.485	.444	3.39	1.08	4.6	4.7	5.5
August	28.41	28.76	28.06	62.4	82.3	86.7	60.4	73.6	103	46	53	51	73	38	.413	.391	.85	.37	3.2	2.7	3.5
September	28.43	28.88	27.86	49.5	66.1	71.5	47.7	59.6	98	28	44	45	81	50	.297	.315	1.76	1.44	3.9	5.2	5.1
October	28.45	28.92	28.00	35.8	51.3	60.0	33.0	46.5	89	18	27	33	72	53	.155	.197	.55	.41	3.5	3.3	3.5
November	28.54	29.16	28.03	12.4	16.1	21.1	8.9	15.0	50	—16	8	14	82	89	.065	.085	1.92	.70	5.6	6.8	7.1
December	28.48	29.14	28.03	24.4	31.6	38.5	20.4	29.4	56	— 7	20	25	82	79	.110	.140	.28	.28	3.2	4.0	5.5
Year	28.42	29.16	27.49	38.2	51.8	56.7	35.0	45.9	103	—16	32	34	77	57	.228	.234	17.35	2.09	4.8	4.7	5.4

PITTSBURG, PA.

[λ=40° 32′ N.; φ=80° 2′ W.; gravity corr.,—0.01.]

January	29.26	29.66	28.69	29.2	32.9	37.5	25.2	31.4	56	—2	26	27	88	78	.146	.151	1.63	0.77	7.0	5.1	7.0
February	29.03	29.63	28.24	29.8	34.0	40.0	24.8	32.4	65	—2	26	28	86	77	.154	.162	2.89	.56	6.8	6.0	7.3
March	29.15	29.68	28.46	29.8	36.9	41.5	24.6	33.0	68	9	27	30	87	76	.154	.186	4.13	1.14	6.3	5.2	6.4
April	29.22	29.67	28.86	52.7	60.7	66.9	47.6	57.2	90	22	46	49	80	70	.341	.380	3.39	1.27	5.5	5.0	5.9
May	29.14	29.43	28.84	65.0	72.1	78.8	59.6	69.2	90	50	59	63	82	76	.507	.594	3.91	1.02	4.5	5.0	5.3
June	29.12	29.39	28.76	66.3	72.4	79.8	60.9	70.4	89	47	62	64	85	76	.557	.605	4.79	1.22	4.2	4.3	5.3
July	29.18	29.42	28.92	70.1	75.6	82.5	65.2	73.8	93	53	64	65	83	70	.614	.626	8.96	2.31	5.0	6.4	6.4
August	29.19	29.51	28.93	67.7	74.9	81.2	63.8	72.5	94	50	63	65	86	73	.601	.646	4.09	2.31	4.6	4.6	4.6
September	29.16	29.46	28.71	60.3	67.6	74.7	55.6	65.2	92	39	55	58	83	73	.458	.503	4.17	1.70	4.8	3.5	4.1
October	29.19	29.54	28.80	45.0	52.7	59.0	42.3	50.6	79	30	41	43	85	72	.265	.293	2.26	1.03	4.6	4.8	4.7
November	29.29	29.68	28.68	45.0	49.5	56.5	40.6	48.6	74	19	39	41	81	73	.260	.279	2.76	.69	7.1	5.4	6.4
December	29.28	29.84	28.78	32.8	37.1	41.8	28.5	35.2	60	11	28	29	81	73	.157	.169	1.37	.60	7.9	5.2	7.0
Year	29.18	29.84	28.24	49.5	55.5	61.7	44.9	53.3	94	—2	45	47	84	74	.351	.383	44.35	2.31	5.7	5.0	5.9

POINT REYES LIGHT, CAL.

[λ=38° 11′ N.; φ=122° 51′ W.; gravity corr., —.]

January	.....	.....	.....	.....	.....	54.9	47.4	51.1	61	42	.....	.....	.....	.....	.....	.....	8.30	1.31	.....	.....	.....
February	.....	.....	.....	.....	.....	57.4	47.0	52.2	74	41	.....	.....	.....	.....	.....	.....	.97	.28	.....	.....	.....
March	.....	.....	.....	.....	.....	55.7	46.4	51.0	69	34	.....	.....	.....	.....	.....	.....	3.25	1.39	.....	.....	.....
April	.....	.....	.....	.....	.....	54.1	44.5	49.3	63	37	.....	.....	.....	.....	.....	.....	4.20	1.78	.....	.....	.....
May	.....	.....	.....	.....	.....	57.0	47.1	52.0	85	43	.....	.....	.....	.....	.....	.....	1.24	.55	.....	.....	.....
June	.....	.....	.....	.....	.....	55.8	47.3	51.6	65	45	.....	.....	.....	.....	.....	.....	.00	.00	.....	.....	.....
July	.....	.....	.....	.....	.....	60.4	50.5	55.4	67	46	.....	.....	.....	.....	.....	.....	.00	.00	.....	.....	.....
August	.....	.....	.....	.....	.....	60.0	51.9	56.0	69	49	.....	.....	.....	.....	.....	.....	.02	.02	.....	.....	.....
September	.....	.....	.....	.....	.....	59.9	51.5	55.7	70	49	.....	.....	.....	.....	.....	.....	.43	.33	.....	.....	.....
October	.....	.....	.....	.....	.....	58.0	49.6	53.8	74	45	.....	.....	.....	.....	.....	.....	1.76	1.60	.....	.....	.....
November	.....	.....	.....	.....	.....	54.3	46.9	50.6	61	34	.....	.....	.....	.....	.....	.....	4.85	2.25	.....	.....	.....
December	.....	.....	.....	.....	.....	56.7	48.2	52.4	67	45	.....	.....	.....	.....	.....	.....	5.40	1.72	.....	.....	.....
Year	.....	.....	.....	.....	.....	57.0	48.2	52.6	85	34	.....	.....	.....	.....	.....	.....	30.42	2.35	.....	.....	.....

PORT ANGELES, WASH.

[λ=48° 7′ N.; φ=123° 6′ W.; gravity corr., +0.01.]

January	29.81	30.47	28.99	37.3	39.8	44.1	34.0	39.0	59	25	33	36	86	85	.195	.213	5.07	1.30	7.6	7.5	7.1
February	30.04	30.61	29.22	39.4	44.1	47.6	36.5	42.0	57	29	35	37	84	76	.204	.222	3.93	1.75	5.9	6.6	6.4
March	30.01	30.57	29.53	35.1	44.4	46.6	32.6	39.6	56	18	29	34	78	68	.165	.200	1.72	.54	5.0	5.5	5.1
April	29.88	30.28	29.49	38.6	47.7	50.8	36.9	43.8	59	28	34	37	83	67	.198	.221	1.01	.24	7.0	6.1	5.3
May	29.97	30.50	29.48	44.0	52.7	55.6	42.3	49.0	69	33	38	42	81	68	.232	.265	.72	.20	6.0	6.0	5.4
June	30.04	30.32	29.75	49.0	57.2	60.6	47.1	53.8	83	40	44	46	85	69	.295	.316	.31	.08	5.4	4.9	4.7
July	30.00	30.16	29.77	53.9	64.3	66.3	51.5	58.9	79	44	49	51	84	64	.343	.375	.00	.00	3.0	1.4	1.6
August	.....	30.15	29.86	(a)	62.2	64.9	52.1	58.5	77	45	.....	54	.....	77	.....	.428	.47	.28	.....	3.1	3.3
September	.....	30.26	29.70	.....	57.5	60.4	44.9	52.6	78	36	.....	52	.....	84	.....	.389	.91	.67	.....	3.4	3.2
October	.....	30.23	29.50	.....	52.0	55.1	40.8	48.0	66	34	.....	49	.....	90	.....	.350	2.13	.78	.....	5.4	6.1
November	.....	b30.48	b29.44	.....	b38.0	b42.4	b31.4	b36.9	b53	b12	.....	b34	.....	b86	.....	b.296	7.48	1.94	.....	b7.1	c6.6
December	.....	30.18	29.16	.....	44.1	47.6	37.5	42.6	57	32	.....	42	.....	82	.....	.268	6.65	1.10	.....	8.6	8.5
Year	.....	30.61	28.99	.....	50.3	53.5	40.6	47.1	83	12	.....	43	.....	77	.....	.288	30.40	1.94	.....	5.5	5.3

a a. m. observations discontinued. b For 24 days. c For 25 days.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

PIERRE, S. DAK.

[H=1,460 ft.; h_t=50 ft.; h_r=47 ft.; h_a=61 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.01 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	8.3	NW.	36	NW.	0	10	3	17	2	3	1	3	17	6	10	9	12	7	4	7	0	0	18	0	28	0	0
February	9.1	NW.	36	NW.	0	6	4	10	6	1	4	6	19	2	12	10	7	3	3	3	0	0	9	0	25	0	0
March	10.0	E.	40	NW.	1	10	4	16	4	3	5	7	12	1	6	11	14	9	6	7	0	0	16	0	26	0	0
April	12.5	N.	44	NE.	2	11	8	10	8	1	0	6	11	5	8	10	12	9	9	1	1	0	0	0	8	3	0
May	11.8	NW.	44	NW.	2	6	5	12	13	4	1	6	15	0	4	20	7	5	3	0	0	0	0	0	0	3	0
June	10.8	SE.	52	SW.	3	4	6	5	25	3	1	5	10	1	9	18	3	10	8	0	0	0	0	6	0	10	0
July	9.1	E.	40	NW.	1	9	7	14	13	5	6	4	3	1	6	14	11	7	6	0	0	0	0	11	0	7	0
August	9.2	SE.	44	E.	2	10	8	7	22	5	1	3	6	0	18	9	4	5	5	0	0	0	0	13	0	7	0
September	8.4	N.	32	S.	0	13	5	6	12	9	2	4	9	0	10	11	9	6	4	0	0	0	0	2	1	1	0
October	7.5	SE.	33	N.	0	9	8	8	14	2	8	0	13	0	13	10	8	4	2	2	0	2	0	0	15	1	0
November	9.8	NW.	39	NW.	0	12	5	11	10	1	2	3	16	0	7	3	20	11	10	11	0	0	24	0	30	0	0
December	6.8	SE.	30	E.	0	4	2	13	19	3	3	5	13	0	8	13	10	1	1	0	0	2	9	0	27	0	0
Year	9.4	SE.	52	SW.	11	104	65	129	148	40	34	52	144	16	111	138	117	77	61	31	1	4	76	32	160	32	0

PITTSBURG, PA.

[H=842 ft.; h_t=116 ft.; h_r=101 ft.; h_a=123 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.01 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	6.9	W.	24	NW.	0	5	2	4	13	1	10	16	11	0	5	10	16	10	5	5	0	7	8	0	22	0	0
February	9.4	W.	36	NW.	0	5	2	0	7	15	7	12	10	0	3	10	16	16	11	10	0	1	7	0	19	0	0
March	8.0	NW.	24	NW.	0	6	3	2	12	2	8	12	17	0	7	12	12	17	15	11	0	1	9	0	27	0	0
April	6.6	W.	21	W.	0	7	4	1	13	7	9	12	7	0	9	8	13	11	8	3	0	0	1	1	6	4	0
May	6.1	W.	27	W.	0	4	1	4	18	3	6	15	11	0	10	12	9	17	13	0	2	1	0	0	0	6	0
June	4.9	NW.	24	SW.	0	13	5	2	6	5	8	10	11	0	6	21	3	15	11	0	1	0	0	0	0	9	0
July	5.7	SW.	25	NE.	0	6	2	2	5	13	21	3	10	0	6	15	10	17	16	0	0	0	0	3	0	7	0
August	4.6	W.	20	S.	0	10	5	2	6	3	14	13	8	1	11	12	8	12	8	0	0	6	0	3	0	6	0
September	4.9	SW.	24	SW.	0	5	2	8	6	8	11	11	9	0	14	11	5	10	9	0	0	11	0	1	0	4	0
October	5.4	W.	23	SW.	0	5	4	6	3	7	8	12	13	4	11	10	10	13	10	0	0	11	0	0	2	0	0
November	7.0	SW.	26	SW.	0	5	2	1	13	11	14	8	5	1	7	9	14	11	8	0	0	4	2	0	9	0	0
December	6.4	W.	20	SW.	0	6	5	1	7	10	9	19	5	0	2	15	14	11	7	3	0	6	6	0	17	0	0
Year	6.3	W.	36	NW.	0	77	37	33	109	85	125	143	117	6	91	145	130	160	121	32	3	48	33	8	102	36	0

POINT REYES LIGHT, CAL.

[H=— ft.; h_t=12 ft.; h_r=1 ft.; h_a=16 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.01 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	14.7	SE.	54	NW.	6	0	2	2	14	1	1	1	10	0	6	4	21	14	14	0	0	4	0	0	0	1	0
February	16.4	NW.	65	NW.	4	1	0	0	3	1	0	0	23	1	18	4	7	6	6	0	0	3	0	0	0	0	0
March	13.8	NW.	70	NW.	3	1	0	0	12	1	1	0	15	1	10	5	16	14	12	2	0	5	0	0	0	0	0
April	15.9	NW.	73	NW.	2	0	0	0	7	1	3	1	18	0	16	2	12	14	10	0	0	2	0	0	0	0	0
May	18.9	NW.	69	NW.	6	1	0	0	6	2	1	0	21	0	17	7	7	11	6	0	0	4	0	0	0	1	0
June	27.2	NW.	75	NW.	5	0	0	0	2	3	0	0	25	0	13	8	9	0	0	0	0	6	0	0	0	0	0
July	14.0	NW.	50	NW.	1	0	0	0	5	1	6	1	18	0	8	3	20	0	0	0	0	6	0	0	0	0	0
August	22.3	NW.	64	NW.	4	0	0	0	4	0	0	1	26	0	5	14	12	1	0	0	0	9	0	0	0	0	0
September	12.7	NW.	70	NW.	1	0	0	0	6	4	1	1	18	0	9	4	17	2	2	0	0	4	0	0	0	0	0
October	16.8	NW.	58	NW.	4	1	0	0	4	0	0	1	25	0	14	8	9	5	3	0	0	6	0	0	0	0	0
November	18.4	NW.	74	NW.	4	2	1	0	6	0	1	0	19	1	10	10	10	8	8	0	0	3	0	0	0	0	0
December	13.9	SE.	77	NW.	7	3	1	1	12	1	2	0	11	0	7	12	12	12	10	0	0	5	0	0	0	1	0
Year	17.1	NW.	77	NW.	47	9	4	3	81	15	16	6	229	3	133	81	152	87	71	2	0	57	0	0	0	3	0

PORT ANGELES, WASH.

[H=29 ft.; h_t=47 ft.; h_r=35 ft.; h_a=59 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.01 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	5.9	S.	27	W.	0	2	2	1	10	24	12	11	0	0	5	8	18	17	15	5	0	0	2	0	10	0	0
February	6.4	W.	38	SW.	0	1	1	4	10	12	14	15	1	0	5	11	13	19	13	3	0	0	0	0	5	0	0
March	6.7	S.	37	NE.	0	3	6	7	5	22	1	14	4	0	10	14	7	11	9	4	0	0	2	0	10	0	0
April	6.1	S.	34	W.	0	1	2	12	1	20	5	13	5	1	8	14	8	17	10	0	0	0	0	0	3	0	0
May	6.7	W.	38	W.	0	1	2	4	1	14	8	22	10	0	8	16	7	12	6	0	0	0	0	0	0	0	0
June	7.3	W.	27	SW.	0	0	2	2	3	17	8	24	4	0	12	12	6	6	5	0	0	0	0	0	0	0	0
July	7.1	W.	23	W.	0	0	0	4	3	11	10	29	5	0	27	4	0	0	0	0	0	1	0	0	0	0	0
August	5.2	W.	20	W.	0	1	1	8	0	0	0	17	4	0	18	8	5	6	1	0	0	1	0	0	0	0	0
September	4.2	W.	23	W.	0	0	0	7	2	1	0	11	0	9	19	3	8	4	3	0	0	4	0	0	0	0	0
October	4.4	E.	24	W.	0	0	2	9	4	4	3	9	0	0	6	14	11	10	8	0	0	4	0	0	0	0	0
November	6.2	SE.	b38	NE.	b0	b0	b3	b6	b8	b0	b4	b3	b0	b0	c6	c7	c12	c16	c16	c2	c6	c0	c3	c0	c10	0	0
December	4.4	SE.	30	SW.	0	0	2	4	12	5	5	3	0	0	0	8	23	26	18	0	0	1	0	0	0	0	0
Year	5.9	W.	38	SW.	0	9	23	68	59	130	70	171	33	10	124	119	118	144	104	14	0	11	7	0	38	0	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station. b For 24 days. c For 25 days.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

PORT HURON, MICH.

[λ=43° N.; φ=82° 26′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.											
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.44	29.89	28.97	22.6	25.7	28.5	19.5	24.0	40	—5	18	21	80	79	.101	.115	0.69	0.27	8.3	7.4	7.0
February	29.20	29.90	28.68	22.4	25.2	29.0	18.1	23.6	51	—9	18	20	80	79	.106	.115	1.37	.54	5.7	5.7	5.9
March	29.36	29.88	28.80	23.0	28.5	31.8	20.0	25.9	61	2	18	23	78	78	.100	.126	1.47	.60	4.5	5.6	6.1
April	29.39	29.91	29.03	45.8	50.1	57.7	40.2	49.0	84	19	40	42	80	74	.271	.296	2.52	.84	5.2	5.3	5.5
May	29.30	29.63	28.80	58.9	64.1	73.3	52.2	62.8	90	43	51	53	75	69	.382	.420	1.86	.94	3.9	3.8	3.9
June	29.32	29.61	28.92	63.3	66.8	74.2	56.1	65.2	88	40	55	56	76	69	.449	.456	1.79	1.12	3.6	3.6	3.5
July	29.34	29.60	29.07	66.8	70.4	78.5	60.5	69.5	91	50	60	61	80	73	.529	.540	4.88	1.34	4.5	4.2	4.4
August	29.36	29.75	29.01	64.5	68.9	75.6	59.9	68.2	90	47	59	61	81	77	.507	.553	4.74	1.30	4.2	3.1	3.8
September	29.35	29.69	28.76	54.4	59.4	66.6	50.6	58.6	86	32	50	52	86	78	.376	.405	4.74	1.24	6.1	5.8	5.4
October	29.38	29.79	28.94	41.1	47.6	54.4	39.0	46.7	73	25	36	39	81	73	.220	.249	1.25	.82	4.2	4.0	4.3
November	29.42	29.86	28.76	37.2	39.6	45.9	33.0	39.4	66	15	32	34	80	80	.196	.215	1.81	.76	5.8	6.5	6.0
December	29.47	30.05	28.94	25.7	30.3	33.8	23.7	28.8	53	6	21	24	80	76	.117	.132	1.31	.33	6.8	6.4	6.4
Year	29.36	30.05	28.68	43.8	48.0	54.2	39.4	46.8	91	—9	38	40	80	75	.280	.302	28.43	1.34	5.2	5.1	5.1

PORTLAND, ME.

[λ=43° 39′ N.; φ=70° 15′ W.; gravity corr., 0.00.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	30.02	30.37	29.41	16.6	21.8	26.7	14.4	20.6	43	—13	10	15	75	75	.074	.096	2.00	1.18	5.6	5.4	5.5
February	29.69	30.30	28.72	20.1	24.1	29.8	15.1	22.4	45	—13	14	18	75	77	.094	.108	5.27	2.40	6.5	5.0	5.7
March	29.75	30.40	28.80	25.7	28.9	35.1	20.9	28.0	51	7	20	24	80	80	.121	.135	8.02	3.50	5.4	5.1	5.7
April	29.97	30.35	29.26	41.2	42.6	51.1	35.6	43.4	77	24	33	36	75	78	.195	.215	1.65	.84	6.1	5.2	6.0
May	29.88	30.33	29.48	54.5	55.2	63.8	46.3	55.0	92	35	45	46	72	73	.306	.316	3.21	1.51	5.8	5.0	5.7
June	29.82	30.24	29.29	62.0	62.9	71.2	53.9	62.6	90	47	53	54	74	75	.415	.424	2.23	.60	5.8	5.8	6.2
July	29.85	30.28	29.38	66.9	67.9	76.1	59.9	68.0	92	52	62	62	84	81	.558	.558	3.10	.76	5.4	6.1	6.3
August	29.88	30.19	29.64	64.5	65.6	73.5	58.7	66.1	90	49	62	63	91	90	.558	.577	2.57	.82	5.7	4.7	5.8
September	29.91	30.26	29.38	55.6	58.9	64.6	50.8	57.7	79	36	52	55	88	87	.404	.444	9.57	5.28	6.0	5.1	6.5
October	29.90	30.47	29.35	43.8	47.7	52.3	40.0	46.2	76	30	39	42	83	81	.246	.273	3.19	1.46	7.3	5.9	7.5
November	30.03	30.69	29.47	38.3	40.2	47.6	33.1	40.4	72	15	34	33	84	75	.206	.202	2.45	1.02	7.2	5.1	7.1
December	29.98	30.76	29.29	21.9	25.7	32.8	17.7	25.2	47	3	15	17	72	67	.095	.100	2.18	1.15	5.6	2.5	5.2
Year	29.89	30.76	28.72	42.6	45.1	52.0	37.2	44.6	92	—13	37	39	79	78	.273	.287	45.44	5.28	6.0	5.1	6.1

PORTLAND, OREG.

[λ=45° 32′ N.; φ=122° 43′ W.; gravity corr., 0.00.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.76	30.32	29.11	39.8	43.2	48.6	37.0	42.8	61	23	36	36	88	78	.221	.221	6.52	1.19	8.3	8.3	6.9
February	30.00	30.40	29.41	42.9	48.8	52.1	40.3	46.2	62	29	38	39	84	71	.230	.240	3.44	.91	5.9	6.2	6.3
March	29.89	30.43	29.36	39.5	51.3	53.4	37.6	45.5	68	20	34	34	82	55	.208	.207	2.19	.51	5.7	5.7	5.6
April	29.78	30.19	29.43	41.6	51.6	54.1	39.9	47.0	67	34	38	36	87	59	.228	.217	4.09	.82	7.1	8.0	6.3
May	29.87	30.38	29.45	45.9	57.2	59.6	44.9	52.2	81	37	42	41	86	58	.267	.257	3.55	.77	6.5	7.3	5.7
June	29.90	30.20	29.68	52.7	69.1	70.5	51.8	61.2	90	43	47	46	82	47	.320	.325	1.41	.42	4.5	4.1	3.9
July	29.82	30.06	29.61	58.5	80.2	81.5	58.7	70.1	93	53	55	52	84	40	.431	.398	T.	T.	2.2	1.7	1.8
August	29.86	30.01	29.72	59.2	73.0	74.7	57.9	66.3	91	55	55	54	86	56	.433	.427	1.32	.63	6.3	4.5	4.6
September	29.84	30.13	29.52	53.0	68.8	70.9	51.1	61.0	89	42	49	48	87	51	.350	.347	.47	.38	3.1	3.0	3.5
October	29.86	30.14	29.39	49.5	61.5	64.7	47.1	55.9	78	40	45	46	87	59	.308	.310	1.76	.70	3.2	4.7	4.3
November	29.86	30.34	29.30	37.0	39.2	43.2	34.0	38.6	60	11	34	32	88	78	.211	.201	13.12	2.77	6.5	7.7	6.5
December	29.85	30.22	29.27	43.2	45.2	48.2	39.6	43.9	62	27	39	41	88	85	.246	.260	6.26	1.18	6.4	8.6	7.9
Year	29.86	30.43	29.11	47.0	57.4	60.1	45.0	52.6	93	11	43	42	86	62	.288	.284	44.13	2.77	5.5	6.0	5.3

PUEBLO, COLO.

[λ=38° 18′ N.; φ=104° 36′ W.; gravity corr., —0.02.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	25.25	25.62	24.94	27.1	42.3	52.7	20.9	36.8	66	5	12	15	54	34	.074	.086	0.41	0.20	3.2	4.8	4.8
February (a)	25.23	25.60	24.77	25.9	44.1	51.6	21.9	36.8	72	6	6	2	42	22	.057	.050	.31	.31	3.1	4.2	4.0
March	25.19	25.60	24.75	28.1	47.8	52.7	24.9	38.8	80	8	13	8	55	25	.080	.069	.89	.23	4.4	6.6	5.4
April	25.10	25.61	24.74	39.6	65.8	69.6	37.3	53.4	81	15	17	7	44	13	.099	.067	.57	.44	4.1	4.1	3.7
May	25.15	25.41	24.84	49.8	72.7	77.6	46.9	62.2	92	33	29	19	49	21	.176	.129	1.13	.89	4.9	5.4	4.8
June	25.30	25.57	24.92	58.5	82.8	88.5	55.5	72.0	99	45	40	32	53	19	.258	.195	.35	.20	3.3	5.9	4.2
July	25.35	25.57	25.12	63.6	82.0	89.2	60.8	75.0	96	56	52	43	68	31	.395	.299	2.08	.59	4.3	6.2	4.9
August	25.36	25.54	25.08	61.6	83.3	88.9	59.6	74.2	102	52	47	40	63	26	.341	.265	1.98	1.00	3.7	6.3	4.8
September	25.32	25.62	25.05	51.9	70.4	76.8	50.2	63.5	94	33	44	42	77	42	.297	.283	1.41	.39	5.6	4.7	5.0
October	25.30	25.62	24.94	39.6	57.1	65.2	36.0	50.6	83	23	29	31	67	40	.159	.172	.71	.42	4.1	4.0	4.7
November	25.25	25.64	24.66	26.0	39.4	49.2	21.5	35.4	81	—17	11	12	56	39	.077	.078	.34	.27	3.8	4.8	4.8
December	25.34	25.73	24.84	28.3	44.3	54.2	22.5	38.4	74	10	13	14	56	33	.080	.087	.63	.50	3.2	3.9	4.7
Year	25.26	25.73	24.66	41.7	61.0	68.0	38.2	53.1	102	—17	26	22	57	29	.174	.148	10.81	1.00	4.0	5.1	4.6

a One observation taken 20 minutes later.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

PORT HURON, MICH.

[H=639 ft.; h_t=70 ft.; h_r=63 ft.; h_a=108 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Aurora.
	Miles.		*Mi.*																								
January	10.8	W.	42	W.	1	4	5	4	8	9	12	15	4	1	4	8	19	12	6	10	0	0	15	0	29	0	0
February	13.8	S.	46	W.	2	7	5	2	6	13	6	13	6	0	8	11	10	14	6	12	0	1	16	0	27	0	0
March	13.5	N.	46	NW.	3	14	5	2	7	9	8	8	9	0	10	14	7	9	5	5	0	0	21	0	28	0	0
April	12.0	SE.	39	NW.	0	9	5	3	13	10	12	2	6	0	9	10	11	14	8	2	1	3	3	0	7	2	0
May	11.7	SW.	54	SW.	3	11	3	3	9	10	16	8	1	1	14	12	5	15	8	0	0	0	0	1	0	4	0
June	8.3	S.	39	W.	0	14	14	3	3	17	3	2	2	2	19	6	5	10	6	0	0	0	0	0	0	4	0
July	9.6	N.	32	SW.	0	18	6	1	5	11	13	4	4	0	14	10	7	13	13	0	0	0	0	1	0	8	0
August	9.5	S.	52	N.	2	9	10	2	5	17	11	5	3	0	17	9	5	14	10	0	0	0	0	0	0	8	0
September	10.7	S.	40	NW.	1	10	4	5	4	14	10	7	5	1	8	14	8	14	12	0	0	0	0	0	1	4	0
October	10.6	NW.	36	S.	0	7	5	7	4	12	10	4	13	0	15	9	7	7	6	2	0	1	0	0	7	0	0
November	13.7	SW.	48	SW.	2	2	5	1	5	14	14	11	8	0	8	11	11	13	9	1	0	2	5	0	14	0	0
December	10.6	S.	36	W.	0	4	5	2	5	18	8	12	8	0	6	10	15	13	7	7	0	0	13	0	21	0	0
Year	11.2	S.	54	SW.	14	109	72	35	74	154	123	91	69	5	132	124	110	148	96	39	1	7	73	2	134	30	0

PORTLAND, ME.

[H=103 ft.; h_t=81 ft.; h_r=75 ft.; h_a=89 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Aurora.
January	7.4	N.	26	W.	0	20	1	1	0	1	7	12	18	2	10	10	11	9	7	9	0	0	21	0	31	0	1
February	8.4	N.	42	N.	1	17	0	2	0	3	7	15	12	2	11	6	12	13	10	10	0	0	16	0	27	0	0
March	11.3	W.	39	S.	0	11	1	2	0	6	13	11	18	0	9	9	13	14	13	10	0	1	12	0	26	0	0
April	7.7	S.	30	NW.	0	13	0	6	3	13	6	9	10	0	9	8	13	9	7	4	0	1	1	0	9	0	0
May	7.2	S.	27	W.	0	8	3	3	2	20	11	5	8	2	8	13	10	9	6	0	0	2	0	1	0	2	0
June	7.5	S.	27	S.	0	6	5	4	5	7	11	10	12	0	8	10	12	10	6	0	0	0	0	0	0	1	0
July	6.5	SW.	26	NW.	0	5	4	3	3	11	23	8	4	1	7	13	11	15	11	0	1	5	0	1	0	3	0
August	5.7	S.	24	S.	0	9	0	6	4	15	14	3	10	1	10	10	11	18	15	0	0	9	0	0	0	2	0
September	7.3	S.	30	S.	0	10	5	1	2	9	13	10	9	1	8	8	14	14	13	0	0	5	0	0	0	3	0
October	7.8	N.	34	S.	0	15	4	2	0	7	6	19	8	1	5	5	21	15	10	0	0	3	0	0	2	0	0
November	7.3	N.	24	S.	0	15	8	0	5	2	14	7	9	0	5	8	17	13	10	4	0	4	3	0	12	0	0
December	7.8	N.	32	N.	0	15	4	0	1	0	12	16	14	0	12	9	10	7	4	3	0	2	12	0	27	0	0
Year	7.7	N.	42	N.	1	144	35	30	25	94	137	125	132	10	102	109	155	146	112	40	1	32	65	2	134	11	1

PORTLAND, OREG.

[H=153 ft.; h_t=203 ft.; h_r=147 ft.; h_a=213 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Aurora.
January	7.8	NW.	42	S.	2	5	2	7	12	10	4	4	17	1	3	12	16	23	17	2	0	1	1	0	7	0	0
February	9.7	S.	38	S.	0	3	2	5	13	15	7	1	11	1	3	16	10	17	13	1	0	3	0	0	2	0	0
March	10.0	NW.	38	NE.	0	3	8	4	5	13	5	3	21	0	6	16	9	15	10	2	1	2	2	0	5	0	0
April	9.7	S.	36	S.	0	2	1	3	14	14	10	1	14	1	5	16	9	21	20	0	1	1	0	0	0	0	0
May	9.2	NW.	35	S.	0	3	1	0	16	10	9	8	15	0	5	18	8	20	12	0	1	0	0	0	0	0	0
June	7.8	NW.	29	S.	0	3	2	0	10	3	7	1	32	2	16	11	3	8	5	0	1	0	0	1	0	0	0
July	6.5	NW.	26	NW.	0	7	0	1	2	1	3	2	39	7	24	6	1	0	0	0	0	0	0	5	0	0	0
August	6.7	NW.	25	N.	0	3	0	1	9	8	2	0	39	0	10	14	7	7	4	0	0	1	0	1	0	0	0
September	7.7	NW.	26	S.	0	6	0	2	7	4	3	1	37	0	14	11	5	5	2	0	0	5	0	0	0	1	0
October	6.5	NW.	37	SE.	0	7	0	2	9	8	1	2	31	2	16	11	4	9	8	0	0	5	0	0	0	0	0
November	12.2	S.	49	SE.	4	1	9	11	10	12	7	3	7	0	6	11	13	20	18	3	0	1	5	0	12	0	0
December	8.6	SE.	42	S.	1	3	1	6	15	19	3	3	12	0	1	8	22	19	17	0	0	2	0	0	2	0	0
Year	8.5	NW.	49	SE.	7	46	26	42	122	117	61	29	275	14	109	150	107	164	126	8	4	21	8	7	28	1	0

PUEBLO, COLO.

[H=4,713 ft.; h_t=74 ft.; h_r=65 ft.; h_a=81 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Aurora.
January	6.6	NW.	47	W.	2	5	6	7	6	1	4	11	19	3	10	14	7	4	4	3	0	1	1	0	28	0	0
February	7.8	NW.	38	NW.	0	13	2	2	10	6	3	6	15	1	16	9	4	1	1	1	0	0	2	0	28	0	0
March	10.0	NW.	50	N.	5	11	6	4	11	1	6	4	17	2	9	14	8	10	8	8	0	0	4	0	22	0	0
April	11.2	SE.	54	N.	3	7	2	6	11	4	8	8	9	5	13	14	3	4	3	1	0	0	0	0	9	1	0
May	9.3	SW.	38	SW.	0	9	3	3	11	1	12	7	11	0	11	14	6	4	4	0	2	0	0	4	0	2	0
June	8.1	NW.	42	N.	1	11	3	7	9	3	2	6	19	0	14	13	3	4	2	0	0	0	0	16	0	16	0
July	7.0	NW.	38	NW.	0	8	4	11	11	1	3	1	20	3	11	16	4	12	11	0	1	0	0	15	0	10	0
August	6.4	NW.	48	N.	1	11	5	4	11	7	0	6	17	1	12	15	4	5	5	0	0	0	0	16	0	6	0
September	6.5	SE.	37	N.	0	4	5	7	18	2	3	2	17	2	12	11	7	9	7	0	1	1	0	4	0	4	0
October	6.1	NW.	42	N.	1	8	3	8	9	5	5	5	18	1	16	5	10	5	4	2	0	0	0	0	7	0	0
November	7.2	NW.	38	NW.	0	7	2	5	13	2	2	9	18	2	11	12	7	4	3	4	0	0	5	0	21	0	0
December	5.6	NW.	35	N.	0	7	5	6	8	1	0	13	18	4	14	13	4	4	4	3	0	0	1	0	29	0	0
Year	7.6	NW.	54	N.	13	101	46	75	128	34	48	78	198	24	149	150	67	66	56	22	4	2	13	55	144	39	0

a By eye observations at 8 a. m and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

PYSHT, WASH.

[λ = —° —′ N.; φ = —° —′ W.; gravity corr., —.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January (a)						42.5	32.1	37.3	55	20							17.96	3.40			
February						47.1	35.5	41.3	54	27							11.39	2.75			
March						48.1	32.1	40.1	61	20							4.11	.88			
April						54.7	34.5	44.6	63	21							3.43	.49			
May						61.8	39.6	50.7	70	32							3.25	.50			
June						67.2	45.5	56.4	85	37							2.61	1.30			
July (b)						74.7	50.1	62.4	82	41							.00	.00			
August (c)						69.2	51.1	60.2	79	44							.04	.04			
September																					
October (b)						53.5	41.6	47.6	63	33							4.55	1.74			
November (a)						43.5	33.2	38.4	59	20							13.96	4.46			
December (d)						47.6	39.1	43.4	54	30							14.99	2.29			
Year																					

a For 28 days. b For 22 days. c For 18 days. d For 30 days.

RALEIGH, N. C.

[λ = 35° 45′ N.; φ = 78° 37′ W.; gravity corr., — 0.02.]

January	29.80	30.16	29.28	33.4	41.1	47.2	31.0	39.1	66	14	27	28	77	60	.159	.168	2.87	1.57	5.7	4.9	5.7
February	29.57	30.14	28.58	38.1	45.8	52.8	34.8	43.8	71	8	29	29	70	56	.182	.195	6.73	2.95	5.9	4.5	5.8
March	29.66	30.22	28.73	41.6	51.8	58.9	37.4	48.2	78	23	32	32	69	48	.207	.198	3.26	.94	5.7	3.5	5.3
April	29.76	30.11	29.46	57.0	65.9	74.5	52.6	63.6	95	31	47	44	72	49	.357	.328	1.50	.82	4.1	3.6	4.0
May	29.66	29.96	29.42	69.0	73.5	84.1	63.8	74.0	95	46	61	60	77	67	.544	.534	6.63	1.43	5.5	6.5	5.1
June	29.63	29.83	29.28	70.7	74.6	83.4	65.9	74.6	92	58	64	65	82	73	.614	.623	3.41	1.26	5.9	7.0	6.2
July	29.71	29.95	29.46	75.8	79.5	88.0	71.2	79.6	98	63	70	70	83	75	.739	.745	5.23	1.24	7.2	6.9	6.7
August	29.68	29.90	29.52	73.5	78.6	88.8	68.6	78.7	99	56	67	67	80	68	.667	.664	4.19	1.67	3.5	4.7	4.2
September	29.66	30.00	29.10	65.9	73.2	82.0	61.6	71.8	98	43	60	60	82	65	.546	.544	3.78	1.56	4.5	3.6	4.0
October	29.69	29.97	29.30	52.9	59.3	68.0	49.5	58.8	78	36	47	47	80	66	.330	337	2.07	1.12	5.4	4.0	5.2
November	29.85	30.25	29.38	49.5	55.9	65.7	44.9	55.3	79	29	44	46	82	72	.306	.337	2.50	1.23	5.4	5.0	4.7
December	29.84	30.41	29.32	34.7	41.9	49.4	31.4	40.4	65	17	28	30	74	64	.161	.176	1.84	.79	4.7	3.3	4.5
Year	29.71	30.41	28.58	55.2	61.8	70.2	51.1	60.7	99	8	48	48	77	64	.401	.404	43.91	2.95	5.3	4.8	5.1

RAPID CITY, S. DAK.

[λ = 44° 4′ N.; φ = 103° 12′ W.; gravity corr., 0.00.]

January	26.60	27.07	26.21	18.9	25.5	36.6	13.4	25.0	63	—14	7	13	61	60	.066	.083	0.27	0.23	5.3	5.5	5.9
February	26.54	26.92	26.04	27.4	34.4	44.7	21.4	33.0	67	— 1	15	20	61	57	.087	.107	.22	.09	4.3	5.0	5.1
March	26.55	26.97	25.73	20.9	29.4	36.7	15.5	26.1	73	—12	12	18	71	64	.086	.105	1.35	.70	7.1	6.8	7.0
April	26.49	26.94	26.02	37.0	52.3	57.5	34.0	45.8	83	14	25	30	64	47	.140	.170	1.67	.61	5.2	7.5	6.4
May	26.47	26.78	26.08	49.8	66.0	70.1	45.5	57.8	90	31	37	34	63	34	.224	.209	.60	.14	6.1	6.8	6.5
June	26.61	26.94	26.25	60.9	73.9	80.8	54.2	67.5	92	43	47	45	62	39	.331	.313	3.35	2.32	4.4	6.6	5.7
July	26.67	26.95	26.43	64.9	78.3	83.6	59.9	71.8	100	50	53	54	67	47	.407	.423	1.73	.69	4.8	6.6	5.9
August	26.65	26.95	26.38	60.8	80.4	84.6	56.5	70.6	100	47	46	43	60	29	.321	.285	.13	.06	3.3	4.3	4.0
September	26.65	26.97	26.26	49.2	59.9	67.1	46.3	56.7	91	30	42	43	77	59	.271	.290	2.58	1.03	5.8	5.2	6.5
October	26.64	27.00	26.28	39.3	50.0	59.9	34.4	47.2	82	24	28	33	64	55	.151	.190	.68	.38	4.5	3.6	4.4
November	26.60	27.08	26.09	19.2	21.3	30.2	11.6	20.9	70	— 9	12	14	75	75	.078	.086	1.09	.32	6.4	7.0	7.8
December	26.61	27.17	26.18	33.3	37.5	49.5	26.2	37.8	70	— 3	19	23	61	57	.106	.120	.01	.01	4.0	3.8	4.9
Year	26.59	27.17	25.73	40.1	50.7	58.4	34.9	46.7	100	—14	29	31	66	52	.189	.198	13.68	2.32	5.1	5.7	5.8

RED BLUFF, CAL.

[λ = 40° 10′ N.; φ = 122° 15′ W.; gravity corr., —0.01.]

January	29.68	30.02	29.23	43.9	52.5	55.7	41.9	48.8	65	30	41	43	89	72	.264	.285	7.30	1.38	6.5	7.2	7.0
February	29.82	29.98	29.54	44.6	61.8	64.1	42.3	53.2	75	34	37	37	76	43	.225	.233	.27	.17	1.7	3.9	3.0
March	29.68	30.02	29.19	47.4	59.9	61.9	45.7	53.8	76	26	43	42	86	57	.294	.289	3.06	.58	5.8	6.2	6.3
April	29.64	29.94	29.28	44.9	58.9	61.1	43.3	52.2	74	34	40	36	83	46	.251	.222	3.67	1.80	5.6	6.0	5.9
May	29.65	29.92	29.41	51.9	69.6	71.4	50.9	61.2	94	39	42	40	72	38	.283	.268	2.42	.77	3.5	3.5	3.7
June	29.54	29.74	29.34	54.8	89.1	91.0	63.8	77.4	102	50	43	42	49	22	.288	.275	T.	T.	1.3	2.1	1.9
July	29.50	29.74	29.32	72.2	97.4	99.3	71.3	85.3	109	57	51	50	48	22	.381	.368	.00	.00	0.9	1.3	0.9
August	29.57	29.76	29.44	66.3	91.1	92.7	64.9	78.8	100	59	48	45	52	22	.333	.311	.54	.54	2.4	2.6	2.2
September	29.53	29.79	29.17	62.2	83.3	85.2	60.5	72.8	100	51	46	45	58	29	.312	.307	.63	.58	2.1	2.7	2.3
October	29.58	29.88	29.30	57.5	76.9	79.5	54.9	67.2	94	44	40	40	55	31	.251	.257	.66	.61	2.1	2.7	2.4
November	29.72	30.06	29.34	44.5	55.6	58.6	42.9	50.8	67	27	39	36	80	52	.246	.225	3.41	1.36	4.6	6.3	5.5
December	29.79	30.06	29.35	44.0	53.0	56.1	41.9	49.0	63	35	41	45	91	75	.262	.300	6.20	2.64	5.1	6.3	6.2
Year	29.64	30.06	29.17	53.7	70.8	73.0	52.0	62.5	109	26	43	42	70	42	.283	.278	28.16	2.64	3.5	4.2	3.9

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

PYSHT, WASH.

[H = — ft.; h_t = — ft.; h_r = — ft.; h_a = — ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	.....	E.	....	.....	....	0	0	9	3	1	4	5	0	4	3	0	25	24	21	5	0	0	2	0	15	0	0
February	.....	W.	....	.....	....	0	0	6	0	2	3	6	0	10	2	3	24	25	21	1	0	0	0	0	8	0	0
March	.....	E.	....	.....	....	0	0	11	0	1	0	7	0	8	6	8	17	13	9	0	0	0	1	0	17	0	0
April	.....	E.	....	.....	....	0	0	10	1	0	5	7	0	7	9	2	19	19	15	0	0	0	0	0	5	0	0
May	.....	W.	....	.....	....	0	4	5	2	0	0	16	0	4	8	6	17	17	16	0	0	0	0	0	0	0	0
June	.....	W.	....	.....	....	0	0	3	0	0	6	18	1	2	12	5	13	10	8	0	0	0	0	0	0	0	0
July	.....	W.	....	.....	....	0	0	9	0	0	0	12	0	1	19	0	3	0	0	0	0	0	0	0	0	0	0
August	.....	W.	....	.....	....	0	0	2	0	0	0	8	0	8	11	2	5	2	0	0	0	0	0	0	0	0	0
September	.....		....	.....	....																						
October	.....	W.	....	.....	....	0	0	1	1	1	0	4	0	15	6	5	11	8	7	0	0	0	0	0	0	0	0
November	.....	E.	....	.....	....	0	0	16	2	0	1	3	0	5	5	2	21	16	15	2	0	0	2	0	10	0	0
December	.....	E.	....	.....	....	0	0	11	1	8	3	0	0	11	3	1	26	24	23	0	0	0	0	0	1	0	0
Year	.....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

RALEIGH, N. C.

[H = 375 ft.; h_t = 93 ft.; h_r = 85 ft.; h_a = 101 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	6.4	N.	32	NW.	0	21	8	4	1	8	8	1	11	0	10	6	15	5	2	0	0	2	3	0	15	0	0
February	8.7	SW.	34	SW.	0	8	3	3	2	6	19	9	8	0	7	11	11	12	10	2	0	2	3	0	9	1	0
March	8.8	NW.	32	W.	0	6	6	4	1	10	12	6	16	1	10	12	9	10	8	1	0	0	0	0	10	1	0
April	6.6	S.	27	NW.	0	10	4	4	5	12	11	6	7	1	15	11	4	7	6	0	1	1	0	5	1	2	0
May	5.1	SW.	30	N.	0	8	5	6	6	10	19	1	7	0	10	13	8	14	12	0	2	0	0	7	0	12	0
June	5.0	SW.	26	NW.	0	7	9	7	3	6	14	1	10	3	5	12	13	13	7	0	0	0	0	3	0	8	0
July	5.4	SW.	26	NW.	0	1	4	5	1	14	23	7	6	1	4	14	13	14	11	0	0	0	0	13	0	5	0
August	4.6	S.	25	N.	0	10	5	3	7	12	11	5	6	3	13	16	2	8	6	0	0	0	0	17	0	5	0
September	4.9	N.	27	NW.	0	12	10	8	4	9	9	2	4	2	14	10	6	8	6	0	0	0	0	5	0	3	0
October	5.6	N.	24	N.	0	15	11	1	4	11	3	3	12	2	8	13	10	6	6	0	0	1	0	0	0	0	0
November	6.1	SW.	24	NE.	0	11	7	5	4	6	16	1	4	6	14	9	7	7	5	0	0	3	0	0	1	1	0
December	6.3	N.	25	N.	0	22	4	2	2	4	10	11	6	1	16	6	9	7	5	2	0	0	2	0	18	0	0
Year	6.1	SW.	34	SW.	0	131	76	52	40	108	155	53	97	20	126	133	107	111	84	5	3	9	8	50	54	38	0

RAPID CITY, S. DAK.

[H = 3,260 ft.; h_t = 53 ft.; h_r = 46 ft.; h_a = 61 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	8.8	W.	48	N.	2	7	0	7	8	7	11	13	11	0	6	17	8	3	1	3	0	0	12	0	24	0	0
February	10.6	NW.	48	NW.	4	5	1	3	0	0	15	15	18	1	7	18	4	5	3	6	0	1	6	0	26	0	1
March	10.1	NW.	44	NW.	1	10	4	8	7	4	10	6	13	0	1	16	14	16	6	13	0	0	12	0	26	0	0
April	10.8	N.	58	N.	2	13	3	5	2	6	12	8	11	0	8	8	14	13	7	5	0	0	1	0	15	1	0
May	11.0	W.	49	W.	3	9	3	8	6	6	5	15	10	0	2	21	8	11	7	0	0	0	0	0	1	3	1
June	10.6	S.	47	SW.	1	4	4	6	4	13	9	10	10	0	6	18	6	11	5	0	1	0	0	2	0	11	0
July	8.4	N.	38	SW.	0	15	1	8	8	9	7	10	4	0	6	16	9	12	5	0	2	0	0	6	0	6	3
August	9.8	W.	48	SW.	1	11	5	9	6	5	5	14	7	0	15	11	5	5	1	0	0	0	0	11	0	3	0
September	8.8	S.	36	W.	0	10	4	4	4	12	8	8	10	0	8	8	14	16	9	0	0	1	0	1	1	4	0
October	9.7	SW.	36	NW.	0	4	3	3	5	5	15	9	15	3	15	11	5	4	3	2	0	0	0	0	11	0	0
November	8.8	SW.	54	SW.	3	12	5	5	8	3	14	1	11	1	3	5	22	10	6	10	0	0	18	0	28	0	0
December	7.9	SW.	36	SE.	0	1	8	2	5	1	33	6	5	1	13	11	7	1	0	1	0	0	2	0	23	0	0
Year	9.6	SW.	58	N.	17	101	41	68	61	71	144	115	125	6	90	160	116	107	53	40	3	2	51	20	155	28	5

RED BLUFF, CAL.

[H = 334 ft.; h_t = 54 ft.; h_r = 44 ft.; h_a = 58 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.0	SE.	42	SE.	1	6	0	1	26	3	1	4	20	1	4	10	17	13	13	0	0	1	0	0	1	0	0
February	6.4	NW.	28	W.	0	11	0	1	9	4	4	1	28	0	17	9	3	4	2	0	0	0	0	0	0	0	0
March	7.2	SE.	28	N.	0	7	0	0	20	7	3	5	19	1	9	6	16	14	13	2	0	0	0	0	2	2	0
April	8.1	SE.	30	SW.	0	1	1	1	26	8	4	7	12	0	9	8	13	11	10	0	2	0	0	0	0	1	0
May	8.2	NW.	36	NW.	0	3	1	1	16	7	4	3	27	0	15	11	5	11	8	0	0	0	0	4	0	2	0
June	7.4	NW.	36	NW.	0	9	0	0	22	3	2	1	22	1	25	3	2	0	0	0	0	0	0	19	0	0	0
July	5.1	SE.	24	N.	0	7	0	2	39	1	0	1	12	0	28	3	0	0	0	0	0	0	0	26	0	0	0
August	4.0	SE.	17	SE.	0	0	1	1	32	3	1	3	20	1	20	10	1	1	1	0	0	0	0	21	0	0	0
September	5.5	NW.	24	NW.	0	4	0	4	22	3	1	2	24	0	22	4	4	4	3	0	0	0	0	7	0	0	0
October	6.4	NW.	33	NW.	0	16	1	0	16	2	1	1	25	0	23	5	3	3	3	0	0	0	0	6	0	0	0
November	7.3	NW.	33	N.	0	14	1	1	17	2	1	1	22	1	11	6	13	8	8	0	0	0	0	0	3	0	0
December	5.7	NW.	35	SE.	0	7	0	2	21	8	1	3	22	3	9	8	14	13	11	0	0	3	0	0	0	0	0
Year	6.7	SE.	42	SE.	1	85	5	14	268	46	28	32	253	8	192	83	91	82	72	2	2	4	0	83	6	5	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

ROCHESTER, N. Y.

[λ = 43° 8′ N.; φ = 77° 42′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.57	29.94	29.11	22.0	23.8	27.5	18.2	22.8	40	—10	17	20	80	82	.100	.109	3.38	1.04	9.5	9.4	7.4
February	29.29	30.01	28.36	23.6	24.0	31.3	18.0	24.6	56	— 8	19	19	80	79	.113	.107	5.37	1.29	9.1	7.7	6.7
March	29.44	30.03	28.77	23.2	25.9	32.8	17.9	25.4	61	4	16	18	74	72	.098	.105	6.32	1.34	6.5	4.8	5.1
April	29.53	30.00	29.16	47.6	50.9	59.3	41.6	50.4	82	19	40	41	74	70	.269	.288	1.09	.64	5.5	4.9	4.5
May	29.43	29.77	28.98	60.0	64.0	72.5	53.9	63.2	89	44	49	50	67	61	.352	.363	1.64	.79	5.3	3.4	3.1
June	29.42	29.70	29.04	64.9	67.4	76.7	56.2	66.4	88	44	53	54	66	63	.414	.424	2.80	1.62	3.4	2.8	3.3
July	29.45	29.76	29.09	68.5	71.7	80.4	62.6	71.5	91	54	59	59	72	67	.507	.519	4.75	2.11	5.0	4.7	4.2
August	29.48	29.79	29.19	67.5	70.3	79.6	59.8	69.7	92	46	58	59	73	68	.505	.517	2.71	.72	4.4	4.4	4.3
September	29.47	29.76	28.99	58.1	59.9	68.8	50.9	59.8	92	34	50	51	74	72	.307	.383	3.50	.76	5.9	5.2	5.8
October	29.49	29.94	29.10	44.8	46.9	54.2	40.2	47.2	76	30	37	39	75	73	.227	.244	.58	.33	6.5	5.1	6.7
November	29.56	30.05	29.01	40.9	42.2	50.2	35.0	42.6	71	18	34	34	77	74	.210	.213	2.49	.60	7.1	7.5	7.5
December	29.58	30.23	28.95	26.8	29.6	34.3	23.4	28.8	55	8	20	22	73	71	.112	.121	2.21	.82	8.3	7.5	8.1
Year	29.48	30.23	28.36	45.7	48.0	55.6	39.8	47.7	92	—10	38	39	74	71	.273	.283	36.84	2.11	6.4	5.6	5.6

ROSEBURG, OREG.

[λ = 43° 13′ N.; φ = 123° 20′ W.; gravity corr., 0.00.]

January	29.36	29.84	28.66	41.8	46.5	49.8	39.2	44.5	63	31	38	40	89	80	.233	.252	8.33	1.52	6.8	8.3	7.5
February	29.63	29.90	29.22	38.4	52.1	54.0	36.4	45.2	67	24	37	40	93	66	.220	.253	3.01	.90	4.3	6.9	5.6
March	29.46	29.95	28.95	40.0	53.8	54.7	38.5	46.6	70	18	37	41	91	64	.234	.265	4.15	.62	6.1	7.1	6.7
April	29.40	29.79	28.95	40.3	51.5	54.1	38.5	46.3	65	32	38	37	90	60	.226	.221	4.18	.56	7.9	8.9	8.4
May	29.48	29.97	29.15	45.3	58.8	60.9	44.7	52.8	81	35	42	41	90	56	.274	.263	4.52	1.21	7.5	7.1	7.2
June	29.47	29.76	29.21	48.8	73.0	74.4	48.5	61.4	98	37	46	46	89	39	.308	.312	.27	.16	4.5	3.6	4.0
July	29.40	29.63	29.20	55.9	86.0	87.0	55.6	71.3	99	49	52	50	86	31	.388	.371	.00	.00	1.7	1.1	1.1
August	29.44	29.56	29.26	55.9	78.4	79.5	54.9	67.2	95	49	52	51	88	42	.394	.378	.99	.88	5.3	3.6	4.2
September	29.42	29.66	29.08	48.2	72.6	74.1	47.0	60.6	91	37	46	46	93	42	.321	.323	.67	.66	2.7	1.9	2.3
October	29.45	29.68	28.93	43.5	64.6	66.6	41.8	54.2	86	32	42	44	95	51	.272	.297	2.06	1.04	2.7	4.2	3.5
November	29.47	29.81	28.98	38.9	45.9	49.0	36.4	42.7	65	14	36	38	90	76	.224	.242	9.91	2.82	6.9	8.0	7.4
December	29.47	29.86	29.02	42.7	48.6	50.6	40.5	45.6	65	31	40	43	90	83	.248	.281	5.60	1.48	5.5	8.1	6.8
Year	29.45	29.97	28.66	45.0	61.0	62.9	43.5	53.2	99	14	42	43	90	58	.278	.288	43.69	2.82	5.2	5.7	5.4

SACRAMENTO, CAL.

[λ = 38° 35′ N.; φ = 121° 30′ W.; gravity corr., —0.02.]

January	29.98	30.29	29.63	45.6	53.7	57.1	43.3	50.2	62	28	42	45	89	74	.283	.305	9.76	1.84	5.4	6.1	6.5
February	30.09	30.26	29.81	47.5	60.3	62.8	45.4	54.1	72	38	42	43	83	54	.372	.284	.09	.06	2.3	2.7	3.1
March	29.97	30.20	29.48	49.3	60.6	63.7	47.2	55.4	77	34	45	47	87	62	.312	.335	2.57	.84	5.0	5.2	5.1
April	29.96	30.20	29.64	46.3	58.4	61.8	44.8	53.3	72	36	43	43	88	58	.276	.277	5.34	2.18	4.7	5.2	5.3
May	29.94	30.17	29.66	51.6	67.5	70.0	50.1	60.0	96	39	46	46	82	49	.315	.328	.92	.56	3.2	3.5	4.5
June	29.81	29.98	29.56	59.0	82.1	85.2	57.8	71.5	99	46	51	53	77	38	.380	.411	.00	.00	1.7	1.8	2.1
July	29.79	30.00	29.59	62.8	88.0	91.2	61.8	76.5	104	51	55	59	77	39	.433	.499	T.	T.	1.0	0.9	1.7
August	29.86	30.05	29.75	58.6	83.2	86.6	57.5	72.0	95	54	54	56	84	40	.414	.450	.20	.20	2.0	2.3	3.2
September	29.80	30.05	29.46	56.0	78.0	81.2	54.8	68.0	94	47	51	53	84	44	.377	.414	.31	.24	3.2	2.3	2.9
October	29.83	29.97	29.64	56.3	78.7	78.4	52.5	65.4	92	44	45	47	66	34	.300	.336	.55	.45	0.0	2.6	2.8
November	(a)	.....	.....	.....	.....	61.5	43.7	52.6	72	31	.....	.....	.....	.....	.....	.....	3.56	1.60	.....	.....	5.2
December	.....	30.33	29.65	.....	52.9	56.2	42.5	49.4	63	33	.....	45	.....	75	.....	.297	1.76	.54	.....	4.9	7.0
Year	.....	.....	.....	.....	.....	71.3	50.1	60.7	104	28	.....	.....	.....	.....	.....	.....	25.06	2.18	.....	.....	4.1

a 8 a. m. observations discontinued.

ST. LOUIS, MO.

[λ = 38° 38′ N.; φ = 90° 12′ W.; gravity corr., —0.02.]

January	29.55	30.14	29.00	30.7	37.6	41.5	28.5	35.0	62	5	26	29	81	71	.148	.170	1.43	0.97	5.8	4.7	5.9
February	29.41	29.91	28.91	31.9	38.3	44.6	29.1	36.8	75	5	26	28	78	66	.145	.161	2.81	1.77	6.3	5.6	6.1
March	29.48	29.97	28.80	34.3	44.0	48.8	32.4	40.6	74	19	28	32	78	66	.162	.196	2.03	.68	5.5	5.6	5.2
April	29.44	29.80	29.08	56.9	68.4	74.7	54.8	64.8	88	30	48	49	73	52	.367	.386	2.43	1.45	5.3	4.9	4.7
May	29.37	29.64	28.75	67.5	75.9	82.0	63.9	73.0	91	56	61	64	80	68	.541	.604	9.12	3.08	5.1	4.6	4.5
June	29.40	29.71	29.13	69.5	77.5	82.6	65.4	74.0	91	56	64	64	82	64	.597	.601	4.57	.72	5.0	4.3	5.1
July	29.45	29.63	29.26	74.4	81.4	87.6	70.4	79.0	98	58	67	69	80	67	.681	.719	4.67	1.80	4.4	4.1	4.4
August	29.46	29.82	29.16	72.9	82.3	88.7	70.1	79.4	100	60	65	67	78	61	.643	.681	2.12	1.36	2.8	2.6	3.1
September	29.44	29.84	29.17	61.4	70.0	77.4	59.0	68.2	95	45	56	59	83	71	.470	.529	2.42	.70	4.9	4.8	5.4
October	29.46	29.75	28.99	48.9	60.0	66.7	47.6	57.2	80	36	43	44	80	57	.289	.305	1.20	.40	3.8	1.5	2.9
November	29.56	30.16	29.06	41.6	47.1	54.3	38.1	46.2	78	13	35	38	78	70	.232	.262	3.70	1.08	6.2	4.4	6.4
December	29.60	30.13	29.16	35.4	43.3	47.5	34.2	40.8	68	17	29	31	77	64	.164	.184	1.05	.94	5.4	5.0	5.8
Year	29.47	30.16	28.75	52.1	60.5	66.4	49.5	57.9	100	5	46	48	79	65	.370	.400	37.55	3.08	5.0	4.3	5.0

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

ROCHESTER, N. Y.

[H = 523 ft.; h_t = 81 ft.; h_r = 78 ft.; h_a = 90 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	8.2	W.	34	NW.	0	2	5	9	11	1	12	15	7	0	1	15	15	22	18	21	0	0	17	0	30	0	0
February	10.7	NW.	36	W.	0	5	3	3	6	6	15	9	11	0	4	12	13	23	17	20	0	0	13	0	24	0	0
March	10.9	W.	32	W.	0	1	3	6	4	3	15	16	14	0	14	6	11	21	12	18	0	0	17	0	28	1	0
April	8.2	SW.	36	SW.	0	1	6	4	6	8	18	10	7	0	13	12	5	12	7	4	1	0	2	0	8	3	0
May	8.4	SW.	41	SW.	1	1	7	3	5	7	16	16	7	0	21	9	1	9	6	0	0	0	0	0	0	8	1
June	7.0	SW.	27	SW.	0	2	7	7	2	6	12	13	10	1	19	7	4	8	7	0	0	0	0	0	0	5	0
July	7.0	SW.	24	SW.	0	2	1	5	2	3	25	14	9	1	16	9	6	14	9	0	0	0	0	1	0	7	1
August	6.7	SW.	27	SW.	0	2	2	0	1	4	28	15	10	0	13	15	3	12	9	0	0	1	0	3	0	9	1
September	6.7	SW.	34	SW.	0	4	7	2	8	3	23	6	6	1	8	11	11	11	11	0	0	0	0	1	0	1	0
October	6.7	SW.	25	NW.	0	4	7	5	8	4	16	11	7	0	6	8	17	8	4	0	0	0	0	0	2	0	0
November	8.8	SW.	36	SW.	0	0	1	2	11	4	22	12	8	0	3	12	15	18	11	6	0	0	2	0	12	0	0
December	8.4	SW.	30	W.	0	4	3	5	4	12	16	13	5	0	4	5	22	15	10	10	0	0	14	0	20	0	1
Year	8.1	SW.	41	SW.	1	28	52	51	68	61	218	150	101	3	122	121	123	173	121	79	1	1	65	5	124	34	4

ROSEBURG, OREG.

[H = 521 ft.; h_t = 56 ft.; h_r = 48 ft.; h_a = 67 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	3.9	SE.	24	SW.	0	2	1	11	15	10	8	8	6	0	6	14	17	20	16	0	0	5	0	0	3	0	0
February	3.3	E.	36	SW.	0	2	3	7	11	6	9	8	12	0	9	9	11	16	10	1	0	6	0	0	7	0	0
March	3.7	SW.	26	NE.	0	6	4	8	7	2	16	9	10	0	8	4	19	20	16	4	0	7	0	0	8	0	0
April	4.6	SW.	28	SW.	0	2	3	6	4	11	16	7	9	2	2	5	23	19	16	1	0	1	0	0	3	0	0
May	4.9	NW.	30	SW.	0	7	6	5	2	6	11	6	18	1	3	11	17	18	16	0	0	2	0	0	0	1	0
June	4.6	NW.	20	N.	0	19	10	0	7	0	2	1	18	3	15	6	9	3	2	0	0	0	0	1	0	0	0
July	4.0	NW.	16	NW.	0	15	21	4	0	0	0	0	19	3	26	5	0	0	0	0	0	0	0	9	0	0	0
August	3.7	NW.	14	NW.	0	14	6	1	3	1	2	4	27	4	15	7	9	3	2	0	0	0	0	3	0	1	0
September	2.9	NW.	20	N.	0	16	4	5	3	0	5	3	13	11	21	7	2	3	2	0	0	6	0	2	0	0	0
October	2.2	NW.	20	W.	0	8	2	6	2	3	5	0	17	19	17	9	5	8	8	0	0	9	0	0	1	0	0
November	3.4	SW.	24	S.	0	5	3	6	5	12	9	3	8	9	4	8	18	19	14	1	0	4	0	0	7	0	0
December	3.0	SE.	24	S.	0	4	3	7	14	10	10	2	6	6	5	9	17	19	16	0	0	9	0	0	2	0	0
Year	3.7	NW.	36	SW.	0	100	66	66	73	61	93	52	163	58	125	94	147	148	118	7	0	49	0	15	31	2	0

SACRAMENTO, CAL.

[H = 71 ft.; h_t = 106 ft.; h_r = 100 ft.; h_a = 117 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.6	SE.	44	SE.	4	3	6	1	16	14	12	1	9	0	7	10	14	13	12	0	0	0	0	0	3	0	0
February	7.7	NW.	32	SW.	0	13	4	0	9	5	5	1	21	0	10	12	1	2	1	0	0	0	0	0	0	0	0
March	9.6	SW.	48	S.	2	3	2	0	12	9	19	2	14	1	10	8	13	13	12	0	4	0	0	0	0	1	0
April	9.5	SW.	39	S.	0	2	2	3	11	10	24	2	5	1	12	7	11	10	9	0	0	1	0	0	0	0	0
May	10.5	SW.	36	NW.	0	7	3	0	12	8	19	0	13	0	15	8	8	6	5	0	0	0	0	2	0	0	0
June	9.6	SW.	30	NW.	0	5	4	1	16	3	25	1	5	0	21	8	1	0	0	0	0	0	0	9	0	0	0
July	8.9	SW.	27	SW.	0	2	0	0	13	11	35	0	1	0	27	4	0	0	0	0	0	0	0	17	0	0	0
August	8.7	SW.	28	SW.	0	2	0	1	12	11	38	2	1	0	19	10	2	1	1	0	0	0	0	7	0	0	0
September	7.3	SW.	24	SW.	0	9	3	1	8	13	17	1	8	0	21	7	2	3	2	0	0	0	0	2	0	0	0
October	7.7	N.	38	N.	0	19	3	1	3	16	2	2	1	0	19	9	3	2	2	0	0	0	0	1	0	0	0
November	8.0	NW.	28	SE.	0	7	2	0	6	2	2	0	9	0	13	8	9	8	7	0	0	0	0	0	1	0	0
December	7.6	SE.	36	SE.	0	5	5	3	23	6	5	0	15	0	4	11	16	10	9	0	0	10	0	0	0	0	0
Year	8.8	SW.	48	S.	6	77	34	11	141	108	198	12	102	2	184	102	80	68	60	0	4	11	0	38	4	1	0

ST. LOUIS, MO.

[H = 567 ft.; h_t = 110 ft.; h_r = 100 ft.; h_a = 210 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.5	SE.	32	NW.	0	5	12	5	9	10	3	6	11	1	10	8	13	7	3	0	0	2	5	0	18	0	0
February	12.7	NW.	42	NW.	1	7	4	1	3	7	10	6	19	1	6	10	13	6	6	4	0	1	3	0	19	0	0
March	12.1	NW.	48	SW.	1	11	10	4	9	6	4	4	14	0	9	12	10	12	10	5	1	0	2	0	18	2	0
April	14.1	S.	39	NW.	0	5	1	4	20	17	4	5	4	0	13	12	5	8	6	0	0	1	0	0	1	3	0
May	10.6	S.	80	NW.	3	2	5	1	19	22	7	4	2	0	16	9	6	15	15	0	3	0	0	2	0	9	0
June	8.2	S.	52	NW.	1	6	4	8	5	14	8	4	10	1	10	13	7	15	12	0	1	0	0	3	0	10	0
July	9.2	S.	41	SW.	2	10	4	2	7	19	12	5	1	2	16	8	7	13	12	0	0	0	0	9	0	9	0
August	8.9	S.	45	W.	1	12	5	3	6	22	7	4	3	0	20	11	0	7	4	0	0	0	0	14	0	5	0
September	9.8	S.	31	NE.	0	12	5	5	10	13	2	6	6	1	8	15	7	12	9	0	0	1	0	5	0	5	0
October	10.3	SE.	46	SW.	1	9	4	6	9	8	5	10	11	0	22	5	4	8	6	0	0	1	0	0	0	2	0
November	12.2	S.	36	S.	0	7	4	0	13	17	2	4	13	0	8	6	16	13	11	1	0	1	3	0	8	1	0
December	10.2	S.	30	SW.	0	12	0	5	10	16	9	4	6	0	12	4	15	4	2	0	0	0	1	0	12	0	0
Year	10.8	S.	80	NW.	10	98	58	44	120	171	73	62	100	6	150	113	103	120	96	10	5	7	14	33	76	46	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

ST. PAUL, MINN.

[λ = 44° 58′ N.; φ = 93° 03′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.21	29.73	28.59	12.2	18.8	23.2	7.9	15.6	44	—18	9	14	86	79	.075	.090	0.81	0.19	5.5	5.4	5.8
February	29.04	29.64	28.45	15.0	24.7	30.1	11.4	20.8	61	—14	10	16	80	68	.079	.101	.17	.07	3.8	4.3	4.9
March	29.11	29.64	28.11	19.1	29.3	34.5	15.7	25.1	58	— 8	14	18	79	61	.090	.134	2.93	1.26	5.1	6.5	5.5
April	29.03	29.58	28.46	42.0	51.5	55.8	39.0	47.4	80	13	36	39	80	63	.242	.269	5.63	.91	6.2	5.9	6.3
May	28.96	29.26	28.48	57.7	67.5	72.5	54.3	63.4	87	41	50	50	77	56	.376	.373	4.67	1.52	5.2	5.4	5.7
June	29.07	29.41	28.72	62.9	73.6	78.0	58.4	68.2	89	47	55	55	77	54	.446	.446	3.30	1.59	3.7	4.5	5.2
July	29.11	29.37	28.86	63.3	77.0	80.7	60.8	70.8	95	52	58	57	82	52	.486	.478	1.12	.37	4.2	3.6	5.2
August	29.08	29.42	28.63	61.6	76.2	81.2	58.8	70.0	100	45	55	55	81	48	.453	.448	4.48	1.68	4.1	4.0	4.4
September	29.11	29.45	28.71	48.5	61.0	66.3	46.7	56.5	81	32	44	45	85	57	.302	.318	2.45	1.44	4.7	4.9	6.0
October	29.10	29.50	28.27	38.6	48.2	54.8	36.2	45.5	75	21	33	34	80	60	.196	.214	3.39	1.79	4.2	4.5	5.0
November	29.16	29.78	28.26	19.0	23.3	29.0	14.6	21.8	50	—10	16	18	85	79	.098	.109	5.07	2.77	6.6	6.9	7.8
December	29.19	29.82	28.71	21.7	26.0	30.0	16.6	23.3	45	— 9	19	22	90	85	.112	.124	.71	.22	5.8	5.8	7.3
Year	29.10	29.82	28.11	38.5	48.1	53.0	35.0	44.0	100	—18	33	35	82	64	.246	.256	34.73	2.77	4.9	5.2	5.8

SALT LAKE CITY, UTAH.

[λ = 40° 46′ N.; φ = 111° 54′ W.; gravity corr., —0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
January	25.70	26.08	25.34	30.9	35.8	41.7	26.3	34.0	54	9	22	27	71	70	.124	.148	1.26	0.34	6.4	7.1	7.5
February	25.75	26.05	25.28	31.1	40.8	46.3	27.4	36.8	60	13	22	27	67	58	.115	.147	.69	.24	3.9	5.6	5.7
March	25.61	25.95	25.00	34.6	45.0	49.4	30.9	40.2	70	14	26	28	69	56	.142	.158	1.99	.34	6.8	7.1	7.4
April	25.52	26.05	25.16	40.1	51.8	56.5	36.3	46.4	74	18	26	27	59	44	.142	.150	2.53	1.06	5.8	6.7	7.2
May	25.56	25.80	25.16	45.5	58.0	61.8	41.1	51.4	88	30	35	34	67	45	.206	.200	3.67	1.35	6.2	7.4	7.4
June	25.63	25.94	25.35	61.0	80.0	83.0	57.1	70.0	93	44	44	40	54	26	.286	.256	.25	.23	2.4	4.6	5.1
July	25.67	25.82	25.49	65.4	82.7	86.4	62.1	74.2	97	55	49	48	57	34	.354	.256	1.35	.58	3.3	5.1	6.0
August	25.68	25.86	25.42	65.4	81.8	85.9	61.5	73.7	96	55	47	47	53	33	.329	.339	1.47	.65	2.7	3.9	4.6
September	25.62	25.98	25.28	57.0	71.0	75.8	52.3	64.0	90	36	40	40	54	34	.250	.250	.52	.25	3.0	4.4	4.8
October	25.65	25.89	25.32	47.3	60.6	66.1	42.6	54.4	82	33	32	35	57	41	.182	.205	.70	.32	2.1	3.6	3.6
November	25.66	26.10	25.08	33.8	38.7	45.7	28.6	37.2	65	—2	25	29	71	69	.148	.165	3.15	1.08	5.8	6.4	7.7
December	25.79	26.11	25.41	32.1	38.3	44.8	27.5	36.2	54	17	26	28	76	70	.137	.155	.84	.29	4.8	5.6	7.3
Year	25.65	26.11	25.00	45.4	57.0	62.0	41.1	51.5	97	—2	33	34	63	48	.201	.211	18.42	1.35	4.4	5.6	6.2

SAN ANTONIO, TEX.

[λ = 29° 27′ N.; φ = 98° 28′ W.; gravity corr., —0.04.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
January	29.40	29.96	28.94	46.8	57.1	63.6	44.5	54.0	80	27	40	39	78	56	.275	.265	2.90	1.11	5.3	4.9	6.5
February	29.32	29.73	28.87	47.6	60.7	67.2	45.8	56.7	84	33	39	36	72	43	.261	.229	2.36	.62	4.4	4.3	5.3
March	29.29	29.70	28.98	53.0	64.9	72.1	49.7	60.9	90	35	47	48	81	58	.361	.370	.66	.30	6.6	6.0	6.3
April	29.29	29.81	29.01	63.5	72.7	79.0	61.6	70.3	91	44	59	58	86	64	.530	.517	2.73	1.82	8.4	7.1	7.2
May	29.21	29.42	28.96	71.5	82.7	88.2	69.5	78.8	97	61	68	65	90	57	.694	.622	2.74	2.25	8.8	4.8	5.9
June	29.23	29.50	29.01	74.3	91.5	96.2	71.7	84.0	100	62	68	60	80	37	.687	.530	.61	.43	4.8	2.5	3.1
July	29.31	29.48	29.16	75.6	87.4	94.0	73.5	83.8	100	68	72	67	88	53	.770	.657	2.69	1.84	5.9	5.4	5.2
August	29.31	29.52	29.12	74.6	89.8	96.3	73.2	84.8	100	67	70	63	84	42	.729	.574	2.96	2.72	4.3	4.0	3.8
September	29.25	29.48	29.06	70.3	80.5	89.0	68.4	78.7	100	47	67	64	89	60	.681	.623	8.87	3.90	5.2	4.2	4.5
October	29.31	29.48	29.05	60.6	70.4	77.1	59.3	68.2	87	50	57	59	90	68	.487	.503	6.04	1.75	6.2	5.6	6.1
November	29.38	29.81	29.02	56.2	63.1	70.2	53.7	62.0	84	32	50	50	80	63	.408	.406	.79	.76	3.9	3.7	5.7
December	29.48	29.82	29.04	46.5	60.2	68.0	45.0	56.5	83	30	37	40	71	50	.240	.268	.74	.33	3.8	3.2	3.9
Year	29.32	29.96	28.87	61.7	73.4	80.1	59.7	69.9	100	27	56	54	82	54	.511	.464	34.09	3.90	5.6	4.6	5.3

SAN DIEGO, CAL.

[λ = 32° 43′ N.; φ = 117° 10′ W.; gravity corr., —0.03.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a.m.	8 p.m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	8 a.m.	8 p.m.	Total.	Maximum in 24 hours.	8 a.m.	8 p.m.	Daylight.
January	29.98	30.12	29.63	50.6	58.4	64.3	46.7	55.5	77	39	40	49	72	73	.270	.350	0.27	0.57	2.4	5.8	4.4
February	30.00	30.20	29.81	51.8	62.4	67.7	47.7	57.7	83	39	36	45	59	57	.228	.308	.02	.02	2.6	3.2	2.9
March	29.94	30.15	29.65	52.7	62.6	66.7	49.6	58.2	85	41	46	48	80	62	.376	.528	2.89	1.32	3.9	4.5	4.8
April	29.97	30.13	29.83	51.3	60.8	63.9	49.1	56.5	74	42	42	47	73	61	.277	.324	.25	.12	4.2	2.3	2.2
May	29.91	30.07	29.71	57.1	65.6	68.9	55.0	62.0	98	48	51	54	80	66	.376	.414	.03	.03	6.5	3.4	3.5
June	29.84	30.03	29.68	61.4	66.8	70.4	59.3	64.8	89	54	57	58	86	74	.467	.484	.01	.01	7.6	3.0	4.2
July	29.88	30.00	29.70	65.3	70.4	73.9	63.4	68.6	80	56	60	61	84	72	.525	.537	T.	T.	7.5	3.9	3.4
August	29.92	30.08	29.81	65.7	71.7	75.0	63.9	69.4	88	59	61	62	86	72	.542	.556	.13	.09	8.0	1.9	1.8
September	29.83	29.97	29.51	62.5	69.2	73.0	60.4	66.7	80	54	58	59	85	71	.487	.507	T.	T.	6.1	1.8	2.1
October	29.86	30.04	29.67	59.7	66.5	70.3	58.0	64.2	79	52	56	58	88	75	.450	.488	.97	.64	3.7	2.4	3.1
November	29.96	30.25	29.63	53.7	62.4	67.1	52.3	59.7	76	43	47	53	80	72	.338	.405	.98	.88	3.4	3.2	2.7
December	30.05	30.25	29.71	52.4	60.8	67.6	50.5	59.0	78	46	43	50	74	70	.288	.364	2.18	1.10	2.5	3.3	3.4
Year	29.93	30.25	29.51	57.0	64.8	69.1	54.7	61.9	98	39	50	54	79	69	.385	.439	8.73	1.32	4.9	3.2	3.2

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

ST. PAUL, MINN.

[H = 837 ft.; h_t = 114 ft.; h_r = 93 ft.; h_a = 124 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	7.8	SE.	29	NW.	0	3	4	5	17	4	2	7	20	0	8	11	12	11	8	8	0	1	21	0	31	0	0
February	8.9	NW.	42	NW.	1	0	5	2	14	1	5	7	24	0	8	14	7	6	2	6	0	0	17	0	29	0	0
March	9.3	NW.	38	NW.	0	1	6	1	14	6	5	7	22	0	7	15	9	10	6	7	0	0	13	0	29	2	0
April	9.0	SE.	37	SE.	0	1	2	7	20	2	6	6	15	1	6	13	11	18	16	4	1	0	2	0	9	7	0
May	9.0	SE.	36	W.	0	2	3	1	21	4	11	6	14	0	3	21	7	15	12	0	1	0	0	0	0	6	0
June	6.5	SE.	32	NW.	0	3	2	2	20	5	8	5	13	2	8	15	7	9	6	0	0	0	0	0	0	9	0
July	6.1	NW.	28	NW.	0	2	4	3	14	9	6	3	21	0	7	18	6	7	5	0	0	1	0	2	0	7	0
August	6.5	NW.	60	NW.	1	2	0	3	13	9	12	3	20	0	13	14	4	10	9	0	2	0	0	2	0	7	2
September	7.3	SE.	29	SW.	0	1	3	1	19	5	9	4	17	1	7	12	11	8	6	0	0	1	0	0	0	1	0
October	6.8	SE.	26	SE.	0	0	3	5	16	5	6	8	19	0	12	7	12	9	9	1	0	1	0	0	10	2	0
November	8.1	W.	29	SW.	0	2	5	4	7	4	7	12	19	0	2	12	16	15	9	12	0	0	14	0	30	0	0
December	6.3	SE.	23	NW.	0	0	3	3	17	11	10	6	12	0	5	8	18	8	6	8	0	5	17	0	30	0	0
Year	7.6	SE.	60	NW.	2	17	40	37	192	65	87	74	216	4	86	160	120	126	94	46	4	9	84	4	168	41	2

SALT LAKE CITY, UTAH.

[H = 4,344 ft.; h_t = 83 ft.; h_r = 75 ft.; h_a = 90 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	5.7	SE.	36	S.	0	0	2	4	26	10	3	8	8	1	4	8	19	9	7	3	0	0	2	0	18	0	0
February	5.2	SE.	48	NW.	1	5	4	4	16	3	3	9	13	1	9	10	10	7	6	6	0	0	1	0	25	0	0
March	5.9	NW.	38	S.	0	7	6	2	13	4	5	10	11	4	4	11	16	16	12	9	0	0	0	0	20	0	0
April	7.9	SE.	37	W.	0	4	4	2	16	4	5	7	14	4	3	12	15	11	10	7	1	0	0	0	7	0	0
May	6.7	NW.	48	W.	1	4	4	4	15	3	0	7	22	3	3	14	14	15	13	2	0	0	0	0	2	1	0
June	6.2	NW.	30	S.	0	7	5	9	17	2	2	3	15	0	9	17	4	2	1	0	0	0	0	3	0	0	0
July	5.5	SE.	34	E.	0	0	3	9	18	10	2	6	14	0	9	11	11	8	8	0	0	0	0	11	0	4	0
August	5.6	SE.	26	SE.	0	2	2	7	24	9	0	2	13	3	17	5	9	8	7	0	0	0	0	7	0	4	0
September	6.9	SE.	44	E.	1	0	5	9	16	4	3	4	18	1	13	12	5	8	4	0	0	0	0	1	0	1	0
October	5.7	SE.	34	NW.	0	2	4	6	21	1	2	10	16	0	19	5	7	4	4	0	1	0	0	0	0	1	0
November	5.8	SE.	39	NW.	0	0	4	4	20	7	3	8	13	1	5	5	20	11	11	8	1	0	5	0	18	0	0
December	4.4	SE.	26	SW.	0	2	1	9	22	4	3	8	12	1	2	13	16	6	6	5	0	0	0	0	27	0	0
Year	6.0	SE.	48	NW.	3	33	44	69	224	61	31	82	169	19	97	123	146	105	89	40	3	0	8	22	117	11	0

SAN ANTONIO, TEX.

[H = 704 ft.; h_t = 95 ft.; h_r = 83 ft.; h_a = 104 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.9	N.	37	N.	0	18	11	6	8	5	2	2	8	2	6	12	13	13	8	0	0	4	0	0	2	1	0
February	9.5	N.	36	NW.	0	17	4	4	6	5	8	6	8	0	10	10	9	9	6	0	0	2	0	0	0	0	0
March	10.2	SE.	48	N.	2	15	9	12	18	3	3	0	2	0	8	7	16	7	5	0	0	2	0	0	0	0	0
April	10.5	SE.	46	N.	2	5	2	10	34	5	0	1	3	0	3	8	19	9	5	0	0	3	0	1	0	0	0
May	10.5	SE.	60	NW.	1	0	0	9	27	23	2	0	1	0	7	15	9	4	3	0	1	1	0	11	0	2	0
June	7.9	SE.	52	N.	1	4	4	8	20	14	3	3	3	1	16	10	4	4	3	0	0	0	0	29	0	1	0
July	8.1	SE.	35	E.	0	4	2	12	27	13	1	0	0	3	8	15	8	9	8	0	0	0	0	27	0	3	0
August	7.7	SE.	40	SE.	1	5	5	6	30	10	1	1	2	2	15	12	4	5	3	0	0	0	0	30	0	1	0
September	7.7	SE.	33	NW.	0	12	11	4	18	9	1	1	3	1	10	15	5	11	7	0	0	0	0	17	0	2	0
October	6.1	N.	30	SE.	0	23	12	5	11	7	2	1	1	0	7	10	14	11	6	0	0	3	0	0	0	2	0
November	9.2	SE.	38	E.	0	18	9	6	18	6	2	0	1	0	6	16	8	3	1	0	0	2	0	0	0	0	0
December	7.6	N.	30	N.	0	18	12	6	8	6	4	5	2	1	18	4	9	5	5	0	0	2	0	0	1	0	0
Year	8.6	SE.	60	NW.	7	139	81	88	225	106	29	20	34	10	114	134	118	90	60	0	1	19	0	115	3	12	0

SAN DIEGO, CAL.

[H = 69 ft.; h_t = 59 ft.; h_r = 52 ft.; h_a = 70 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	3.8	NE.	24	NW.	0	2	13	3	4	1	4	9	18	8	13	13	5	7	6	0	0	4	0	0	0	0	0
February	4.4	NE.	16	W.	0	3	15	3	3	0	5	2	23	4	20	4	5	1	0	0	0	0	0	0	0	0	0
March	5.6	NW.	35	SW.	0	3	7	5	2	1	2	15	17	10	11	10	10	5	5	0	0	2	0	0	0	0	0
April	6.5	NW.	26	NW.	0	3	10	4	2	1	5	14	18	3	26	2	2	4	3	0	0	0	0	0	0	0	0
May	6.1	NW.	20	NW.	0	3	4	2	4	5	5	18	19	2	21	5	5	1	0	0	0	1	0	2	0	0	0
June	5.3	SW.	17	W.	0	4	0	1	2	2	21	13	13	4	16	3	11	1	0	0	0	3	0	0	0	0	0
July	5.2	NW.	17	NW.	0	3	5	0	0	0	14	16	21	3	19	7	5	0	0	0	0	0	0	0	0	1	0
August	4.9	NW.	16	NW.	0	7	4	0	0	1	15	12	17	6	25	5	1	2	2	0	0	0	0	0	0	1	0
September	4.9	NW.	18	NW.	0	6	8	2	2	1	7	15	19	0	27	1	2	0	0	0	0	4	0	0	0	0	0
October	4.3	NW.	26	W.	0	8	12	0	0	5	7	10	19	1	22	1	8	4	4	0	0	6	0	0	0	1	0
November	4.6	NW.	29	W.	0	6	15	2	4	1	4	8	20	0	23	3	4	5	3	0	0	2	0	0	0	0	0
December	3.5	NE.	25	SW.	0	3	20	5	1	1	2	3	19	8	20	8	3	5	4	0	0	2	0	0	0	0	0
Year	4.9	NW.	35	SW.	0	51	113	27	24	19	91	135	223	49	243	62	61	35	27	0	0	24	0	2	0	3	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

SANDUSKY, OHIO.

[λ = 41° 25′ N.; φ = 82° 40′ W.; gravity corr., —0.01.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.46	29.89	28.87	26.3	28.4	32.4	23.1	27.8	48	—4	23	24	86	85	.127	.137	1.39	0.46	7.3	6.2	7.5
February	29.23	29.88	28.69	26.6	28.8	33.8	22.7	28.2	64	—1	21	23	80	80	.124	.131	1.72	.79	7.2	6.6	7.2
March	29.37	29.90	28.80	27.7	32.5	36.5	24.1	30.3	68	8	23	26	80	76	.128	.144	2.38	.61	6.1	5.9	6.8
April	29.40	29.90	29.06	49.8	54.2	62.0	45.6	53.8	88	21	42	44	76	71	.297	.326	4.12	2.08	6.2	6.4	6.4
May	29.31	29.62	28.90	63.9	67.5	74.8	57.6	66.2	90	48	54	55	70	66	.417	.444	1.67	.53	5.3	5.8	5.7
June	29.31	29.57	28.94	67.1	70.7	77.1	61.2	69.2	90	50	58	58	73	67	.488	.502	2.94	1.34	6.4	5.2	5.7
July	29.34	29.57	29.10	70.1	73.8	81.1	65.9	73.5	92	58	62	62	76	70	.565	.580	5.55	1.35	6.5	5.9	6.8
August	29.37	29.74	29.03	67.8	73.7	80.8	63.5	72.2	95	51	60	62	76	68	.532	.577	2.71	.93	5.6	4.2	5.2
September	29.35	29.71	28.77	58.8	62.9	69.0	55.4	62.2	90	41	52	53	79	72	.406	.421	4.52	1.62	6.6	5.5	6.5
October	29.39	29.75	29.05	44.9	50.9	56.3	42.5	49.4	75	28	37	41	75	70	.232	.268	1.14	.47	5.8	3.8	5.6
November	29.45	29.87	28.79	42.0	44.3	51.0	37.5	44.2	70	14	35	36	76	73	.223	.233	1.53	.38	7.7	6.9	7.7
December	29.49	30.06	29.00	30.3	33.6	37.5	27.3	32.4	59	5	25	26	81	74	.143	.147	2.09	.94	7.9	5.6	7.8
Year	29.37	30.06	28.69	47.9	51.8	57.7	43.9	50.8	95	—4	41	42	77	73	.307	.326	31.76	2.08	6.6	5.6	6.6

SAN FRANCISCO, CAL.

[λ = 37° 48′ N.; φ = 122° 26′ W.; gravity corr., —0.02.]

January	29.90	30.20	29.54	49.8	53.8	57.0	47.5	52.2	63	40	47	49	90	85	.327	.353	8.14	1.85	5.8	7.4	6.5
February	30.02	30.19	29.81	49.9	58.6	62.5	48.1	55.3	72	44	44	47	82	68	.294	.326	.28	18	1.8	3.6	2.5
March	29.90	30.13	29.39	50.1	56.6	60.4	48.2	54.3	72	33	45	47	85	73	.316	.336	2.85	.84	4.2	5.9	5.4
April	29.90	30.12	29.56	48.1	53.4	56.5	46.7	51.6	66	41	43	43	83	69	.283	.279	5.16	2.43	4.1	5.4	5.6
May	29.89	30.11	29.70	51.6	58.7	62.3	50.3	56.3	91	45	47	47	84	67	.325	.322	.72	.34	3.4	3.8	3.8
June	29.80	30.00	29.55	51.9	58.9	63.7	50.6	57.2	79	47	48	49	88	71	.335	.350	.00	.00	3.6	2.8	3.0
July	29.79	29.96	29.56	54.7	60.3	65.3	53.5	59.4	72	50	53	53	93	77	.397	.403	.04	.04	4.0	3.2	3.3
August	29.85	29.99	29.76	55.5	61.3	64.9	54.1	59.5	72	52	54	55	94	79	.414	.427	.09	.06	6.2	3.1	4.5
September	29.78	29.97	29.42	55.6	60.1	64.9	54.4	59.6	81	52	53	53	90	77	.398	.399	.52	.41	4.6	3.2	4.4
October	29.81	30.08	29.40	54.2	59.2	65.7	52.0	58.8	85	47	50	50	89	76	.369	.365	1.55	1.46	2.7	2.9	3.4
November	29.93	30.19	29.55	50.1	54.7	58.5	48.4	53.4	66	38	46	46	85	73	.314	.312	4.56	2.79	3.4	5.3	4.9
December	29.98	30.27	29.52	49.7	54.7	57.7	47.8	52.8	64	42	46	48	88	80	.314	.338	4.34	1.65	3.5	6.5	6.2
Year	29.88	30.27	29.39	51.8	57.5	61.6	50.1	55.9	91	33	48	49	88	75	.340	.351	28.25	2.79	3.9	4.4	4.5

SAN LUIS OBISPO, CAL.

[λ = 35° 18′ N.; φ = 120° 39′ W.; gravity corr., —0.02.]

January	29.87	30.08	29.54	48.4	58.1	63.3	44.9	54.1	79	30	41	44	78	65	.272	.307	8.23	1.88	4.6	5.7	6.0
February	29.93	30.09	29.76	47.4	62.8	69.9	42.6	56.2	85	32	36	40	67	48	.215	.257	.00	.00	1.7	2.0	3.0
March	29.84	30.04	29.42	49.2	61.4	66.5	46.0	56.2	85	32	43	46	81	60	.289	.328	3.16	1.56	3.7	4.7	4.9
April	29.86	30.04	29.69	46.0	58.2	60.3	42.4	51.4	78	32	40	44	82	61	.258	.295	2.22	1.23	3.6	3.0	3.7
May	29.83	29.99	29.68	51.1	62.4	68.6	47.8	58.2	98	37	44	48	77	61	.288	.334	.10	.08	3.0	3.1	3.4
June	29.74	29.90	29.58	52.2	68.5	77.6	49.9	63.8	93	43	48	51	85	55	.331	.376	T.	T.	3.0	1.7	2.9
July	29.75	29.89	29.58	57.4	72.6	80.5	54.7	67.6	99	45	53	55	80	55	.406	.439	.04	.04	6.4	1.5	3.8
August	29.79	29.94	29.68	55.5	72.1	79.9	53.1	66.5	90	48	52	54	88	54	.391	.420	.20	.20	6.7	1.2	4.0
September	29.73	29.88	29.48	55.1	67.4	77.4	51.3	64.3	95	44	50	52	84	50	.361	.393	T.	T.	6.3	2.2	4.7
October	29.77	29.99	29.53	51.3	64.4	77.4	47.0	62.2	98	38	47	50	85	61	.321	.359	1.44	1.44	3.1	3.2	3.7
November	29.86	30.14	29.54	49.1	59.2	68.3	45.2	56.8	79	32	42	44	77	62	.272	.304	3.02	1.41	2.7	4.2	4.1
December	29.92	30.12	29.59	47.0	59.4	66.9	42.1	54.5	79	33	40	45	78	62	.250	.306	3.04	1.15	2.3	3.9	3.6
Year	29.82	30.14	29.42	50.8	63.9	71.4	47.2	59.3	99	30	45	48	81	59	.304	.343	21.45	1.88	3.9	3.0	4.0

SANTA FE, N. MEX.

[λ = 35° 41′ N.; φ = 105° 57′ W.; gravity corr., —0.02.]

January	23.27	23.49	22.95	28.2	35.2	42.8	25.0	33.9	54	11	13	19	52	50	.081	.103	0.36	0.13	2.7	2.9	3.7
February	23.22	23.52	22.82	25.7	37.5	42.5	23.6	33.0	57	7	10	12	50	36	.066	.074	.57	.21	3.6	4.0	3.8
March	23.17	23.46	22.88	32.8	46.8	51.4	29.6	40.5	69	15	12	10	43	27	.077	.073	.53	.15	5.7	4.9	4.5
April	23.19	23.51	22.76	38.6	56.8	60.4	35.3	47.8	70	13	4	-8	26	13	.055	.045	1.11	1.08	3.0	3.5	3.2
May	23.23	23.44	22.93	48.6	68.0	70.7	45.3	58.0	86	31	10	-13	22	8	.079	.053	.27	.20	2.5	4.2	3.6
June	23.36	23.56	23.10	60.2	77.0	81.2	56.8	69.0	89	48	30	16	35	14	.178	.109	.69	.49	2.2	4.5	3.6
July	23.43	23.54	23.30	59.1	70.2	77.2	56.5	66.8	82	52	48	47	68	48	.340	.338	3.78	.86	5.2	8.2	6.3
August	23.44	23.58	23.29	59.1	72.1	76.9	57.2	68.0	88	49	43	40	58	37	.284	.260	1.47	.44	3.5	6.0	4.8
September	23.36	23.49	23.18	52.0	65.6	71.8	50.5	61.2	84	34	42	39	69	42	.268	.252	1.39	.43	3.4	4.0	4.0
October	23.30	23.53	23.02	41.8	50.8	57.2	39.8	48.5	70	30	34	35	74	56	.198	.206	3.19	1.01	5.2	5.0	5.4
November	23.26	23.52	22.86	31.8	40.6	49.6	28.6	39.1	64	7	16	20	54	43	.095	.110	.25	.10	3.3	3.8	3.1
December	23.34	23.58	23.02	28.7	36.5	46.0	25.5	35.8	57	18	17	16	62	42	.095	.087	.67	.64	2.3	3.2	3.6
Year	23.30	23.58	22.76	42.2	54.8	60.8	39.5	50.1	89	7	23	19	51	35	.151	.142	14.28	1.08	3.6	4.5	4.1

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

SANDUSKY, OHIO.

[H = 629 ft.; h_t = 62 ft.; h_r = 55 ft.; h_a = 74 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	8.5	W.	31	NW.	0	7	1	10	6	5	4	16	13	0	5	5	21	11	7	5	0	1	11	0	28	0	0
February	9.4	W.	42	NW.	1	5	8	4	2	3	9	16	11	0	4	6	19	12	5	8	0	0	12	0	23	0	0
March	10.7	N.	37	N.	0	12	4	12	5	4	8	6	11	0	7	6	18	10	8	7	0	0	15	0	28	0	0
April	10.2	SW.	40	NW.	1	6	2	13	7	3	13	7	9	0	7	9	14	11	8	1	0	0	1	0	6	5	0
May	8.3	W.	36	W.	0	3	4	13	8	4	9	14	7	0	10	8	13	13	8	0	0	0	0	1	0	8	0
June	7.1	E.	31	NW.	0	5	9	15	6	7	8	8	2	0	7	14	9	9	7	0	1	0	0	2	0	6	0
July	7.8	W.	40	SW.	1	4	8	8	7	4	13	16	2	0	5	9	17	12	11	0	0	0	0	3	0	9	0
August	7.1	SW.	40	NW.	1	5	10	9	4	4	16	9	5	0	11	10	10	7	5	0	0	0	0	6	0	3	0
September	8.4	SW.	42	NW.	1	5	8	13	2	4	16	7	5	0	8	7	15	10	9	0	0	0	0	2	0	2	0
October	8.8	NW.	33	N.	0	10	5	10	6	4	11	4	12	0	10	8	13	10	6	0	0	0	0	0	3	0	0
November	10.5	SW.	31	SW.	0	1	3	3	3	6	19	15	10	0	5	5	20	11	9	0	0	0	4	0	10	0	0
December	8.9	W.	33	NW.	0	7	6	4	2	1	15	18	9	0	3	7	21	9	6	4	0	2	10	0	19	0	0
Year	8.8	W.	42	NW.	5	70	68	114	58	49	141	136	96	0	82	94	190	125	89	25	1	3	53	14	117	33	0

SAN FRANCISCO, CAL.

[H = 153 ft.; h_t = 161 ft.; h_r = 154 ft.; h_a = 167 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.5	S.	47	S.	3	9	2	1	11	11	6	7	14	1	4	13	14	14	14	0	0	2	0	0	0	1	0
February	7.0	W.	34	NW.	0	9	2	3	5	2	5	20	11	1	21	7	1	5	2	0	0	1	0	0	0	0	0
March	8.4	W.	35	SE.	0	5	3	2	4	4	9	27	7	1	9	12	10	13	10	1	0	4	0	0	0	0	0
April	11.6	W.	36	W.	0	3	0	1	3	4	12	31	6	0	12	3	15	15	12	0	1	0	0	0	0	2	0
May	12.4	W.	41	W.	1	2	0	0	2	3	12	38	4	1	18	5	8	5	4	0	1	0	0	1	0	1	0
June	14.3	W.	42	W.	1	0	0	0	0	3	23	32	1	1	18	10	2	0	0	0	0	0	0	0	0	0	0
July	14.1	W.	38	W.	0	0	0	0	0	0	23	39	0	0	18	7	6	1	1	0	0	0	0	0	0	1	0
August	13.9	W.	36	W.	0	0	0	0	0	0	23	39	0	0	13	12	6	3	1	0	0	0	0	0	0	1	0
September	10.9	W.	33	SW.	0	0	1	0	2	1	12	43	1	0	14	11	5	5	2	0	0	0	0	0	0	1	0
October	9.6	W.	35	SE.	0	3	0	0	3	4	17	32	2	1	19	9	3	5	3	0	0	7	0	0	0	0	0
November	7.9	W.	33	W.	0	11	5	0	5	6	8	18	7	0	13	9	8	8	7	0	0	0	0	0	0	0	0
December	7.7	N.	36	SE.	0	17	2	0	12	4	2	10	15	0	6	13	12	11	8	0	1	2	0	0	0	1	0
Year	10.6	W.	47	S.	5	59	15	7	47	42	152	336	68	6	165	111	90	85	64	1	3	16	0	1	0	8	0

SAN LUIS OBISPO, CAL.

[H = 201 ft.; h_t = 10 ft.; h_r = 3 ft.; h_a = 46 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	5.8	N.	25	N.	0	23	1	5	2	18	0	4	8	1	8	10	13	11	10	0	1	1	0	0	1	0	0
February	5.0	N.	25	N.	0	25	1	3	1	7	0	10	11	0	19	9	1	0	0	0	0	2	0	0	0	0	0
March	5.0	NW.	28	SE.	0	12	0	4	2	10	0	9	21	4	10	12	9	6	6	0	1	1	0	0	1	0	0
April	6.6	W.	30	S.	0	7	0	4	4	6	0	18	17	4	16	9	5	10	8	0	1	0	0	0	0	0	0
May	6.9	W.	20	W.	0	16	0	0	1	3	3	27	12	0	18	10	3	3	1	0	0	1	0	1	0	0	0
June	4.9	W.	16	W.	0	9	0	3	4	13	4	14	13	0	20	9	1	0	0	0	0	0	0	1	0	0	0
July	4.3	W.	16	NW.	0	6	0	0	1	16	5	17	16	1	17	12	2	1	1	0	0	3	0	2	0	1	0
August	4.0	NW.	14	W.	0	13	0	3	2	8	1	11	22	2	12	16	3	1	1	0	0	1	0	0	0	0	0
September	4.5	W.	18	N.	0	17	2	2	1	6	2	18	10	2	10	11	9	0	0	0	0	0	0	2	0	0	0
October	4.1	NW.	24	W.	0	14	4	5	2	11	1	9	15	1	18	9	4	1	1	0	0	7	0	3	0	0	0
November	5.2	N.	24	N.	0	21	3	2	5	4	1	9	15	0	17	6	7	7	6	0	0	2	0	0	0	0	0
December	4.4	N.	24	SE.	0	26	2	3	7	14	1	2	6	1	20	5	6	9	7	0	0	0	0	0	0	0	0
Year	5.1	N.	30	S.	0	189	13	34	32	116	18	148	166	16	185	118	63	49	41	0	3	27	0	9	2	1	0

SANTA FE, N. MEX.

[H = 6,998 ft.; h_t = 47 ft.; h_r = 39 ft.; h_a = 50 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	6.3	NE.	26	NE.	0	5	28	5	11	3	4	3	1	2	17	11	3	5	4	4	0	0	1	0	27	0	0
February	7.4	NE.	38	NW.	0	12	17	2	7	4	6	1	9	0	18	5	6	6	4	6	0	0	6	0	26	0	0
March	8.4	NW.	40	SW.	1	6	7	2	8	6	8	6	18	1	14	10	7	5	5	4	0	0	1	0	18	0	0
April	9.4	SW.	50	SW.	3	1	7	4	13	3	21	3	6	2	19	8	3	2	1	2	0	0	0	0	8	0	0
May	8.9	SW.	39	SW.	0	2	5	1	19	4	13	9	8	1	18	9	4	3	2	1	0	0	0	0	1	2	0
June	7.4	SW.	31	SW.	0	1	12	3	20	1	16	3	4	0	15	15	0	4	3	0	0	0	0	0	0	3	0
July	5.8	SE.	34	SW.	0	2	9	12	20	7	7	1	2	2	2	19	10	14	12	0	1	0	0	0	0	8	0
August	6.2	SE.	32	NE.	0	1	3	7	22	7	15	3	1	3	13	12	6	14	12	0	0	0	0	0	0	6	0
September	6.2	SE.	25	E.	0	5	4	7	18	4	8	6	5	3	15	11	4	12	6	0	0	1	0	0	0	3	0
October	5.6	SE.	27	NE.	0	4	9	7	13	8	13	1	4	3	10	11	10	13	8	0	1	0	0	0	2	3	0
November	6.6	NE.	33	SW.	0	7	16	3	11	7	5	2	5	4	21	8	1	5	4	2	0	0	3	0	16	0	0
December	5.8	NE.	24	SE.	0	5	27	5	13	1	3	0	2	0	18	9	4	2	2	2	0	1	0	0	29	1	0
Year	7.0	SE.	50	SW.	4	51	144	58	175	55	119	38	65	27	180	128	58	85	63	21	2	2	11	0	127	26	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

SAULT STE. MARIE, MICH.

[λ=46° 28′ N.; φ=84° 22′ W.; gravity corr., 0.00.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.40	29.86	28.74	12.9	17.8	21.3	9.5	15.4	34	—25	10	15	88	87	.076	.090	3.97	1.05	8.2	8.3	8.1
February	29.17	29.86	28.60	12.0	18.8	25.1	8.0	16.6	40	—18	9	14	87	79	.074	.087	1.98	.49	7.5	6.9	6.5
March	29.35	29.91	28.55	10.7	21.1	26.3	6.5	16.4	44	—16	6	13	81	70	.065	.085	1.06	.41	4.5	5.1	5.3
April	29.35	29.93	28.81	35.4	41.5	48.4	31.7	40.0	68	9	30	34	82	76	.185	.212	3.13	.89	7.1	7.0	7.0
May	29.23	29.70	28.69	49.1	55.0	63.7	43.5	53.6	88	33	44	46	85	74	.296	.324	6.70	2.51	6.7	5.7	5.8
June	29.30	29.60	28.99	56.3	64.2	72.6	47.9	60.2	86	37	50	52	81	66	.373	.400	1.94	1.52	3.0	3.6	3.5
July	29.31	29.54	29.02	59.4	65.8	74.5	53.3	63.9	87	46	54	54	84	67	.427	.422	.96	.34	4.9	4.5	4.8
August	29.29	29.68	28.91	58.7	64.7	72.8	53.6	63.2	89	41	54	56	86	74	.437	.458	3.57	1.02	4.1	5.1	4.8
September	29.32	29.74	28.80	47.8	52.5	59.0	44.2	51.6	72	29	45	47	91	81	.309	.328	2.48	.57	6.2	5.7	6.6
October	29.34	29.72	28.81	37.5	42.0	49.4	34.4	41.9	65	24	34	36	87	80	.202	.217	3.04	1.45	5.6	5.2	5.5
November	29.33	29.85	28.68	28.0	30.6	36.0	24.5	30.2	54	7	25	28	89	88	.146	.159	4.84	1.24	9.0	9.0	9.0
December	29.41	29.92	28.82	18.9	23.2	27.9	14.3	21.1	43	— 5	16	20	88	86	.100	.113	.95	.22	7.3	7.3	7.0
Year	29.32	29.93	28.55	35.6	41.4	48.1	31.0	39.5	89	—25	31	35	86	77	.224	.241	34.62	2.51	6.2	6.1	6.1

SAVANNAH, GA.

[λ=32° 5′ N.; φ=81° 5′ W.; gravity corr., —0.03.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	30.10	30.43	29.55	43.4	49.7	56.9	41.0	49.0	70	22	39	41	86	75	.256	.279	4.32	2.53	6.4	4.5	6.1
February	29.96	30.50	29.15	47.3	54.2	64.2	43.1	53.6	75	21	40	40	77	61	.265	.282	2.99	.92	5.5	4.4	4.7
March	30.02	30.48	29.30	52.0	57.1	68.1	47.1	57.6	88	34	43	45	74	66	.310	.320	3.19	1.90	5.4	2.4	4.2
April	30.10	30.34	29.84	65.3	66.7	78.1	59.2	68.6	90	42	57	56	75	72	.491	.485	1.51	1.30	5.2	4.1	4.1
May	29.99	30.24	29.81	74.5	74.7	87.0	68.2	77.6	97	55	66	66	74	76	.639	.656	4.30	1.59	4.0	4.7	4.1
June	29.94	30.15	29.64	77.5	77.4	88.3	71.0	79.6	99	64	70	70	79	79	.750	.742	5.31	1.25	6.3	6.7	7.1
July	30.04	30.24	29.76	80.1	80.9	90.9	74.4	82.6	101	70	73	74	80	80	.818	.894	4.49	1.64	4.6	5.8	5.4
August	29.99	30.10	29.84	78.7	79.7	90.6	72.9	81.8	98	61	73	72	83	79	.829	.798	5.78	2.72	3.1	3.1	3.9
September	29.94	30.26	29.18	73.0	76.4	86.4	68.3	77.4	97	53	69	69	86	78	.723	.724	2.08	1.53	2.2	2.0	2.8
October	29.96	30.18	29.66	61.5	67.1	76.7	58.2	67.4	86	47	56	60	82	79	.460	.528	.99	.49	4.2	2.9	4.2
November	30.13	30.40	29.74	57.1	62.9	72.4	54.5	63.4	83	40	55	56	91	81	.448	.477	2.42	1.37	4.8	3.2	5.0
December	30.13	30.61	29.62	43.0	50.8	59.0	40.7	49.8	72	28	38	42	82	73	.241	.277	6.86	3.93	4.0	2.9	3.7
Year	30.02	30.61	29.15	62.8	66.5	76.6	58.2	67.4	101	21	57	58	81	75	.518	.534	44.24	3.93	4.6	3.9	4.6

SEATTLE, WASH.

[λ = 47° 38′ N.; φ = 122° 20′ W.; gravity corr., + 0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.75	30.38	29.05	40.3	43.3	46.3	37.3	41.8	61	26	36	37	86	78	.220	.225	7.06	0.94	8.3	7.9	8.0
February	29.97	30.49	29.24	41.8	47.0	50.3	39.4	44.8	62	27	38	39	87	75	.232	.245	3.87	1.08	5.9	7.7	7.1
March	29.92	30.45	29.41	37.8	48.1	50.3	35.9	43.1	66	22	34	24	84	60	.195	.206	2.41	.84	5.3	5.6	5.5
April	29.80	30.18	29.43	41.1	50.6	54.4	39.5	47.0	66	33	36	38	84	64	.215	.229	3.27	1.35	8.1	7.6	7.2
May	29.68	30.38	29.45	45.8	56.8	59.8	44.9	52.4	76	40	41	41	83	58	.257	.259	3.60	.79	8.4	7.5	6.5
June	29.93	30.21	29.70	51.7	67.4	69.4	51.0	60.2	93	45	46	46	82	49	.316	.323	.77	.33	6.2	4.5	4.3
July	29.88	30.06	29.65	56.9	76.9	78.4	56.1	67.2	89	51	53	53	86	44	.399	.402	.00	.00	5.3	1.7	2.4
August	29.90	30.04	29.76	57.1	70.2	71.9	55.9	63.9	89	53	53	55	88	60	.408	.431	.50	.19	6.1	4.3	5.2
September	29.90	30.16	29.60	51.5	63.0	64.5	48.9	56.7	82	42	48	51	90	65	.343	.374	1.78	.82	5.9	3.6	5.1
October	29.90	30.20	29.48	48.7	56.3	59.6	46.1	52.8	69	37	46	47	90	73	.310	.328	2.49	.99	4.9	5.6	5.5
November	29.87	30.40	29.24	37.3	39.8	42.5	34.2	38.4	59	15	33	35	84	82	.200	.210	9.50	2.16	6.3	7.6	6.9
December	29.84	30.16	29.17	43.7	46.6	48.5	40.5	44.5	58	29	41	42	90	86	.257	.274	7.58	1.23	6.5	8.5	8.4
Year	29.88	30.49	29.05	46.1	55.5	58.0	44.1	51.1	93	15	42	43	86	66	.279	.292	42.83	2.16	6.4	6.0	6.0

SHREVEPORT, LA.

[λ=32° 30′ N.; φ=93° 40′ W.; gravity corr., —0.03.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.89	30.52	29.32	41.4	49.7	53.5	38.6	46.0	72	19	36	39	80	69	.225	.253	8.11	4.12	6.2	5.3	7.0
February	29.77	30.19	29.23	44.5	55.2	60.0	41.8	50.9	72	31	37	38	75	50	.232	.243	4.76	1.86	5.0	4.2	5.3
March	29.78	30.18	29.40	50.2	60.6	66.8	46.3	56.6	82	30	44	43	78	56	.310	.305	3.87	1.18	6.0	5.9	6.1
April	29.80	30.22	29.46	62.9	73.6	79.2	59.4	69.3	87	40	58	57	84	58	.504	.490	4.90	3.63	6.7	4.6	6.0
May	29.71	29.97	29.43	70.6	81.8	86.8	67.5	77.2	94	59	67	71	87	71	.656	.765	3.94	1.57	5.4	3.8	4.7
June	29.71	30.00	29.52	73.9	85.4	91.4	70.2	80.8	98	59	68	68	82	58	.693	.696	1.78	1.12	3.1	2.9	3.6
July	29.79	29.96	29.62	76.9	88.8	95.2	74.0	84.6	102	65	71	68	82	53	.754	.694	.78	.50	1.8	3.8	3.6
August	29.78	30.02	29.58	75.6	88.3	96.4	73.3	84.8	106	60	69	66	80	50	.715	.643	.78	.37	2.6	4.1	3.6
September	29.73	30.01	29.53	68.9	82.3	89.3	66.8	78.0	99	45	63	62	82	53	.598	.574	3.59	1.98	2.6	4.1	3.3
October	29.78	29.96	29.48	57.3	69.0	75.0	56.0	65.5	88	46	53	57	86	69	.412	.483	5.64	1.98	5.4	4.1	5.1
November	29.87	30.31	29.49	52.8	61.3	68.0	49.4	58.7	86	29	49	50	86	69	.388	.413	1.08	.58	5.9	3.6	5.3
December	29.95	30.38	29.40	42.3	56.8	62.4	40.5	51.4	79	25	35	40	76	54	.222	.206	.75	.55	2.6	2.2	2.7
Year	29.80	30.52	29.23	59.8	71.1	77.0	57.0	67.0	106	19	54	55	82	60	.476	.485	39.48	4.12	4.4	4.0	4.7

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

SAULT STE. MARIE, MICH.

[H = 624° ft.; h_t = 58 ft.; h_r = 47 ft.; h_a = 65 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	8.4	SE.	34	NW.	0	2	6	7	32	0	4	1	7	3	5	3	23	22	18	22	0	0	28	0	31	0	1
February	9.0	NW.	36	NW.	0	4	7	3	18	1	2	3	18	2	6	8	15	11	9	11	0	2	21	0	29	0	1
March	9.4	NW.	43	NW.	3	4	4	3	13	1	7	8	18	4	13	8	10	10	6	7	0	3	19	0	31	0	6
April	9.4	SE.	34	SE.	0	0	0	2	23	8	5	3	16	3	6	8	16	16	14	3	0	1	4	0	12	2	7
May	10.0	NW.	37	NW.	0	0	1	9	21	4	1	9	16	1	7	14	10	14	12	0	0	2	0	0	0	3	1
June	7.4	NW.	32	NW.	0	1	1	12	13	1	4	15	10	3	19	8	3	9	5	0	0	1	0	0	0	2	2
July	6.7	NW.	37	NW.	0	4	0	9	8	2	4	10	20	5	10	14	7	7	6	0	0	2	0	0	0	3	0
August	7.3	NW.	42	NW.	1	5	0	7	13	5	1	6	21	4	13	12	6	11	10	0	1	4	0	0	0	8	2
September	8.7	NW.	36	NW.	0	5	6	10	12	7	4	3	13	0	3	16	11	11	10	0	0	4	0	0	0	0	1
October	8.2	SE.	31	NW.	0	7	2	12	12	6	7	3	10	3	10	11	10	12	11	7	0	4	0	0	13	0	0
November	11.2	SE.	52	NW.	2	5	5	7	16	2	9	5	11	0	0	5	25	25	22	15	0	2	8	0	22	0	0
December	8.0	SE.	44	NW.	1	2	4	10	15	8	9	4	10	0	6	9	16	11	7	8	0	2	18	0	30	0	1
Year	8.6	SE.	52	NW.	7	39	36	91	196	45	57	70	170	28	98	116	152	159	130	73	1	27	98	0	168	18	22

SAVANNAH, GA.

[H = 98 ft.; h_t = 63 ft.; h_r = 55 ft.; h_a = 86 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.3	NW.	36	NW.	0	7	10	5	7	3	4	8	17	1	8	11	12	7	4	0	0	2	0	0	4	1	0
February	10.0	SW.	40	W.	1	8	3	0	5	11	15	10	5	1	13	10	6	7	7	0	0	0	0	0	4	2	0
March	9.7	S.	32	S.	0	5	6	8	3	15	4	11	10	0	15	12	4	5	4	0	0	1	0	0	0	1	0
April	9.3	S.	36	NW.	0	2	8	12	3	19	7	6	3	0	17	8	5	5	4	0	0	0	0	2	0	3	0
May	7.3	S.	22	NE.	0	2	3	2	3	28	14	5	5	0	16	13	2	8	7	0	0	0	0	11	0	8	0
June	6.5	S.	27	NE.	0	9	3	4	6	18	12	4	4	0	7	7	16	15	13	0	0	0	0	10	0	13	0
July	7.9	S.	29	S.	0	0	2	1	13	27	9	8	1	1	6	19	6	16	11	0	0	0	0	16	0	12	0
August	6.4	S.	32	NW.	0	7	11	2	6	19	12	3	2	0	20	5	6	11	7	0	0	1	0	17	0	16	0
September	6.8	E.	75	SE.	1	10	14	9	6	8	2	10	1	0	23	5	2	6	5	0	0	0	0	8	0	3	0
October	8.0	N.	27	N.	0	13	10	7	2	10	4	6	7	3	15	8	8	7	4	0	0	2	0	0	0	0	0
November	7.4	NE.	27	NE.	0	15	8	12	4	11	1	2	7	0	15	5	10	7	6	0	0	4	0	0	0	1	0
December	8.2	N.	27	NW.	0	18	12	2	5	1	5	4	13	2	18	5	8	8	7	0	0	0	0	0	5	0	0
Year	7.8	S.	75	SE.	2	96	90	64	63	170	89	77	75	8	173	108	85	102	79	0	0	10	0	64	13	60	0

SEATTLE, WASH.

[H = 119 ft.; h_t = 100 ft.; h_r = 94 ft.; h_a = 108 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.2	S.	30	SE.	0	7	7	2	11	25	6	3	1	0	2	6	23	23	20	5	0	1	1	0	8	0	0
February	8.3	S.	34	SW.	0	1	5	4	6	25	12	2	3	0	3	10	16	23	17	4	0	1	0	0	2	0	0
March	6.0	SE.	30	SW.	0	5	6	5	14	13	5	3	11	0	11	7	13	14	11	1	1	2	2	0	6	0	0
April	7.0	S.	30	SW.	0	3	7	3	10	19	6	5	7	0	4	7	19	21	15	0	1	1	0	0	0	0	0
May	5.4	S.	23	SW.	0	8	5	2	11	19	6	1	10	0	5	10	16	17	13	0	0	1	0	0	0	1	0
June	5.3	S.	20	S.	0	9	10	4	3	15	4	5	10	0	14	11	5	7	5	0	0	0	0	1	0	1	0
July	3.7	NW.	19	NW.	0	15	7	6	3	4	5	2	20	0	22	9	0	0	0	0	0	1	0	0	0	0	0
August	3.3	S.	18	NW.	0	9	3	2	4	19	7	8	9	1	10	9	12	5	3	0	0	7	0	0	0	0	0
September	3.1	SE.	15	SE.	0	9	6	1	8	12	3	1	11	9	11	9	10	3	3	0	0	8	0	0	0	0	0
October	3.8	SE.	30	SE.	0	9	9	8	8	12	1	6	5	4	9	9	13	11	10	0	0	10	0	0	0	0	0
November	7.0	SE.	30	SE.	0	12	11	2	13	15	3	1	3	0	7	5	18	18	14	6	0	0	5	0	9	0	0
December	6.7	SE.	28	S.	0	8	2	6	22	21	3	0	0	0	0	8	23	23	21	0	0	6	0	0	1	0	0
Year	5.6	S.	34	SW.	0	95	78	45	113	199	61	37	90	14	98	100	168	165	132	16	2	38	8	1	26	2	0

SHREVEPORT, LA.

[H = 249 ft.; h_t = 77 ft.; h_r = 76 ft.; h_a = 84 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	6.9	SE.	25	N.	0	9	9	4	17	7	3	5	8	0	7	6	18	10	8	0	1	3	0	0	6	4	0
February	8.2	SE.	32	SE.	0	2	7	5	16	5	3	5	15	0	12	4	13	9	9	0	0	0	0	0	2	1	0
March	9.3	SE.	38	NW.	0	6	7	6	14	14	4	0	11	0	10	6	15	10	10	0	2	0	0	0	1	6	0
April	8.5	S.	34	S.	0	2	0	2	20	27	5	0	4	0	5	16	9	5	4	0	0	0	0	0	0	5	0
May	7.0	SE.	45	W.	1	1	2	4	28	17	8	2	0	0	11	14	6	6	5	0	0	0	0	8	0	4	0
June	5.8	SE.	33	NW.	0	3	12	7	13	9	5	2	9	0	17	10	3	4	3	0	0	0	0	20	0	9	0
July	5.1	S.	27	S.	0	3	6	4	16	16	11	3	3	0	18	6	7	6	4	0	0	0	0	28	0	6	0
August	5.5	S.	29	N.	0	4	8	2	14	18	8	5	3	0	16	9	6	7	3	0	0	0	0	27	0	10	0
September	6.1	SE.	30	SE.	0	4	5	8	28	7	2	2	4	0	19	5	6	7	4	0	0	1	0	19	0	6	0
October	5.6	NE.	33	E.	0	3	14	6	13	4	2	6	12	2	9	12	10	10	8	0	0	1	0	0	0	4	0
November	8.6	SE.	36	SE.	0	9	4	2	28	5	5	0	6	1	10	9	11	7	5	0	0	3	0	0	3	1	0
December	6.4	SE.	30	SE.	0	5	5	4	13	13	4	6	12	0	20	9	2	3	3	0	0	0	0	0	7	0	0
Year	6.9	SE.	45	W.	1	51	79	54	220	142	69	36	87	3	154	106	106	84	66	0	3	8	0	102	19	56	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

SIOUX CITY, IOWA.

[λ = 42° 29′ N.; φ = 96° 24′ W.; gravity corr., —0.01.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	.....	29.39	28.35	18.0	.....	34.5	11.3	22.9	63	—10	14	....	84	....	.090	.....	0.21	0.18	5.9	.....	7.1
February	.....	29.26	28.30	22.2	.....	40.6	16.2	28.4	75	— 2	16	....	78	....	.095	.....	.35	.17	4.7	.....	5.3
March	.....	29.32	27.86	22.3	.....	38.6	15.7	27.2	66	— 2	18	....	83	....	.107	.....	.50	.16	5.8	.....	6.0
April	.....	29.21	28.17	44.9	.....	63.7	39.8	51.8	85	17	38	....	78	....	.252	.....	6.16	2.05	5.4	.....	5.2
May	.....	28.94	28.27	58.6	.....	74.1	54.6	64.4	88	43	52	....	80	....	.399	.....	6.39	1.59	6.1	.....	6.5
June	.....	29.12	28.47	63.8	.....	81.1	58.2	69.6	93	46	56	....	77	....	.468	.....	2.94	.99	5.0	.....	4.6
July	.....	29.02	28.59	66.0	.....	83.0	61.8	72.4	97	52	60	....	82	....	.527	.....	5.54	1.52	4.8	.....	4.8
August	.....	29.10	28.50	64.9	.....	82.9	60.8	71.8	98	41	58	....	78	....	.490	.....	.86	.28	4.4	.....	4.3
September	.....	29.16	28.42	51.3	.....	70.5	46.5	58.5	86	32	47	....	85	....	.342	.....	2.09	.65	4.0	.....	4.9
October	.....	29.17	28.23	38.2	.....	60.0	34.2	47.1	79	23	33	....	83	....	.197	.....	2.59	1.25	4.5	.....	4.5
November	.....	29.47	28.20	18.8	.....	31.2	13.7	22.4	70	— 9	16	....	87	....	.098	.....	2.89	1.72	6.1	.....	6.6
December	.....	29.50	28.45	27.1	.....	39.2	20.9	30.0	55	— 8	24	....	87	....	.131	.....	.25	.18	3.5	....	5.8
Year	.....	29.50	27.86	41.3	.....	58.3	36.1	47.2	98	—10	36	....	82	....	.266	.....	30.77	2.05	5.1	.....	5.5

SPOKANE, WASH.

[λ = 47° 40′ N.; φ = 117° 25′ W.; gravity corr., +0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	27.91	28.43	27.40	29.0	33.3	36.2	25.5	30.8	52	1	24	27	84	78	.138	.152	3.00	0.61	7.3	8.6	8.4
February	28.03	28.52	27.39	34.5	42.5	45.4	32.4	38.9	59	21	29	29	80	59	.160	.161	1.03	.44	6.3	6.7	7.0
March	27.98	28.45	27.42	30.3	44.9	47.2	29.2	38.2	63	6	24	23	77	44	.137	.136	.74	.32	4.9	6.7	6.3
April	27.86	28.39	27.40	37.6	51.5	53.7	36.6	45.2	66	25	30	28	74	43	.168	.159	1.20	.35	7.0	7.6	7.8
May	27.90	28.20	27.62	42.7	55.4	58.9	41.9	50.4	82	36	36	34	79	51	.216	.202	2.29	.42	7.7	7.6	8.0
June	27.96	28.26	27.72	51.8	73.8	75.6	50.2	62.9	96	40	41	33	69	26	.263	.197	.73	.53	4.1	4.8	4.5
July	27.95	28.11	27.79	60.2	85.3	87.3	59.1	73.2	100	50	46	38	62	21	.325	.238	.17	.16	2.1	2.7	2.8
August	27.97	28.17	27.82	55.2	80.3	82.5	54.8	68.6	92	46	43	37	65	25	.283	.231	1.48	.78	2.6	3.8	3.7
September	27.98	28.28	27.70	46.9	68.2	70.9	45.9	58.4	87	35	39	36	76	34	.247	.220	.42	.28	3.8	4.4	4.5
October	28.01	28.29	27.65	40.5	58.6	61.3	38.4	49.8	75	30	36	36	84	46	.214	.220	.94	.57	3.9	6.0	5.8
November	27.96	28.56	27.38	27.9	32.7	37.5	23.6	30.6	63	—13	24	28	86	83	.152	.168	4.85	1.28	6.5	7.9	6.9
December	27.99	28.27	27.43	35.0	36.7	40.4	31.1	35.8	52	19	32	33	90	86	.181	.189	3.47	.87	7.5	8.2	7.9
Year	27.96	28.56	27.38	41.0	55.3	58.1	39.1	48.6	100	—13	34	32	77	50	.207	.189	20.32	1.28	5.3	6.2	6.1

SPRINGFIELD, ILL.

[λ = 39° 48′ N.; φ = 89° 39′ W.; gravity corr., —0.01.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	29.45	29.98	28.93	26.1	32.1	37.4	23.5	30.4	55	—4	21	24	81	72	.123	.139	1.77	0.68	5.5	5.8	6.7
February	29.29	29.81	28.73	27.4	32.8	38.6	25.3	32.0	70	0	21	24	75	68	.121	.136	2.11	.97	6.0	5.7	6.5
March	29.38	29.90	28.70	30.0	39.4	44.1	28.4	36.2	71	14	24	29	76	65	.128	.168	1.25	.30	4.9	6.3	6.3
April	29.34	29.68	28.91	52.3	64.6	69.9	50.0	60.0	84	26	45	47	76	54	.331	.361	1.91	.76	5.9	5.9	5.3
May	29.27	29.55	28.96	64.3	74.0	79.6	60.5	70.0	90	49	57	60	79	63	.478	.527	2.49	.87	5.9	5.9	5.7
June	29.31	29.64	29.03	66.8	75.9	81.6	62.9	72.2	91	54	60	62	80	63	.534	.559	8.45	4.03	5.5	5.8	5.6
July	29.36	29.54	29.16	70.2	79.6	84.2	66.3	75.2	95	52	62	66	77	65	.583	.653	8.51	2.63	5.2	4.4	4.7
August	29.37	29.73	29.08	68.2	78.3	84.4	65.5	75.0	98	52	62	63	80	61	.570	.606	1.87	.97	4.3	3.7	3.6
September	29.35	29.74	29.02	57.1	66.3	72.9	55.3	64.1	91	39	52	55	83	68	.402	.456	5.42	1.53	6.1	6.3	6.0
October	29.36	29.65	28.87	43.9	55.8	62.5	42.6	52.6	78	30	38	42	78	60	.236	.282	1.76	1.14	4.1	3.0	4.2
November	29.45	30.02	28.91	36.6	42.3	48.8	33.3	41.0	74	8	31	34	78	72	.195	.225	1.88	.99	6.5	4.8	6.8
December	29.48	30.01	29.03	30.7	37.5	43.2	29.3	36.2	64	9	26	30	80	72	.142	.168	.31	.14	5.9	5.2	6.6
Year	29.37	30.02	28.70	47.8	56.6	62.3	45.2	53.7	98	—4	42	45	79	65	.320	.357	35.73	4.03	5.5	5.2	5.7

SPRINGFIELD, MO.

[λ = 37° 12′ N.; φ = 93° 18′ W.; gravity corr., —0.02.]

Month.	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
January	28.71	29.29	28.19	30.8	37.5	42.7	28.1	35.4	64	4	26	28	81	69	.146	.163	1.50	0.85	5.8	6.0	6.2
February	28.59	28.99	28.15	31.4	41.1	46.7	29.8	38.2	71	13	25	27	78	60	.139	.153	2.25	1.20	5.0	3.9	4.2
March	28.62	29.06	28.06	33.9	44.3	49.0	31.5	40.2	76	14	28	31	81	62	.166	.182	3.40	1.42	6.2	6.2	6.5
April	28.60	28.98	28.26	56.1	66.3	72.4	53.2	62.8	85	28	50	51	80	60	.383	.398	3.95	1.19	5.1	4.9	5.1
May	28.56	28.81	28.22	64.0	73.7	78.9	60.0	69.5	86	47	58	61	82	66	.499	.545	11.46	2.55	5.1	5.5	5.5
June	28.61	28.89	28.40	66.5	76.8	80.7	63.3	72.0	89	50	62	64	90	65	.569	.600	2.81	.84	4.6	3.4	3.9
July	28.67	28.82	28.53	72.0	81.5	86.1	68.7	77.4	95	57	65	67	79	62	.620	.667	2.98	1.27	4.1	4.1	4.5
August	28.68	28.96	28.41	70.7	80.3	87.2	67.7	77.4	100	57	62	64	76	60	.572	.608	3.04	.93	3.6	3.7	3.8
September	28.64	28.97	28.40	59.1	69.9	76.5	57.2	66.8	92	40	54	56	83	64	.433	.483	4.12	1.12	3.9	3.9	4.5
October	28.65	28.92	28.20	48.1	58.3	64.9	45.7	55.3	83	33	43	44	84	61	.293	.301	2.50	1.02	3.4	3.2	3.7
November	28.72	29.25	28.14	39.0	45.5	53.3	35.7	44.5	74	9	34	35	84	68	.233	.234	2.09	1.22	4.7	4.6	5.5
December	28.76	29.24	28.33	35.6	43.6	49.5	33.6	41.6	68	16	28	31	75	64	.161	.182	.79	.54	5.2	3.1	5.1
Year	28.65	29.29	28.06	50.6	59.9	65.7	47.9	56.8	100	4	45	47	81	63	.351	.376	40.89	2.55	4.7	4.4	4.9

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

SIOUX CITY, IOWA.

[H = 1,162 ft.; h_t = 96 ft.; h_r = 92 ft.; h_a = 109 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	11.2	NW.	41	NW.	1	1	1	2	7	8	0	1	11	0	4	9	18	3	1	2	0	1	13	0	30	0	0
February	11.5	NW.	42	NW.	2	4	4	1	5	5	1	1	8	0	13	7	9	4	4	2	0	0	10	0	26	0	0
March	13.4	NW.	44	N.	4	7	3	1	4	4	1	2	9	0	8	12	11	8	5	7	0	0	11	0	29	1	0
April	13.8	SE.	50	NW.	4	5	3	5	6	5	0	1	5	0	11	9	10	14	11	1	2	0	0	0	7	6	0
May	12.6	S.	45	W.	5	4	4	2	6	11	0	1	3	0	6	10	15	9	9	0	0	1	0	0	0	8	0
June	9.6	NE.	56	SW.	1	3	7	3	4	7	1	1	4	0	12	11	7	12	9	0	0	0	0	3	0	10	0
July	8.2	SE.	52	NW.	1	7	3	2	8	8	0	0	3	0	12	13	6	10	8	0	0	0	0	5	0	8	0
August	9.1	S.	42	N.	1	6	6	2	3	11	1	0	2	0	14	9	8	7	6	0	0	0	0	7	0	6	0
September	9.8	NW.	37	S.	0	7	2	1	6	6	0	0	7	1	14	7	9	8	7	0	0	2	0	0	0	3	0
October	10.0	SE.	36	S.	0	4	3	2	8	3	3	0	8	0	16	5	10	6	5	1	0	1	0	0	12	2	0
November	11.0	NW.	36	NW.	0	3	5	3	1	2	2	0	13	1	6	10	14	5	5	3	0	1	15	0	30	1	0
December	9.0	S.	35	SE.	0	7	1	1	4	8	2	2	6	0	9	9	13	3	2	2	0	7	8	0	27	0	0
Year	10.8	NW.	56	SW.	19	58	42	25	62	78	11	9	79	2	125	111	130	89	72	18	2	13	57	15	161	45	0

SPOKANE, WASH.

[H = 1,943 ft.; h_t = 99 ft.; h_r = 90 ft.; h_a = 107 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	6.2	S.	30	SW.	0	9	8	8	6	16	9	3	5	0	2	5	24	18	14	10	0	2	9	0	22	0	0
February	8.7	SW.	36	SW.	0	1	7	5	4	15	20	4	2	0	4	10	15	7	5	2	0	0	0	0	12	0	0
March	7.6	SW.	36	SW.	0	4	10	8	3	6	26	3	2	0	8	7	16	9	5	5	0	0	4	0	17	0	0
April	7.3	SW.	28	SW.	0	2	8	5	5	15	21	0	4	0	2	7	21	12	8	1	1	0	0	0	4	0	0
May	6.8	SW.	30	SW.	0	6	3	3	4	16	26	1	3	0	3	5	23	17	15	0	2	1	0	0	0	1	0
June	6.1	SW.	30	SE.	0	0	3	8	3	14	20	9	3	0	13	11	6	6	4	0	0	0	0	4	0	2	0
July	5.0	NE.	26	NE.	0	6	9	7	7	11	10	4	6	2	20	8	3	2	1	0	0	1	0	12	0	0	0
August	4.2	NE.	24	S.	0	5	12	3	3	7	11	3	10	8	17	7	7	4	3	0	0	0	0	6	0	0	0
September	4.1	NE.	27	SW.	0	6	9	6	3	4	11	1	7	13	14	8	8	5	2	0	0	2	0	0	0	0	0
October	3.7	S.	30	SE.	0	0	5	1	8	17	5	1	3	22	7	13	11	5	4	0	0	3	0	0	3	0	0
November	7.4	SW.	37	SW.	0	3	8	7	6	10	16	1	4	5	5	8	17	15	14	6	0	0	12	0	20	0	0
December	4.7	N.	28	SW.	0	12	6	4	9	8	9	4	3	7	2	10	19	18	14	4	0	5	3	0	14	0	0
Year	6.0	SW.	37	SW.	0	54	86	65	61	139	184	34	52	57	97	99	170	118	89	28	3	14	28	22	92	3	0

SPRINGFIELD, ILL.

[H = 644 ft.; h_t = 82 ft.; h_r = 60 ft.; h_a = 92 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.5	S.	28	NW.	0	2	7	7	8	15	4	6	13	0	5	12	14	7	4	2	0	4	7	0	25	0	0
February	11.1	NW.	35	NW.	0	6	4	0	2	10	5	14	17	0	8	9	12	9	7	7	0	1	7	0	24	0	0
March	11.1	NW.	36	S.	0	1	8	6	10	8	4	4	20	1	8	7	16	13	9	7	0	1	8	0	21	2	0
April	13.2	S.	44	S.	1	2	1	4	5	29	8	4	7	0	8	14	8	7	5	0	0	1	0	0	4	2	0
May	10.2	S.	36	S.	0	2	1	6	2	31	10	8	2	0	8	14	9	11	8	0	1	0	0	0	0	9	0
June	7.3	SW.	28	W.	0	5	3	8	6	10	10	9	9	0	6	15	9	12	10	0	0	1	0	2	0	9	0
July	7.7	SW.	36	W.	0	6	8	4	7	10	11	7	9	0	13	11	7	13	10	0	0	0	0	6	0	10	0
August	7.0	S.	22	NW.	0	0	7	6	5	17	8	3	10	0	14	15	2	3	3	0	0	0	0	9	0	4	0
September	8.8	S.	36	W.	0	8	13	6	2	14	3	2	12	0	8	10	12	15	13	0	0	1	0	1	0	7	0
October	8.6	NW.	36	SW.	0	5	8	3	8	12	5	1	20	0	14	10	7	6	5	0	0	0	0	0	3	0	0
November	11.6	S.	38	S.	0	4	2	3	3	24	2	4	18	0	7	5	18	9	5	1	0	3	5	0	15	1	0
December	9.2	S.	26	SE.	0	7	8	1	6	19	7	7	7	0	4	12	15	6	3	0	0	3	5	0	17	0	0
Year	9.6	S.	44	S.	1	54	70	54	64	199	77	69	144	1	103	134	129	111	82	17	1	15	30	18	109	44	0

SPRINGFIELD, MO.

[H = 1,324 ft.; h_t = 100 ft.; h_r = 3 ft.; h_a = 103 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.8	SE.	30	SW.	0	4	6	3	18	6	6	3	14	2	5	14	12	7	6	2	0	4	6	0	19	0	0
February	11.0	N.	30	SE.	0	15	3	1	8	10	8	3	10	0	12	11	6	6	5	3	0	2	2	0	16	0	0
March	12.1	SE.	36	SE.	0	6	10	8	15	3	5	5	10	0	6	11	14	10	10	4	0	1	4	0	18	2	0
April	14.1	SE.	48	SE.	3	0	2	5	25	16	4	2	5	1	6	21	3	11	11	0	0	0	0	0	3	10	0
May	11.7	S.	60	NW.	2	4	1	3	18	24	6	4	0	2	3	19	9	13	12	0	4	0	0	0	0	16	0
June	7.6	S.	25	SW.	0	8	6	5	13	14	2	4	8	0	13	12	5	10	7	0	1	2	0	0	0	8	0
July	8.2	SE.	25	SE.	0	7	2	5	17	14	12	2	2	1	8	18	5	8	7	0	0	0	0	11	0	10	0
August	8.1	SE.	36	S.	0	7	8	6	18	14	3	1	2	3	12	17	2	7	6	0	0	1	0	13	0	11	0
September	9.6	SE.	30	N.	0	12	7	1	21	6	3	1	9	0	11	13	6	13	11	0	0	3	0	5	0	6	0
October	9.5	SE.	36	W.	0	11	4	6	16	9	2	6	8	0	13	13	5	7	6	0	0	3	0	0	0	2	0
November	12.8	S.	48	SE.	1	13	4	3	13	18	1	0	8	0	7	12	11	9	8	1	0	4	4	0	14	1	0
December	10.1	SE.	36	SE.	0	3	8	1	19	8	8	6	8	1	9	14	8	4	4	1	0	3	1	0	14	0	0
Year	10.4	SE.	60	NW.	6	90	61	47	201	142	60	37	84	10	105	175	86	105	93	11	5	23	17	29	84	66	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

TAMPA, FLA.

[λ=27° 57′ N.; φ=82° 27′ W.; gravity corr., −0.04.]

Month.	Pressure.			Temperature.							Moisture.								Cloudiness.		
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.				
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	30.14	30.43	29.74	52.0	57.8	65.5	49.0	57.2	78	32	46	50	83	77	.337	.380	3.38	1.46	5.2	4.0	4.9
February	30.06	30.44	29.49	55.0	60.3	67.3	50.4	58.8	77	33	51	54	87	81	.392	.433	3.77	1.33	5.6	3.3	4.6
March	30.08	30.41	29.61	59.4	65.0	74.4	55.4	64.9	85	38	55	57	87	76	.456	.479	2.16	1.14	4.8	2.6	3.6
April	30.14	30.33	29.92	67.3	72.1	81.7	60.8	71.2	88	47	60	61	78	68	.526	.537	.86	.82	2.7	3.3	3.9
May	30.04	30.20	29.89	74.1	77.5	86.6	67.9	77.2	91	59	67	68	79	74	.670	.696	2.27	1.16	2.9	5.5	4.6
June	30.00	30.28	29.82	78.1	79.1	87.7	72.7	80.2	94	69	73	72	85	82	.810	.860	13.42	4.55	4.9	6.9	6.2
July	30.11	30.24	29.94	79.3	79.5	88.5	72.7	80.6	92	69	74	72	83	80	.825	.794	12.30	2.84	2.1	4.8	4.3
August	30.05	30.16	29.90	80.3	81.1	89.6	74.4	82.0	95	66	74	74	83	80	.853	.840	7.96	3.16	2.3	5.1	4.5
September	29.96	30.14	29.72	76.8	78.5	88.0	71.2	79.6	94	62	72	71	86	78	.784	.759	7.30	3.53	2.8	3.7	4.1
October	29.99	30.13	29.80	68.5	73.5	81.5	64.8	73.2	87	56	64	64	86	74	.608	.618	1.00	.60	4.0	3.0	3.8
November	30.12	30.30	29.89	67.0	72.6	80.2	63.7	72.0	85	53	64	64	90	76	.635	.610	3.96	2.90	3.8	2.7	3.6
December	30.14	30.47	29.76	54.8	61.4	69.1	51.4	60.2	80	40	51	54	88	80	.390	.439	1.25	.72	4.7	4.1	4.5
Year	30.07	30.47	29.49	67.7	71.5	80.0	62.9	71.4	95	32	63	63	85	77	.605	.616	59.63	4.55	3.8	4.1	4.4

TATOOSH ISLAND, WASH.

[λ=48° 23′ N.; φ=124° 44′ W.; gravity corr., +0.01.]

January	29.71	30.37	28.90	42.3	42.7	45.8	37.4	41.6	57	27	39	37	88	82	.243	.230	22.57	3.54	7.0	8.0	8.0
February	29.97	30.54	29.12	43.8	44.7	48.3	40.0	44.2	55	29	40	40	86	84	.249	.252	13.63	2.23	7.7	8.7	8.2
March	29.94	30.48	29.49	40.9	44.4	46.2	38.2	42.2	55	24	37	37	85	76	.222	.227	5.08	1.12	6.3	5.9	5.9
April	29.81	30.24	29.47	43.2	46.2	49.0	40.2	44.6	60	33	38	40	82	79	.229	.246	6.73	1.19	7.2	7.4	7.1
May	29.91	30.44	29.39	46.7	50.4	52.5	44.4	48.4	61	35	42	44	84	79	.270	.290	4.69	.84	7.4	6.7	6.7
June	29.99	30.27	29.66	51.4	54.9	57.0	49.0	53.0	69	46	48	50	87	83	.331	.358	3.89	1.52	7.8	6.6	7.2
July	29.96	30.13	29.74	54.6	59.4	61.7	52.3	57.0	70	48	52	54	90	84	.383	.427	.10	.08	5.7	5.3	6.8
August	29.96	30.11	29.82	55.5	59.0	61.8	52.9	57.4	72	48	52	54	90	84	.397	.421	2.48	1.46	6.1	6.0	7.6
September	29.95	30.22	29.65	50.0	53.5	56.5	47.6	52.0	68	42	46	48	86	84	.315	.340	.82	.72	5.1	3.7	6.0
October	29.92	30.24	29.46	49.7	51.1	54.3	46.2	50.2	60	42	45	46	86	82	.303	.307	6.75	1.92	6.3	6.7	6.8
November	29.85	30.40	29.22	40.1	40.5	43.1	36.3	39.7	54	25	34	34	77	77	.198	.201	14.16	2.62	7.5	8.5	7.7
December	29.81	30.10	29.06	46.3	47.0	48.3	42.6	45.4	52	35	41	41	83	82	.263	.264	19.91	4.28	9.0	9.2	9.4
Year	29.90	30.54	28.90	47.1	49.5	52.0	43.9	48.0	72	24	43	44	85	81	.284	.297	100.85	4.28	6.9	6.9	7.3

TOLEDO, OHIO.

[λ=41° 40′ N.; φ=83° 34′ W.; gravity corr., −0.01.]

January	29.42	29.85	28.86	23.9	27.2	31.3	21.1	26.2	46	−6	22	25	92	89	.123	.138	1.19	0.42	6.8	6.6	7.6
February	29.19	29.82	28.67	24.7	27.9	33.6	20.3	27.0	65	−4	21	23	86	82	.124	.130	2.44	.94	6.2	6.4	7.0
March	29.34	29.84	28.80	26.4	32.1	38.0	23.5	30.8	65	6	23	25	86	75	.129	.139	2.51	.69	5.5	5.9	6.1
April	29.36	29.84	29.00	49.0	55.7	63.5	44.6	54.0	86	21	43	43	79	65	.304	.309	3.30	1.46	4.9	5.0	5.4
May	29.27	29.58	28.83	62.4	68.5	75.9	57.2	66.6	89	47	54	54	76	62	.428	.431	2.22	.57	4.4	5.3	4.6
June	29.27	29.53	28.90	65.9	71.9	77.8	60.2	69.0	89	47	58	57	78	61	.503	.477	2.90	1.14	4.8	5.1	4.5
July	29.30	29.54	29.04	68.2	75.0	80.9	63.9	72.4	91	51	62	63	82	68	.574	.588	6.65	1.45	5.1	5.0	5.5
August	29.33	29.71	28.99	66.8	73.2	80.3	62.0	71.2	95	48	60	62	80	69	.512	.588	3.66	1.40	4.3	3.6	4.3
September	29.31	29.68	28.69	56.2	62.1	69.0	52.0	60.5	88	35	52	53	85	74	.399	.419	4.09	1.44	6.4	5.4	6.0
October	29.34	29.70	28.99	42.8	49.9	56.3	40.6	48.4	74	28	38	40	82	70	.235	.258	1.20	.47	5.2	3.6	4.6
November	29.40	29.81	28.70	39.8	42.0	50.5	34.7	42.6	68	15	36	36	86	79	.229	.231	1.71	.57	6.6	6.2	7.0
December	29.45	30.00	28.95	28.1	32.6	36.6	25.4	31.0	58	1	25	28	89	83	.142	.156	1.17	.44	6.7	5.4	6.9
Year	29.33	30.00	28.67	46.2	51.5	57.8	42.1	50.0	95	−6	41	42	84	73	.311	.322	33.10	1.46	5.6	5.3	5.8

TOPEKA, KANS.

[λ=39° 3′ N.; φ=95° 41′ W.; gravity corr., —.]

January						41.3	23.5	32.4	58	1							0.41	0.17			
February						48.0	26.8	37.4	78	7							.60	.27			
March						50.8	28.5	39.6	76	12							.62	.27			
April						74.1	51.4	62.8	90	25							4.00	1.81			
May						79.5	60.1	69.8	91	44							9.30	1.60			
June						83.5	62.4	73.0	93	48							3.19	1.61			
July						88.0	68.4	78.2	99	58							5.54	2.75			
August						89.5	66.7	78.1	105	56							5.60	3.40			
September						76.6	54.2	65.4	96	36							2.61	.50			
October						68.3	43.3	55.8	91	32							3.34	1.35			
November						50.9	29.4	40.2	75	3							1.04	.93			
December						52.1	29.9	41.0	69	17							.31	.25			
Year						66.9	45.4	56.1	105	1							36.56	3.40			

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

TAMPA, FLA.

[H=36 ft.; h_t=60 ft.; h_r=51 ft.; h_a=67 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		Mi.																								
January	5.8	NW.	24	SE.	0	12	10	6	5	2	1	11	13	2	11	14	6	11	7	0	0	3	0	0	0	2	0
February	8.0	W.	48	SE.	1	8	6	5	7	6	2	15	9	0	12	10	7	10	10	0	0	0	0	0	0	1	0
March	7.0	N.	36	S.	0	12	9	3	4	5	8	10	10	1	18	9	4	5	5	0	0	2	0	0	0	2	0
April	6.2	E.	21	E.	0	6	12	18	1	1	2	8	11	1	15	13	2	2	2	0	0	0	0	0	0	2	0
May	6.0	E.	27	NW.	0	7	9	11	10	1	5	9	10	0	9	21	1	10	9	0	0	0	0	2	0	3	0
June	6.0	E.	30	SE.	0	2	9	13	9	4	11	6	6	0	5	15	10	16	15	0	0	0	0	9	0	7	0
July	6.0	E.	30	SE.	0	6	9	18	13	1	1	4	10	0	14	14	3	20	19	0	0	0	0	12	0	11	0
August	4.9	SE.	26	SE.	0	3	13	10	16	3	4	6	7	0	9	21	1	14	11	0	0	0	0	16	0	13	0
September	6.0	NE.	38	SW.	0	8	29	9	7	0	1	2	4	0	10	17	3	14	13	0	0	0	0	9	0	4	0
October	5.4	N.	20	NW.	0	17	17	6	3	2	2	5	10	0	16	10	5	5	4	0	0	0	0	0	0	0	0
November	6.8	NE.	29	NE.	0	14	23	11	3	0	2	2	5	0	16	13	1	7	5	0	0	0	0	0	0	0	0
December	6.6	N.	28	N.	0	23	17	3	3	1	1	5	9	0	16	6	9	9	7	0	0	2	0	0	0	0	0
Year	6.2	NE.	48	SE.	1	118	163	113	81	26	40	83	104	4	151	163	52	123	107	0	0	7	0	48	0	45	0

TATOOSH ISLAND, WASH.

[H=86 ft.; h_t=7 ft.*; h_r=1 ft.; h_a=21 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	18.7	E.	60	SE.	17	0	0	22	7	12	9	5	7	0	4	4	23	27	26	9	1	0	0	0	8	0	0
February	18.9	W.	68	W.	9	0	2	17	2	9	10	17	1	0	3	5	21	25	24	5	0	1	0	0	2	0	0
March	15.3	E.	52	NE.	8	1	7	21	5	5	4	15	4	0	11	5	15	16	12	4	1	2	1	0	4	0	0
April	12.8	E.	48	SW.	5	1	3	15	10	6	10	14	1	0	5	9	16	20	16	0	0	2	0	0	0	0	0
May	11.3	W.	52	NE.	3	0	3	8	10	6	13	17	5	0	7	8	16	20	18	0	0	1	0	0	0	0	0
June	8.3	W.	36	S.	0	2	5	8	4	6	14	17	3	1	5	7	18	14	12	0	0	4	0	0	0	0	0
July	6.5	SW.	26	E.	0	0	1	7	1	18	25	6	4	0	9	2	20	2	1	0	0	11	0	0	0	0	0
August	6.3	W.	29	E.	0	4	4	12	2	10	10	15	4	1	5	3	23	11	7	0	0	10	0	0	0	0	0
September	7.9	NE.	36	E.	0	2	16	13	4	14	7	1	3	0	10	6	14	4	3	0	0	16	0	0	0	0	0
October	10.7	E.	52	S.	3	1	0	28	3	17	5	7	1	0	6	7	18	15	15	0	0	11	0	0	0	0	0
November	18.6	E.	50	S.	9	1	2	27	1	0	5	7	11	0	6	1	23	23	19	2	1	0	1	0	7	1	0
December	18.8	E.	54	S.	10	2	5	21	6	21	5	0	2	0	1	0	30	27	26	0	0	5	0	0	0	0	0
Year	12.8	E.	68	W.	64	14	48	199	55	130	117	121	46	2	72	57	237	204	179	20	3	63	2	0	21	1	0

a Lowered from 12 ft. to 7 ft. on July 30, 1896.

TOLEDO, OHIO.

[H=674 ft.; h_t=122 ft.; h_r=113 ft.; h_a=127 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.8	W.	32	NE.	0	2	2	11	6	3	12	13	13	0	6	6	19	9	6	6	0	1	13	0	28	0	0
February	12.7	W.	44	NW.	1	7	7	6	1	2	9	22	4	0	3	12	14	13	8	10	0	2	9	0	26	0	0
March	11.4	NW.	37	SW.	0	6	5	10	6	2	7	16	10	0	8	10	13	12	11	7	0	0	13	0	28	1	0
April	11.4	SW.	38	W.	0	1	4	11	6	3	14	9	12	0	9	10	11	11	7	1	0	0	0	0	7	5	0
May	10.1	W.	36	SW.	0	2	1	17	3	6	9	20	4	0	13	10	8	11	8	0	0	1	0	0	0	11	0
June	8.1	E.	36	W.	0	5	4	19	6	2	9	10	5	0	12	12	6	10	9	0	0	0	0	0	0	11	0
July	8.5	SW.	33	SW.	0	6	8	5	2	4	19	13	5	0	9	13	9	15	12	0	0	0	0	1	0	6	0
August	8.1	SW.	35	NW.	0	6	4	6	6	7	17	8	8	0	15	11	5	10	8	0	0	0	0	4	0	6	0
September	9.1	SW.	31	SW.	0	7	10	3	5	5	17	7	6	0	8	11	11	13	10	0	1	2	0	0	0	2	0
October	9.0	W.	36	SW.	0	8	3	11	3	5	11	11	10	0	14	8	9	9	7	0	0	1	0	0	4	1	0
November	12.1	SW.	44	SW.	1	1	4	3	8	7	18	11	8	0	7	5	18	14	11	3	0	1	4	0	13	0	0
December	9.4	SW.	33	SW.	0	5	4	6	4	4	16	14	9	0	6	8	17	6	4	3	0	4	10	0	19	0	0
Year	10.0	SW.	44	NW.	2	56	56	108	56	50	158	154	94	0	110	116	140	133	101	30	1	12	49	5	125	43	0

TOPEKA, KANS.

[H=— ft.; h_t=81 ft.; h_r=73 ft.; h_a=89 ft.]

Month.	Average hourly velocity.	Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	.....	S.	....	.....	....	5	0	6	3	8	3	1	5	0	5	10	16	8	4	3	0	7	5	0	25	0	0
February	.....	NW.	....	.....	....	4	4	0	2	4	5	4	6	0	10	10	9	5	3	1	0	2	1	0	23	0	0
March	.....	N.	....	.....	....	6	3	3	4	4	3	3	5	0	11	10	10	8	6	3	0	0	4	0	21	0	0
April	.....	SE.	....	.....	....	1	0	2	9	8	3	5	2	0	9	7	14	11	9	0	0	0	0	0	3	7	0
May	.....	S.	....	.....	....	1	3	2	5	11	2	3	4	0	3	14	14	14	14	0	4	0	0	1	0	10	0
June	.....	SE.	....	.....	....	3	6	3	7	4	3	3	1	0	9	10	11	11	8	0	1	0	0	5	0	5	0
July	.....	S.	....	.....	....	8	5	3	5	8	6	0	1	0	12	12	7	10	10	0	1	2	0	12	0	4	0
August	.....	S.	....	.....	....	2	5	4	7	10	0	0	3	0	15	11	5	6	6	0	1	0	0	14	0	4	0
September	.....	N.	....	.....	....	6	5	5	5	4	1	1	3	0	8	10	12	10	9	0	0	0	0	3	0	6	0
October	.....	S.	....	.....	....	5	2	1	5	7	1	5	5	0	15	11	5	8	5	0	0	0	0	1	0	1	0
November	.....	S.	....	.....	....	4	2	1	3	9	2	1	8	0	9	12	9	7	2	0	0	1	5	0	17	0	0
December	.....	S.	....	.....	....	3	1	1	3	8	4	7	4	0	9	13	9	3	2	0	0	1	2	0	19	0	0
Year	.....	S.	....	.....	....	43	36	31	58	85	33	33	47	0	115	130	121	101	78	7	7	13	17	36	108	37	0

* By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

VICKSBURG, MISS.

[λ = 32° 22′ N.; φ = 90° 53′ W.; gravity corr., −0.03.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	29.88	30.47	29.24	41.9	50.0	54.9	39.7	47.2	74	22	37	38	81	65	.231	.247	3.94	1.18	5.6	6.3	6.8
February	29.76	30.19	29.13	45.5	54.0	59.3	42.4	50.8	70	28	39	37	79	55	.255	.230	10.13	3.59	4.4	4.5	4.8
March	29.78	30.14	29.42	49.9	60.5	65.8	46.8	56.3	85	30	42	43	73	56	.290	.310	3.23	1.05	4.9	4.9	4.9
April	29.83	30.16	29.54	63.9	73.7	79.4	61.3	70.4	86	44	57	55	80	54	.500	.459	2.27	1.63	5.6	4.2	3.3
May	29.73	29.97	29.50	72.0	81.2	86.5	67.9	77.2	93	61	66	65	82	59	.648	.614	2.40	1.10	3.4	3.9	2.8
June	29.71	30.02	29.53	73.6	82.3	88.9	70.1	79.5	95	61	68	68	83	64	.692	.695	5.90	2.32	4.7	3.6	3.0
July	29.80	29.98	29.60	76.8	86.2	92.8	73.7	83.2	100	67	71	69	82	58	.754	.713	1.09	.32	2.5	3.3	1.5
August	29.78	29.96	29.61	76.1	84.1	93.7	72.3	83.0	100	57	70	70	82	63	.739	.733	1.11	.42	3.4	6.1	3.0
September	29.73	29.97	29.56	68.8	79.5	87.6	66.1	76.8	96	42	62	61	79	55	.575	.554	.26	.10	2.9	3.1	2.3
October	29.77	29.94	29.48	57.3	68.7	75.8	55.4	65.6	87	43	52	54	85	63	.407	.442	3.60	1.43	4.7	3.5	4.2
November	29.88	30.21	29.56	54.3	61.8	69.7	49.8	59.8	86	27	50	52	85	73	.399	.420	2.67	2.02	5.5	3.2	3.3
December	29.94	30.36	29.46	44.0	55.5	62.0	42.5	52.2	75	30	39	37	82	53	.248	.246	1.38	.75	4.6	2.5	3.9
Year	29.80	30.47	29.13	60.3	69.8	76.4	57.3	66.8	100	22	54	54	81	60	.478	.472	37.98	3.59	4.4	4.1	3.6

VINEYARD HAVEN, MASS.

[λ = 41° 26′ N.; φ = 70° 43′ W.; gravity corr., —.]

January						36.2	24.6	30.4	50	−2							2.04	1.08			
February						42.2	25.3	33.8	65	−4							5.01	1.62			
March						43.2	27.9	35.6	60	13							5.70	1.08			
April						54.7	39.1	46.9	79	26							1.37	.54			
May						68.4	50.3	59.4	86	38							4.13	2.14			
June						73.0	57.6	65.3	85	50							3.59	1.34			
July						79.0	65.4	72.2	89	57							3.59	.96			
August						78.6	64.2	71.4	92	52							2.81	1.10			
September						70.0	57.4	63.7	81	45							6.63	3.15			
October						58.7	47.5	53.1	70	36							5.82	2.92			
November						57.8	43.2	50.5	67	29							2.93	1.03			
December						41.6	28.1	34.8	57	10							3.08	1.48			
Year						58.6	44.2	51.4	92	−4							46.70	3.15			

WALLA WALLA, WASH.

[λ = 46° 2′ N.; φ = 118° 20′ W.; gravity corr., 0.00.]

January	28.90	29.40	28.29	37.1	40.3	45.9	32.3	39.1	63	14	32	36	84	85	.186	.216	1.88	0.44	6.9	6.3	6.1
February	29.05	29.47	28.50	40.7	48.9	52.6	36.4	44.5	69	28	34	40	79	73	.198	.252	1.20	.40	5.5	6.0	5.4
March	28.97	29.48	28.43	38.4	49.7	52.8	35.4	44.1	74	7	34	41	84	73	.203	.270	1.15	.34	5.3	5.3	5.2
April	28.84	29.31	28.49	42.9	54.9	57.9	39.9	48.9	72	30	38	44	82	69	.229	.294	3.85	1.04	5.5	6.5	5.5
May	28.89	29.31	28.57	46.9	61.1	64.0	44.7	54.4	84	36	42	48	84	63	.273	.337	1.68	.48	5.8	5.9	5.5
June	28.92	29.22	28.59	56.4	79.6	81.4	54.1	67.8	105	44	46	50	71	38	.322	.364	.88	.45	2.7	2.3	3.1
July	28.86	29.05	28.66	67.5	91.1	93.2	65.0	79.1	106	51	51	53	56	29	.378	.417	.15	.08	1.7	1.6	2.0
August	28.89	29.03	28.73	63.9	84.7	87.3	61.0	74.2	96	53	47	51	56	34	.331	.384	1.24	.89	3.4	3.0	3.5
September	28.92	29.18	28.64	53.8	72.2	74.2	51.0	62.6	92	40	44	47	71	43	.297	.335	.17	.10	2.4	3.0	3.2
October	28.97	29.23	28.55	47.8	60.5	64.0	44.4	54.2	85	36	41	46	78	60	.259	.312	1.57	.84	3.0	3.9	3.8
November	28.99	29.64	28.38	32.6	34.9	39.3	28.2	33.8	71	−9	26	28	79	78	.158	.172	3.09	.54	6.5	6.3	6.7
December	28.99	29.32	28.45	37.4	40.0	44.3	34.2	39.2	64	10	32	35	85	84	.187	.204	2.55	.86	6.3	6.4	7.9
Year	28.93	29.64	28.29	47.1	59.8	63.1	43.9	53.5	106	−9	39	43	76	61	.252	.296	19.41	1.04	4.6	4.7	4.8

WASHINGTON, D. C.

[λ = 38° 54′ N.; φ = 77° 3′ W.; gravity corr., −0.02.]

January	30.10	30.45	29.46	29.6	33.9	40.1	26.5	33.3	59	8	23	23	74	64	.128	.132	2.27	1.94	5.7	4.7	5.4
February	29.83	30.43	28.59	32.1	37.2	45.2	28.2	36.7	60	8	24	25	72	63	.146	.153	5.31	2.29	4.8	4.2	4.5
March	29.93	30.54	29.06	33.9	40.0	47.6	29.4	38.5	70	14	27	28	74	61	.159	.163	5.16	1.34	4.7	4.4	4.3
April	30.04	30.43	29.64	52.0	59.2	66.5	46.7	56.6	93	28	43	43	73	58	.305	.307	1.07	.51	5.1	4.7	4.1
May	29.93	30.29	29.61	65.0	69.8	78.6	59.0	68.8	94	42	57	58	77	68	.477	.486	2.26	.87	5.7	6.2	6.0
June	29.89	30.16	29.48	67.7	72.1	79.9	62.7	71.3	92	52	60	62	78	73	.530	.574	2.39	.86	5.4	5.8	5.6
July	29.94	30.27	29.64	74.1	76.8	85.3	68.1	76.7	94	56	67	68	79	74	.666	.688	3.69	.99	6.0	6.4	6.0
August	29.94	30.21	29.74	72.2	76.2	86.0	65.6	75.8	98	50	65	64	78	67	.629	.619	2.65	1.91	3.1	3.3	3.1
September	29.94	30.26	29.51	64.2	67.7	78.1	57.6	67.8	94	42	58	60	81	76	.501	.532	3.18	1.17	4.6	4.0	4.1
October	29.96	30.37	29.57	50.0	54.2	63.7	44.3	54.0	76	31	43	43	78	67	.287	.291	.34	.16	4.8	4.2	4.6
November	30.12	30.64	29.46	45.7	51.7	60.8	40.5	50.6	77	26	40	40	82	67	.272	.271	2.54	.91	5.9	4.6	5.6
December	30.11	30.81	29.67	31.3	36.3	44.4	26.9	35.6	66	12	23	26	70	65	.128	.145	.30	.18	5.6	3.5	4.7
Year	29.98	30.81	28.59	51.5	56.3	64.7	46.3	55.5	98	8	44	45	76	67	.352	.363	31.16	2.29	5.1	4.7	4.8

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

VICKSBURG, MISS.

[H = 254 ft.; h_t = 65 ft.; h_r = 58 ft.; h_a = 73 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		Mi.																								
January	7.3	SE.	26	S.	0	7	6	11	18	5	5	4	6	0	6	8	17	9	8	0	0	4	0	0	5	2	0
February	8.3	SW.	32	W.	0	7	10	5	10	8	8	5	5	0	16	0	13	10	9	0	0	1	0	0	3	3	0
March	9.4	SE.	38	W.	0	6	10	8	15	10	6	1	6	0	14	8	9	9	8	0	0	0	0	0	1	2	0
April	7.9	SE.	28	SE.	0	3	2	4	19	13	19	0	0	0	16	11	3	4	3	0	0	1	0	0	0	4	0
May	6.3	SW.	35	W.	0	2	2	12	14	11	16	3	2	0	20	9	2	5	5	0	0	1	0	5	0	7	0
June	6.2	SE.	26	SW.	0	5	8	9	15	4	14	3	2	0	20	9	1	9	8	0	1	0	0	14	0	9	0
July	5.9	SW.	28	SE.	0	4	4	2	15	4	24	7	2	0	29	2	0	5	4	0	0	0	0	28	0	5	0
August	5.4	SW.	32	SW.	0	9	10	3	10	7	16	4	3	0	20	9	2	8	6	0	0	0	0	27	0	13	0
September	6.0	SE.	20	E.	0	8	12	7	15	3	11	4	0	0	25	2	3	6	3	0	0	3	0	16	0	2	0
October	5.5	N.	28	W.	0	17	13	7	11	3	5	4	2	0	17	7	7	9	5	0	0	1	0	0	0	2	0
November	8.4	SE.	32	S.	0	8	10	6	29	4	0	1	2	0	18	7	5	7	5	0	0	0	0	0	1	4	0
December	6.8	SE.	24	NW.	0	10	13	8	13	7	5	2	4	0	17	9	5	4	4	0	0	0	0	0	4	0	0
Year	7.0	SE.	38	W.	0	86	100	82	184	79	129	38	34	0	218	81	67	85	68	0	1	11	0	90	14	53	0

VINEYARD HAVEN, MASS.

[H = — ft.; h_t = 20 ft.; h_r = 3 ft.; h_a = 55 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	10.2	NW.	....	.....	1	3	8	1	3	1	2	0	12	1	9	10	12	7	4	3	0	2	4	0	27	0	0
February	13.0	NW.	....	.....	3	1	2	3	2	1	6	5	9	0	11	6	12	16	12	2	1	1	5	0	21	0	0
March	12.7	NW.	....	.....	2	4	3	1	2	0	7	3	11	0	14	6	11	16	12	6	0	2	3	0	25	0	0
April	9.7	SW.	....	.....	0	1	2	3	4	3	11	0	6	0	8	14	8	10	6	0	0	2	0	0	3	3	0
May	9.0	SW.	....	.....	0	0	3	0	7	0	15	4	2	0	6	13	12	8	7	0	0	5	0	0	0	4	1
June	7.6	SW.	....	.....	1	2	2	1	2	3	15	5	0	0	7	11	12	6	6	0	0	6	0	0	0	0	0
July	8.0	SW.	....	.....	0	1	1	2	2	2	20	3	0	0	9	10	12	13	10	0	0	6	0	0	0	1	0
August	6.0	SW.	....	.....	0	1	3	3	4	3	11	1	5	0	13	7	11	7	5	0	0	3	0	2	0	4	0
September	9.9	SW.	....	.....	2	3	4	3	2	2	12	1	3	0	9	3	18	12	12	0	0	3	0	0	0	2	0
October	11.4	NE.	....	.....	3	4	11	0	0	2	5	1	8	0	7	5	19	11	8	0	0	1	0	0	0	0	0
November	9.9	SW.	....	.....	0	3	3	1	3	4	10	1	5	0	6	7	17	14	10	0	0	2	0	0	4	0	0
December	10.6	NW.	....	.....	3	4	5	0	2	2	4	6	8	0	10	7	14	7	5	4	0	0	4	0	19	0	1
Year	9.8	SW.	....	.....	15	27	47	18	33	23	118	30	69	1	109	99	158	127	97	15	1	33	16	2	99	14	2

WALLA WALLA, WASH.

[H = 1,018 ft.; h_t = 65 ft.; h_r = 56 ft.; h_a = 73 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.5	S.	33	S.	0	4	2	2	11	23	8	10	2	0	7	13	11	14	10	3	0	1	5	0	15	0	0
February	7.7	S.	38	SW.	0	2	0	3	4	27	15	6	1	0	6	19	4	11	7	2	0	0	0	0	6	0	0
March	6.7	S.	32	SW.	0	6	2	3	5	24	12	8	2	0	10	15	6	10	8	1	2	0	3	0	16	0	0
April	7.0	S.	33	W.	0	9	0	5	8	25	9	3	1	0	6	21	3	19	11	1	4	0	0	0	3	1	0
May	7.4	S.	30	SE.	0	1	1	3	10	32	11	3	1	0	6	22	3	15	8	0	0	0	0	0	0	0	0
June	5.9	S.	22	SW.	0	7	1	5	2	27	10	6	2	0	21	8	1	6	3	0	0	0	0	5	0	1	0
July	4.9	S.	24	SW.	0	8	3	5	4	21	10	9	2	0	27	4	0	3	2	0	0	0	0	18	0	1	0
August	5.1	S.	24	W.	0	7	0	3	7	23	13	8	1	0	18	11	2	6	5	0	0	0	0	14	0	1	0
September	5.1	SW.	30	NE.	0	7	3	11	5	10	12	7	5	0	18	12	0	3	2	0	0	0	0	1	0	0	0
October	4.7	S.	26	SW.	0	9	6	4	5	22	9	7	0	0	14	14	3	7	4	0	0	3	0	0	0	0	0
November	7.5	S.	33	S.	0	2	0	1	3	31	19	4	0	0	4	11	15	18	13	5	0	3	12	0	15	0	0
December	4.9	S.	27	S.	0	2	1	6	6	26	13	6	2	0	0	8	23	20	9	2	0	10	2	0	13	0	0
Year	6.2	S.	38	SW.	0	64	19	51	70	291	141	77	19	0	137	158	71	132	82	14	6	17	22	38	62	4	0

WASHINGTON, D. C.

[H = 112 ft.; h_t = 59 ft.; h_r = 42 ft.; h_a = 76 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.4	NW.	34	NW.	0	8	7	3	7	7	2	3	23	2	9	11	11	4	3	1	0	0	4	0	25	1	0
February	9.9	NW.	42	W.	1	8	8	4	3	6	6	6	17	0	12	9	8	13	9	1	0	1	4	0	17	1	0
March	11.0	NW.	44	NW.	1	6	7	2	4	9	2	5	23	4	16	5	10	11	7	5	1	0	0	0	19	0	0
April	7.6	NW.	36	NW.	0	5	7	8	5	11	5	4	13	2	15	8	7	9	6	1	0	0	0	3	6	1	0
May	6.1	S.	54	SW.	3	2	11	3	9	12	7	8	9	1	8	9	14	14	10	0	1	0	0	5	0	8	0
June	5.2	S.	28	NW.	0	10	5	7	5	16	8	5	6	0	9	13	8	13	9	0	0	0	0	1	0	6	0
July	5.5	S.	26	NW.	0	7	2	1	4	16	15	6	8	3	9	8	14	17	11	0	0	0	0	6	0	8	0
August	5.0	N.	24	N.	0	18	5	1	5	11	3	8	12	1	20	6	5	7	4	0	0	0	0	10	0	2	0
September	6.0	S.	68	SE.	2	8	6	4	5	14	5	5	11	2	14	9	7	12	7	0	0	0	0	3	0	4	0
October	6.7	NW.	28	NW.	0	14	9	2	3	14	0	5	15	0	15	6	10	7	2	0	0	0	0	0	2	0	0
November	6.7	S.	30	NW.	0	12	4	3	2	23	4	2	8	2	9	8	13	12	7	1	0	0	0	0	4	0	0
December	6.7	S.	34	NW.	0	14	6	2	2	14	5	5	12	2	12	8	11	5	3	1	0	0	5	0	23	0	1
Year	7.0	S.	66	SE.	7	110	77	40	54	153	60	62	157	19	148	100	118	124	78	10	2	1	13	28	96	31	1

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

WICHITA, KANS.

[λ = 37° 41′ N.; φ = 97° 20′ W.; gravity corr., −0.02.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	28.68	29.31	28.31	29.7	37.9	44.8	26.6	35.7	66	4	24	29	79	72	.138	.166	0.62	0.31	5.4	4.9	5.9
February	28.58	28.98	28.10	30.1	44.5	52.5	27.9	40.2	78	16	24	30	76	60	.131	.170	.37	.20	2.4	3.1	3.7
March	28.59	29.05	27.83	32.7	45.0	52.4	30.5	41.4	80	17	26	31	76	63	.143	.179	1.58	.47	5.7	5.5	5.5
April	28.46	29.04	28.06	55.0	68.3	75.5	52.1	63.7	89	24	48	48	78	52	.364	.373	3.26	1.94	5.3	4.7	4.8
May	28.44	28.72	28.12	65.5	74.1	82.4	61.2	71.8	96	49	58	58	76	59	.489	.495	3.02	1.05	6.3	4.7	5.3
June	28.56	28.84	28.24	67.1	79.7	85.3	63.0	74.2	98	48	60	60	78	54	.518	.536	7.10	1.95	4.4	3.4	4.1
July	28.59	28.73	28.40	71.5	82.8	88.3	68.6	78.4	99	60	66	68	82	62	.632	.679	3.40	.88	4.3	3.3	4.2
August	28.58	28.88	28.27	71.7	86.4	93.9	69.4	81.6	106	56	60	59	69	43	.537	.519	.31	.15	3.2	3.2	3.1
September	28.59	28.93	28.24	58.9	71.4	80.2	56.4	68.3	98	36	52	53	80	56	.413	.426	3.08	.81	4.8	4.7	4.5
October	28.61	28.92	28.15	47.1	59.6	68.7	44.9	56.8	90	34	41	42	80	54	.268	.280	2.27	1.14	4.2	2.0	3.8
November	28.66	29.24	28.00	35.8	43.0	52.0	31.6	41.8	75	7	30	30	79	63	.195	.197	1.42	1.13	4.2	3.2	4.7
December	28.71	29.27	28.29	33.2	44.9	53.7	31.2	42.4	72	16	27	30	76	58	.149	.171	.63	.44	4.4	2.9	4.3
Year	28.59	29.31	27.83	49.9	61.5	69.1	47.0	58.0	106	4	43	45	77	58	.331	.349	27.06	1.95	4.6	3.8	4.5

WILLISTON, N. DAK.

[λ = 48° 9′ N.; φ = 103° 35′ W.; gravity corr., +0.01.]

January	28.04	28.63	27.47	4.3	7.1	14.1	−1.5	6.3	43	−24	−1	1	77	74	.049	.055	2.02	0.51	6.2	4.7	6.2
February	a27.96	a28.36	a27.35	b10.0	c18.1	26.8	3.1	15.0	50	−20	b5	c12	b80	c75	b.062	c.086	.71	.40	b5.0	c4.8	5.8
March	28.00	28.58	27.27	12.8	22.1	28.2	7.9	18.0	55	−16	10	16	87	77	.080	.098	1.80	.78	6.2	5.9	6.3
April	27.90	28.38	27.25	33.1	47.4	51.6	29.9	40.8	76	10	30	31	86	58	.167	.182	2.86	1.20	5.5	5.3	5.5
May	27.84	28.15	27.45	48.5	60.2	64.1	43.5	53.8	76	34	42	43	81	56	.279	.286	5.79	1.38	6.4	5.6	6.4
June	27.94	28.22	27.48	58.1	74.4	76.8	52.4	64.6	92	40	53	54	83	51	.404	.423	3.45	2.08	3.3	2.7	3.1
July	28.02	28.37	27.69	59.5	77.2	79.6	55.7	67.6	92	38	55	55	85	48	.433	.449	1.22	.50	4.1	3.4	4.1
August	27.99	28.36	27.62	54.5	75.5	78.7	51.1	64.9	94	38	48	47	78	38	.341	.335	.72	.32	3.2	2.5	3.3
September	28.01	28.37	27.51	42.6	59.9	65.2	40.3	52.8	90	26	38	39	84	49	.239	.245	.89	.30	5.4	4.3	5.1
October	28.04	28.42	27.69	31.5	45.5	55.2	27.2	41.2	82	10	26	27	81	49	.141	.145	.34	.30	4.2	3.5	3.8
November	28.09	28.64	27.53	4.6	7.4	14.1	−0.8	6.6	38	−24	2	5	88	89	.055	.061	2.10	.50	5.7	5.3	6.1
December	27.97	28.64	27.55	16.9	22.3	29.7	9.4	19.6	48	−26	15	19	90	87	.097	.108	.14	.05	4.2	3.6	4.7
Year	27.98	28.64	27.25	31.4	43.1	48.7	26.5	37.6	94	−26	27	29	83	63	.196	.206	22.04	2.08	5.0	4.3	5.0

a For 23½ days. b Means for 23 days only; 6 a. m. observations missed. c Means for 24 days only; 5 p. m. observations missed.

WILMINGTON, N. C.

[λ = 34° 14′ N.; φ = 77° 57′ W.; gravity corr., −0.03.]

January	30.12	30.46	29.65	38.2	45.0	52.3	36.1	44.2	66	17	32	37	80	74	.197	.233	2.45	1.50	5.3	3.7	4.8
February	29.92	30.51	29.01	43.7	48.8	57.9	39.5	48.7	72	12	37	40	76	73	.243	.278	4.74	1.61	4.5	3.1	4.5
March	30.01	30.55	29.28	46.5	52.9	61.9	42.6	52.2	78	28	40	42	78	68	.273	.293	1.98	1.20	4.6	3.2	3.9
April	30.12	30.45	29.78	59.5	62.2	73.1	54.3	63.7	89	38	51	52	75	71	.410	.413	.64	.25	3.3	3.6	3.1
May	30.00	30.25	29.77	71.2	73.3	83.1	65.8	74.4	96	44	64	65	80	76	.620	.628	3.13	1.83	5.0	4.7	4.5
June	29.95	30.13	29.50	74.2	75.8	82.7	69.4	76.0	91	61	69	69	84	81	.711	.717	5.37	.97	5.7	7.2	6.2
July	30.06	30.29	29.83	77.9	78.6	86.8	72.9	79.8	98	66	73	73	85	83	.815	.806	5.72	1.56	6.0	5.4	5.8
August	30.00	30.19	29.86	75.9	77.9	87.0	71.1	79.0	95	59	70	71	83	80	.749	.763	2.48	1.19	5.0	3.4	4.3
September	29.98	30.32	29.65	70.2	73.8	83.0	65.4	74.2	94	45	64	66	83	77	.638	.652	3.10	2.04	3.8	3.1	3.0
October	29.98	30.27	29.61	57.2	62.0	69.7	53.7	61.7	80	42	52	55	84	77	.403	.437	4.08	2.68	4.2	3.7	4.3
November	30.17	30.49	29.71	54.9	59.2	69.6	50.7	60.2	80	33	51	52	88	79	.402	.417	3.52	1.72	4.9	2.6	4.0
December	30.14	30.69	29.47	39.2	46.6	55.0	36.5	45.8	70	21	34	37	81	72	.209	.238	3.21	2.06	4.6	3.5	4.3
Year	30.04	30.69	29.01	59.0	63.0	71.8	54.8	63.3	98	12	53	55	81	76	.472	.490	40.42	2.68	4.7	3.9	4.4

WINNEMUCCA, NEV.

[λ = 40° 58′ N.; φ = 117° 43′ W.; gravity corr., −0.01.]

January	25.66	25.99	25.28	31.4	40.1	43.5	27.6	35.6	53	11	23	25	70	55	.123	.126	1.16	0.33	6.1	7.9	6.9
February	25.79	26.04	25.28	26.8	47.1	49.7	23.5	36.6	63	11	16	13	62	27	.088	.080	.26	.18	2.9	5.6	4.4
March	25.64	25.98	25.16	31.6	47.1	49.5	28.7	39.1	68	10	23	19	70	36	.129	.116	1.43	.48	5.7	6.2	5.5
April	25.55	25.99	25.20	32.8	48.5	51.0	30.3	40.6	64	19	22	16	64	30	.119	.097	1.95	.67	6.0	7.3	6.5
May	25.61	25.87	25.39	39.0	57.4	60.4	36.9	48.6	85	26	29	20	69	27	.167	.119	2.77	.64	5.7	6.4	5.3
June	25.65	25.87	25.43	54.2	80.2	81.6	52.4	67.0	90	41	31	22	44	12	.178	.121	.18	.08	2.3	3.8	2.4
July	25.68	25.83	25.49	60.9	85.4	87.8	58.9	73.4	98	44	36	28	43	15	.221	.165	.29	.13	2.4	4.0	3.1
August	25.69	25.81	25.54	55.3	83.2	85.5	52.4	69.0	94	44	27	23	37	13	.159	.136	.70	.49	2.2	3.5	2.5
September	25.64	25.88	25.26	49.3	71.6	73.9	44.6	59.2	90	30	27	21	44	17	.159	.124	.67	.53	2.8	3.4	3.3
October	25.68	25.89	25.27	40.0	63.8	67.6	34.6	51.1	83	26	21	21	33	23	.114	.112	.27	.21	2.5	3.5	3.2
November	25.67	26.04	25.25	31.5	41.5	46.9	26.3	36.6	68	−4	21	19	65	43	.116	.109	1.17	.42	5.7	7.1	7.2
December	25.76	26.14	25.39	29.1	43.0	48.4	25.6	37.0	56	16	23	23	77	45	.122	.123	.23	.11	4.1	7.1	5.9
Year	25.67	26.14	25.16	40.2	59.1	62.2	36.8	49.5	98	−4	25	21	56	29	.141	.120	11.08	.67	4.0	5.5	4.7

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

WICHITA, KANS.

[H = 1,351 ft.; h_t = 78 ft.; h_r = 71 ft.; h_a = 85 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Number of winds, 8 a. m. and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	8.3	N.	36	SW.	0	14	3	3	12	13	7	2	8	0	12	5	14	8	4	3	0	2	4	0	21	0	0
February	9.6	N.	41	N.	1	19	7	1	6	11	4	1	9	0	17	8	4	4	3	1	0	1	1	0	19	0	0
March	11.8	N.	41	S.	1	15	11	6	5	14	1	0	10	0	11	11	9	11	8	4	0	1	2	0	19	0	0
April	13.9	S.	44	S.	1	4	4	1	12	26	7	0	6	0	9	14	7	5	4	0	0	2	0	0	2	7	0
May	11.4	S.	39	N.	0	5	6	8	12	25	3	2	1	0	9	14	8	9	6	0	1	0	0	2	0	11	0
June	6.8	SE.	42	N.	1	7	14	4	18	13	0	0	3	1	12	12	6	10	10	0	1	1	0	9	0	11	0
July	6.1	S.	27	S.	0	3	7	9	9	28	5	0	0	1	15	7	9	11	7	0	0	1	0	13	0	12	0
August	8.1	S.	28	N.	0	7	3	12	13	24	2	0	1	0	21	4	6	5	3	0	0	0	0	20	0	6	0
September	8.2	N.	28	S.	0	16	13	5	7	12	3	0	2	2	12	8	10	11	7	0	0	0	0	8	0	10	0
October	7.6	S.	27	N.	0	13	7	4	9	15	3	4	7	0	18	9	4	6	5	0	0	3	0	0	0	4	0
November	10.6	S.	28	NW.	0	19	4	1	7	23	1	0	5	0	13	8	9	4	4	0	0	1	5	0	15	0	0
December	7.6	S.	31	N.	0	14	4	3	5	24	2	2	7	1	16	6	9	3	2	0	0	0	1	0	19	0	0
Year	9.2	S.	44	S.	4	136	83	57	115	228	38	11	59	5	165	106	95	87	63	8	2	12	13	52	95	61	0

WILLISTON, N. DAK.

[H = 1,875 ft.; h_t = 15 ft.; h_r = 22 ft.; h_a = 31 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	9.0	N.	48	W.	3	13	7	4	9	11	3	6	8	1	5	17	9	13	8	13	0	1	25	0	30	0	0
February	10.1	SW.	52	N.	5	8	4	5	6	6	12	10	7	0	4	17	8	6	4	5	0	0	16	0	27	0	0
March	9.5	N.	56	NW.	1	15	5	6	7	7	5	5	11	1	8	11	12	13	12	12	0	0	19	0	29	0	2
April	11.5	NW.	52	W.	2	10	7	6	6	5	1	7	18	0	8	12	10	6	5	6	0	0	3	0	17	1	2
May	12.0	NW.	60	NW.	6	8	8	10	7	3	2	10	14	0	6	13	12	14	12	0	1	0	0	0	0	9	3
June	9.0	N.	48	NW.	3	13	2	6	13	7	5	4	9	1	19	5	6	11	10	0	0	0	0	1	0	6	0
July	6.9	SE.	38	W.	0	17	3	6	18	8	3	3	4	0	12	15	4	6	5	0	0	0	0	2	6	7	5
August	8.5	NW.	40	NW.	1	12	1	7	10	3	3	10	16	0	17	10	4	6	5	0	0	0	0	2	0	4	4
September	7.8	NW.	36	NW.	0	15	3	7	4	4	6	5	16	0	9	13	8	8	8	0	0	0	0	0	5	1	1
October	7.2	N.	30	N.	0	22	6	2	9	8	3	3	9	0	14	14	3	2	2	1	0	0	0	0	20	0	3
November	9.8	N.	42	N.	1	16	5	5	13	0	3	10	8	0	6	12	12	14	10	13	0	0	27	0	30	0	0
December	6.3	SW.	34	W.	0	8	3	7	8	3	18	3	12	0	8	17	6	5	2	4	0	0	17	0	31	0	1
Year	9.0	N.	60	NW.	22	157	54	71	110	65	64	76	132	3	116	156	94	104	83	54	1	1	107	5	189	28	21

WILMINGTON, N. C.

[H = 78 ft.; h_t = 82 ft.; h_r = 76 ft.; h_a = 90 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	7.7	NE.	34	NE.	0	5	19	6	3	3	7	7	11	1	12	12	7	5	3	0	0	1	1	0	8	1	0
February	11.2	SW.	48	SW.	1	4	1	3	2	6	16	16	9	1	13	11	5	10	10	2	0	3	1	0	7	1	0
March	11.4	SW.	48	SW.	2	2	7	8	1	4	19	4	16	1	15	13	3	8	4	0	0	0	0	0	3	1	0
April	9.9	SW.	32	NW.	0	2	8	8	2	6	22	3	9	0	17	12	1	6	4	0	0	0	0	0	0	2	0
May	8.3	SW.	26	SW.	0	1	5	7	7	7	29	4	2	0	10	18	3	9	6	0	0	0	0	5	0	8	0
June	7.3	SW.	42	W.	1	0	9	6	4	7	18	11	5	0	2	19	9	18	12	0	0	0	0	1	0	12	0
July	8.2	SW.	32	S.	0	0	5	6	1	7	33	9	1	0	4	18	9	18	14	0	0	0	0	8	0	11	0
August	6.8	SW.	27	E.	0	6	8	5	6	6	24	4	3	0	14	12	5	7	5	0	0	1	0	10	0	5	0
September	7.6	NE.	42	SW.	1	8	13	8	7	9	9	2	1	3	21	6	3	7	6	0	0	2	0	3	0	3	0
October	8.5	NE.	30	NE.	0	8	14	9	6	2	7	3	12	1	15	10	6	10	6	0	0	0	0	0	0	0	0
November	7.5	N.	32	SW.	0	15	14	1	6	10	6	4	4	0	15	9	6	5	5	0	0	6	0	0	0	1	0
December	7.9	N.	37	W.	0	23	8	3	0	6	5	10	7	0	12	13	6	10	8	0	0	1	0	0	10	0	0
Year	8.5	SW.	48	SW.	5	74	111	70	45	73	195	77	80	7	150	153	63	113	83	2	0	14	2	27	28	45	0

WINNEMUCCA, NEV.

[H = 4,340 ft.; h_t = 59 ft.; h_r = 52 ft.; h_a = 70 ft.]

Month.	Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
January	12.2	E.	54	SW.	6	5	10	16	1	9	14	6	0	1	4	11	16	11	9	3	0	0	1	0	20	0	0
February	10.4	SW.	58	W.	3	8	8	9	1	7	18	3	4	0	9	15	5	3	2	1	0	0	1	0	26	0	0
March	11.5	SW.	50	SW.	3	7	11	3	1	5	15	15	4	1	5	17	9	15	11	6	1	1	1	0	19	1	0
April	11.5	SW.	48	SW.	7	3	6	8	0	10	20	8	5	0	3	14	13	19	9	10	0	0	0	0	16	0	0
May	10.5	SW.	55	S.	8	11	3	7	1	11	17	8	4	0	9	13	9	17	9	6	1	0	0	0	9	3	0
June	10.0	SW.	39	S.	0	4	10	6	1	6	19	12	0	2	18	10	2	3	2	0	0	0	0	1	0	3	0
July	9.3	SW.	48	S.	2	7	8	9	1	7	16	12	1	1	20	7	4	5	3	0	0	0	0	12	0	6	0
August	8.0	SW.	50	W.	1	3	5	7	3	4	23	14	2	1	20	7	4	5	2	0	2	0	0	7	0	2	0
September	9.1	SW.	48	NE.	1	8	10	12	1	5	13	7	3	1	18	6	6	3	3	0	0	0	0	0	2	0	0
October	8.1	NE.	50	SW.	1	10	16	8	0	5	8	9	6	0	20	5	6	3	2	1	0	0	0	0	10	0	0
November	10.4	SW.	50	SW.	3	9	7	10	0	6	19	7	2	0	6	5	19	10	6	2	0	0	4	0	19	0	0
December	8.7	SW.	49	SW.	2	6	8	20	0	5	20	1	0	2	8	13	10	3	3	1	0	0	0	0	26	0	0
Year	10.0	SW.	58	W.	37	81	102	115	10	80	202	102	31	9	140	123	103	97	61	30	4	1	7	20	147	15	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

WOODS HOLE, MASS.

[λ = 41° 33′ N.; φ = 70° 40′ W.; gravity corr., — 0.01.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew-point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean.	Maximum.	Minimum.	8 a. m.	8 p. m.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Total.	Maximum in 24 hours.	8 a. m.	8 p. m.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	.....	30.44	29.67	.....	29.0	31.8	23.3	27.6	48	—4	....	21	....	70	.....	.119	1.75	1.05	.....	4.8	5.2
February	.....	30.40	28.87	.....	32.1	35.7	24.2	30.0	50	—6	....	24	....	71	.....	.143	4.26	1.49	.....	3.6	4.6
March	.....	30.51	29.11	.....	32.3	36.5	26.8	31.6	54	16	....	29	....	88	.....	.166	4.83	.95	.....	3.9	5.2
April	.....	30.55	29.50	.....	42.6	49.1	36.8	43.0	69	22	....	37	....	82	.....	.230	1.33	.63	.....	4.4	3.4
May	.....	30.35	29.62	.....	54.3	61.0	49.0	55.0	76	39	....	49	....	83	.....	.359	3.58	1.20	.....	3.5	4.1
June	.....	30.29	29.48	.....	61.5	66.7	57.2	62.0	76	49	....	56	....	82	.....	.451	3.62	.89	.....	4.2	4.2
July	.....	30.34	29.66	.....	68.5	73.0	64.3	68.6	80	58	....	64	....	85	.....	.596	2.81	.58	.....	4.3	4.4
August	.....	30.26	29.81	.....	68.2	74.5	63.9	69.2	87	58	....	63	....	83	.....	.583	2.99	1.06	.....	3.3	2.6
September	.....	30.36	29.30	.....	62.9	66.5	57.5	62.0	74	46	....	56	....	81	.....	.474	5.66	1.79	.....	5.2	4.9
October	.....	30.50	29.52	.....	52.2	55.2	46.9	51.0	67	34	....	44	....	76	.....	.305	4.53	2.16	.....	5.6	5.4
November	.....	30.66	29.64	.....	48.3	51.7	42.5	47.1	62	26	....	42	....	79	.....	.282	2.49	1.00	.....	4.5	5.6
December	.....	30.86	29.50	.....	34.4	37.1	28.0	32.6	55	10	....	26	....	71	.....	.151	3.18	1.06	.....	3.0	3.3
Year	.....	30.86	28.87	.....	48.9	53.2	43.4	48.3	87	—6	....	43	....	79	.....	.322	41.03	2.16	.....	4.2	4.4

YUMA, ARIZ.

[λ = 32° 45′ N.; φ = 114° 36′ W.; gravity corr., — 0.03.]

January	29.88	30.10	29.54	47.6	65.8	71.8	43.9	57.8	81	31	29	32	52	30	.170	.189	0.14	0.14	1.9	3.4	3.3
February	29.89	30.12	29.52	50.3	71.5	75.0	46.7	60.8	91	34	27	26	42	19	.150	.144	.00	.00	1.9	2.0	2.3
March	29.79	30.05	29.57	54.0	75.9	79.0	51.2	65.1	99	37	36	34	54	24	.223	.206	.43	.43	2.9	4.6	3.8
April	29.76	30.09	29.53	52.4	78.3	81.3	50.2	65.8	91	41	35	30	54	18	.208	.172	T.	T.	1.7	2.2	1.5
May	29.67	29.86	29.46	63.5	88.7	91.9	61.6	76.8	112	49	43	36	50	16	.292	.226	T.	T.	2.1	1.6	1.6
June	29.58	29.82	29.41	73.2	103.3	106.0	71.7	88.8	117	63	55	41	55	13	.448	.278	.00	.00	0.2	0.4	0.2
July	29.64	29.82	29.48	79.9	101.3	104.7	77.9	91.3	110	68	66	58	64	26	.652	.514	.41	.33	2.6	2.0	2.0
August	29.69	29.99	29.54	78.6	99.4	103.5	76.5	90.0	113	71	68	62	70	32	.687	.564	.32	.12	2.5	2.0	2.1
September	29.62	29.80	29.30	71.1	94.7	99.0	68.9	84.0	108	55	60	54	68	28	.536	.446	.31	.31	0.9	1.3	1.2
October	29.69	29.94	29.46	64.3	84.1	89.0	62.0	75.5	102	48	54	51	71	34	.436	.388	.10	.07	1.7	2.2	1.9
November	29.82	30.22	29.50	52.7	69.8	75.8	50.5	63.2	86	42	35	36	54	31	.214	.231	.06	.06	1.9	2.6	2.0
December	29.94	30.14	29.60	49.2	65.1	70.9	46.4	58.6	78	41	33	36	56	36	.190	.221	.78	.73	2.5	1.3	1.9
Year	29.75	30.22	29.36	61.4	83.2	87.3	59.0	73.1	117	31	45	41	58	26	.350	.298	2.55	.73	1.9	2.1	2.0

ANNUAL METEOROLOGICAL SUMMARY FOR THE YEAR ENDING DECEMBER 31, 1896—Continued.

WOODS HOLE, MASS.

[H = 22 ft.; h_t = 51 ft.; h_r = 39 ft.; h_a = 57 ft.]

Month.	Wind. By self-registers. Average hourly velocity.	Prevailing direction. (a)	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	Wind. Number of winds, 8 a. m and 8 p. m. North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Number of days. Clear.	Partly cloudy.	Cloudy.	Precipitation. 0.01 inch and over.	0.04 inch and over.	Snow.	Hail.	Fog.	Maximum temp. Below 32°.	Above 90°.	Minimum temperature below 32°.	Electricity. Thunderstorms.	Auroras.
	Miles.		*Mi.*																								
January	16.8	NW.	55	NW.	5	6	2	3	1	3	0	4	11	1	13	7	11	8	5	5	0	0	12	0	28	0	2
February	21.3	W.	56	SW.	12	3	2	1	4	2	5	8	4	0	15	2	12	12	9	6	0	0	9	0	22	0	0
March	21.3	W.	58	NW.	11	1	2	2	1	6	4	8	7	0	13	6	12	15	14	7	0	1	11	0	25	0	2
April	13.5	SW.	44	NW.	4	3	1	4	4	6	8	1	2	1	15	10	5	7	5	3	0	0	0	0	6	2	0
May	12.7	SW.	44	SW.	2	2	2	1	5	5	10	2	2	2	14	11	6	9	9	0	0	1	0	0	0	4	2
June	12.9	S.	40	NE.	1	0	1	2	5	8	8	3	1	2	14	9	7	6	6	0	0	0	0	0	0	0	0
July	13.3	S.	38	SW.	0	0	1	2	4	13	8	0	2	1	16	6	9	12	11	0	0	1	0	0	0	1	0
August	9.8	SE.	42	SE.	4	1	4	3	10	1	8	1	2	1	21	5	5	9	6	0	1	0	0	0	0	4	0
September	15.1	S.	48	NW.	5	5	2	2	3	8	4	2	4	0	14	6	10	13	10	0	0	0	0	0	0	3	0
October	15.9	NE.	45	W.	3	2	7	2	2	1	6	5	6	0	13	4	14	10	8	0	0	0	0	0	0	0	0
November	17.8	SW.	52	SW.	6	1	0	2	5	3	8	5	6	0	10	10	10	12	9	1	0	2	0	0	4	0	0
December	18.6	SW.	54	NE.	7	4	2	0	3	1	9	4	8	0	19	6	6	6	6	4	0	0	8	0	19	0	1
Year	15.8	SW.	58	NW.	60	28	26	24	47	57	78	43	55	8	177	82	107	119	98	26	1	5	40	0	104	14	7

YUMA, ARIZ.

[H = 141 ft.; h_t = 16 ft.; h_r = 2 ft.; h_a = 50 ft.]

January	5.9	N.	28	NE.	0	20	15	7	0	6	2	3	7	2	17	10	4	1	1	0	0	0	0	0	1	1	0
February	7.9	N.	34	NW.	0	18	12	6	1	2	1	8	10	0	20	8	1	0	0	0	0	0	0	1	0	0	0
March	7.7	NW.	39	N.	0	7	8	7	2	2	7	13	16	0	13	13	5	2	1	0	0	0	0	5	0	0	0
April	9.2	W.	37	W.	0	6	3	8	2	8	7	13	13	0	25	5	0	0	0	0	0	0	0	1	0	0	0
May	8.4	W.	38	NW.	0	6	6	4	3	3	12	14	14	0	26	5	0	0	0	0	0	0	0	20	0	0	0
June	6.7	SW.	32	SW.	0	3	6	4	4	5	18	15	5	0	30	0	0	0	0	0	0	0	0	30	0	0	0
July	6.9	SW.	33	NE.	0	2	10	3	8	5	18	11	5	0	25	3	3	2	2	0	0	0	0	31	0	4	0
August	6.4	SW.	40	SW.	1	6	4	6	9	8	15	8	4	2	23	6	2	7	3	0	0	0	0	31	0	8	0
September	5.1	SW.	33	S.	0	5	11	1	4	10	9	8	4	8	26	4	0	2	2	0	0	0	0	25	0	3	0
October	4.4	NE.	24	SW.	0	9	11	6	6	4	6	11	5	4	22	8	1	3	1	0	0	0	0	15	0	3	0
November	6.5	N.	38	N.	0	19	14	8	3	7	9	3	4	2	23	6	1	1	1	0	0	0	0	0	0	0	0
December	6.2	N.	34	NW.	0	20	18	10	2	3	2	3	3	1	24	6	1	2	2	0	0	0	0	0	0	0	0
Year	6.8	N.	40	SW.	1	121	118	70	44	63	97	110	90	19	274	74	18	20	13	0	0	0	0	159	1	19	0

a By eye observations at 8 a. m. and 8 p. m. when there is no self-register at station.

Blank page retained for pagination

PART IV.

MONTHLY AND ANNUAL MEAN TEMPERATURE AND ANNUAL EXTREMES OF TEMPERATURE, TOGETHER WITH THE DATES OF THE FIRST AND LAST KILLING FROST, 1896.

The monthly and annual averages given in the following tables are taken largely from the records of voluntary (unpaid) observers. The paid stations of the Weather Bureau are indicated by an asterisk (*). The records of voluntary observers are given as made; no attempt has been made to reduce them to a homogeneous system. About two-thirds of the voluntary observers have standard instruments, but very few have what may be called standard shelters. The hours of observation at the regular stations of the Weather Bureau have already been described; the observing hours at voluntary stations vary greatly. The letters "*a*," "*b*," etc., following the name of a station have the following significance:

a = mean temperature computed by the formula $\frac{1}{4}(7+2+9+9)$.
b = mean temperature computed by the formula $\frac{1}{2}(8+8)$.
c = mean temperature computed by the formula $\frac{1}{2}(7+7)$.
d = mean temperature computed by the formula $\frac{1}{2}(6+6)$.
e = mean temperature computed by the formula $\frac{1}{2}(7+2)$.
f = from various hours reduced to true mean by special table.
g = mean temperature computed by the formula $\frac{1}{3}(7+2+9)$. (Southern Pacific Railway.)
h = mean temperature computed by the formula $\frac{1}{4}$ (midnight, sunrise, noon, and sunset).

The absence of a letter indicates that the mean has been made as follows: $\frac{\text{Mean max.} + \text{mean min.}}{2}$

The small roman letters in the body of the tables indicate the number of days missing from the records, thus "*c*" indicates three days missing, etc.

The dates of last killing frost in spring and first in autumn are given at the right of the table. Many observers, however, do not report dates of frost, and still others do not distinguish between light and killing frost. The date of the first and the last occurrence of a minimum temperature of 32° has been used in all cases where no frost reports were made. Data for stations so entered have been distinguished from regular frost reports by a dagger (†).

Bracketed values have been supplied by interpolation.

Blank page retained for pagination

MONTHLY AND ANNUAL MEAN TEMPERATURE, ANNUAL EXTREMES OF TEMPERATURE, AND DATES OF LAST KILLING FROST IN SPRING AND FIRST KILLING FROST IN AUTUMN, 1896.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Alabama.																	
Alco	48.6	53.0	58.0	69.2	76.0	78.2	80.5	81.4	75.9	66.2	60.3	49.1	66.4	98	18	Mar. 21	Nov. 9
Ashville (a)	42.7	45.1	51.4	64.0	76.2	77.8	83.0	83.5	75.1	61.3	55.4	43.6	63.6	105	13	Mar. 21	Nov. 9
Bermuda	47.4	52.8	57.3	69.8	75.2	77.2	80.0	81.2	75.3	65.8	62.4	49.4	66.2	99	16	Mar. 21	Nov. 8
*Birmingham	44.8	49.7	53.0	70.0	76.5	76.5	82.4	83.0	77.2	63.5	58.4	48.0	65.2	101	14	Mar. 21	Nov. 6
Brewton	47.6	51.3	54.8	[69.5]	76.6	78.7	80.2	81.4	74.4	64.5	57.8	45.6	[65.2]	102	16	Mar. 21	Nov. 7
Carrollton (b)	44.0	49.0	53.7	69.0	75.6	76.2	80.8	81.4	75.3	63.4	.....	.....	.....	96	19	Mar. 21	.....
Citronelle	49.8	54.5	59.2	70.4	77.1	78.6	81.6	82.4	77.0	68.5	62.0	51.4	67.7	98	24	Feb. 18	Nov. 30
Clanton	44.0	48.5	53.5	68.0	75.0	76.2	80.3	81.8	76.0	63.2	56.7	47.0	64.2	97	17	Mar. 21	Nov. 9
Daphne	50.8	56.0	59.9	71.2	78.8	81.5	81.6	82.2	76.1	66.8	60.4	49.7	67.9	99	19	Feb. 21	Nov. 8
*Decatur	39.8	43.6	48.2	66.0	74.2	75.6	80.2	80.5	72.1	58.4	52.0	42.0	61.0	102	8	Apr. 13	Nov. 6
*Eufaula	46.2	51.8	56.2	72.7	78.1	81.2	82.7	85.4	80.1	66.6	61.4	48.2	67.6	100	21	Mar. 21	Nov. 14
*Evergreen	46.4	50.4	55.4	68.8	76.4	77.8	80.7	82.0	76.0	64.7	59.9	45.7	65.4	100	17	Mar. 21	Nov. 9
*Florence	41.6	44.8	49.3	66.8	75.0	75.4	80.1	80.6	72.9	60.0	54.1	44.2	62.1	100	13	Mar. 24	Nov. 9
*Fort Deposit	44.7	49.4	54.0	71.0	78.0	78.9	82.2	84.4	78.0	64.9	58.5	46.8	65.9	102	18	Mar. 23	Nov. 9
*Gadsden	41.2	45.2	49.9	64.4	74.4	75.2	.....	.....	.....	.....	55.8	44.6	.....	.....	13	Mar. 21	Nov. 9
*Goodwater	44.0	45.2	51.4	68.4	75.2	76.9	81.4	83.6	78.2	64.8	59.3	45.3	64.5	104	15	Mar. 22	Nov. 9
Greensboro	43.5	48.0	52.6	68.6	76.6	76.4	81.8	82.5	76.8	64.9	57.2	48.3	64.8	100	17	Mar. 20	Nov. 8
Healing Springs	45.8	49.1	54.0	66.9	73.8	76.0	78.9	81.0	73.2	62.8	58.0	47.8	63.9	101	11	Apr. 3	Oct. 19
Highland Home	47.2	51.7	56.7	*69.2	75.7	77.3	80.1	82.5	78.4	66.8	61.6	50.0	66.4	98	17	Mar. 20	Nov. 30
Jasper	.....	42.2	48.3	67.5	76.2	.....	.....	*82.0	.....	.....	.....	.....	.....	.....	.....	Apr. 3	.....
*Livingston	44.6	51.5	55.0	69.0	78.0	78.0	83.4	84.1	76.4	63.9	57.7	50.2	66.0	101	15	Mar. 21	Nov. 9
Madison Station	41.0	44.5	48.8	66.6	75.4	74.6	78.8	80.2	72.7	58.4	53.3	43.2	61.3	100	10	Apr. 3	Oct. 18
*Marion	43.2	48.0	52.8	69.4	76.7	77.2	81.9	83.1	77.6	64.4	58.3	47.8	65.1	100	17	Mar. 21	Nov. 9
*Mobile	49.4	53.3	57.4	68.8	76.6	78.9	81.4	82.4	77.2	67.8	62.0	51.2	67.2	99	22	Mar. 20	Nov. 9
*Montgomery	46.0	50.5	55.4	70.2	77.0	78.2	81.6	83.3	78.0	66.0	59.4	48.7	66.2	101	19	Mar. 21	Nov. 9
Mount Willing	47.1	52.0	56.2	71.2	78.0	78.6	81.0	82.2	77.9	67.1	59.8	49.3	66.7	101	15	Mar. 21	Nov. 9
Newbern	44.0	49.2	53.5	69.4	76.6	77.4	82.2	83.8	77.9	65.2	58.3	47.8	65.4	100	16	Mar. 21	Nov. 9
Newburg	41.8	45.4	50.4	.....	74.4	74.9	80.4	80.6	*75.9	.....	*54.4	44.5	.....	104	10	Mar. 24	Oct. 17
Newton	45.9	51.2	55.8	69.0	76.2	78.4	80.1	82.3	76.9	65.6	60.2	48.0	65.8	99	19	Mar. 21	Nov. 9
Oneonto	*40.8	.....	48.6	66.6	74.4	75.8	78.9	*80.7	73.8	*57.6	.....	.....	.....	103	11	Mar. 21	Oct. 15
*Opelika	[46.4]	50.4	56.0	69.6	74.8	76.7	79.6	81.2	77.0	64.8	60.0	48.6	[65.4]	98	.....	Mar. 21	Nov. 9
Oxanna	43.4	46.4	50.6	66.8	73.2	75.0	79.8	81.0	75.4	61.8	55.2	43.2	62.6	98	12	Mar. 21	Nov. 9
*Pineapple	.....	45.6	53.0	70.1	76.4	78.4	81.9	83.6	75.3	68.2	59.0	.....	.....	104	.....	Apr. 3	Nov. 9
Pushmataha	46.4	50.4	56.1	69.3	77.6	77.7	83.2	84.0	76.4	65.1	58.4	47.8	66.0	103	16	Mar. 21	Nov. 9
Rockmills	.....	*46.8	53.2	66.9	74.2	77.0	80.2	80.0	75.7	66.3	60.0	48.9	.....	99	.....	Mar. 21	Nov. 9
Scottsboro	38.6	41.0	[46.5]	65.4	75.2	75.9	80.8	81.8	72.6	60.7	*53.8	42.6	[61.2]	100	8	.....	Nov. 8
Talladega (c)	44.4	46.5	51.4	68.0	75.4	*77.4	81.1	[80.9]	75.5	62.2	55.2	44.6	[63.6]	98	15	Apr. 2	Nov. 9
*Thomasville	.....	.....	.....	.....	78.1	78.2	82.8	84.7	79.2	.....	.....	.....	.....	106	.....	.....	.....
*Tuscaloosa	42.9	46.8	52.5	69.8	78.0	78.2	83.8	84.0	76.8	63.6	55.7	46.0	64.8	105	15	Mar. 21	Nov. 9
*Tuscumbia	40.9	45.2	48.4	64.3	75.9	76.7	81.8	82.0	73.5	.....	.....	.....	.....	102	13	Mar. 21	.....
Union	44.0	48.7	53.0	68.2	77.4	76.8	81.8	83.7	78.6	65.4	58.9	48.6	65.4	104	15	Apr. 3	Oct. 22
*Union Springs	44.4	48.2	54.6	70.2	77.2	79.6	82.3	83.5	77.6	65.2	59.2	46.4	65.7	102	16	Mar. 20	Nov. 9
Uniontown	45.1	50.6	55.8	70.2	78.2	78.6	83.0	84.4	78.8	67.0	60.0	49.7	66.8	102	18	Mar. 21	Nov. 9
Valleyhead	42.4	42.6	48.6	64.2	71.7	73.2	78.4	79.3	73.7	59.9	55.4	43.1	61.1	97	9	Apr. 3	Oct. 15
Alaska.																	
Coal Harbor	20.7	18.5	31.5	33.1	38.2	45.3	51.1	51.0	47.8	42.9	38.7	28.6	37.2	70	—12	.....	.....
Holy Cross Mission	-16.2	-16.2	8.2	18.7	37.0	51.3	53.0	49.1	46.5	30.7	7.6	—8.5	21.8	79	—50	.....	.....
Juneau	.....	.....	.....	.....	.....	.....	.....	.....	50.8	45.4	29.4	33.8	.....	.....	.....	.....	.....
Killisnoo	17.4	20.8	31.0	31.6	44.8	48.5	52.8	54.6	45.4	42.0	26.2	33.6	38.1	70	—9	.....	.....
Kadiak	19.4	17.8	31.1	31.5	39.1	49.0	52.7	52.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nulato	-26.4	-28.3	4.0	*7.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Point Hope	—9.8	-28.6	-12.2	0.6	18.0	32.0	35.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Clarence	—3.5	-20.4	7.5	*19.3	32.9	46.8	56.1	.....	.....	*29.4	*13.1	—4.9	.....	.....	—34	.....	.....
St. Joseph Mission	-12.2	-20.0	7.4	10.6	26.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Lawrence Island	2.8	-12.8	1.4	16.4	22.4	34.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arizona.																	
Arizona Canal Co.'s Dam	.....	.....	.....	64.8	72.5	81.5	85.1	88.8	.....	.....	.....	.....	.....	113	.....	.....	.....
Benson (g)	58.3	58.4	59.1	63.6	79.4	85.2	84.8	83.6	75.9	63.4	63.8	46.8	68.3	107	31	.....	.....
Bisbee	48.1	46.4	55.4	59.1	66.6	80.8	75.7	74.6	71.7	61.8	55.0	49.4	62.3	101	26	Apr. 11	Nov. 28†
Buckeye	57.6	60.5	62.6	63.7	73.5	85.3	87.2	88.4	82.6	73.3	60.0	57.1	71.0	113	26	Mar. 31†	Nov. 28†
Calabasas	46.5	46.7	53.9	58.4	65.6	78.8	78.2	75.4	73.6	65.0	52.3	.....	.....	110	17	Apr. 12†	Nov. 28†
Casa Grande (g)	55.1	55.8	64.2	66.4	78.5	91.2	87.8	90.9	85.4	72.0	60.9	56.9	72.1	110	30	.....	.....
Dragoon Summit (e)	48.0	52.3	62.3	65.6	75.6	88.0	79.8	78.4	77.6	63.3	53.6	51.4	66.3	102	25	.....	.....
Dudleyville	48.6	50.2	58.0	61.7	72.1	82.4	83.2	81.5	75.8	64.6	54.5	48.7	65.0	112	16	Apr. 1	Nov. 27
Eagle Pass (c)	38.2	49.2	48.0	53.2	67.6	78.6	73.8	76.2	67.0	52.8	41.6	33.2	56.6	.....	.....	Apr. 12	Nov. 4
Fareys Camp	55.9	57.8	64.8	64.2	73.2	87.6	87.2	86.0	80.7	70.0	59.6	56.8	70.3	112	27	Feb. 24†	Nov. 29†
Flagstaff	31.1	32.3	38.0	41.9	52.8	63.2	66.0	66.2	.....	.....	.....	.....	.....	.....	0	May 26†	.....
Fort Apache	37.6	37.6	45.4	48.8	60.1	72.0	72.9	70.6	67.2	54.2	45.2	38.5	54.2	101	6	May 9†	Oct. 25
Fort Grant	48.6	46.5	54.0	59.7	68.6	80.2	77.8	76.6	72.4	60.4	54.2	49.2	62.4	106	21	.....	Nov. 27†
Fort Huachuca	48.3	46.0	54.2	57.4	67.4	78.6	74.2	72.6	70.0	59.6	53.0	52.0	61.1	103	20	.....	Nov. 27†
Fort Mohave	.....	.....	65.8	67.4	81.3	97.8	.....	.....	.....	.....	.....	*55.8	.....	.....	.....	Mar. 6	.....
Gilabend (g)	56.3	59.2	65.9	69.4	81.4	95.7	94.9	94.1	86.4	76.0	63.0	57.3	75.0	118	28	Apr. 17†	.....
Gisela	44.2	47.6	54.4	*56.0	.....	80.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Glendale	.....	52.4	.....	61.1	72.1	85.6	87.2	86.9	80.8	69.4	56.8	53.2	.....	112	.....	Apr. 17	Nov. 28†
Holbrook	36.7	37.6	46.8	50.7	61.6	72.4	71.6	73.7	66.6	53.4	43.0	34.6	54.1	101	9	May 23	Oct. 30
Ingleside	.....	55.4	61.8	63.4	74.2	88.8	89.9	89.5	84.4	71.7	58.4	53.8	.....	119	.....	Mar. 6†	Nov. 28†

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Arizona—Continued.																	
Maricopa (*g*)	47.5	51.4	63.1	68.8	79.3	97.7	96.9	89.5	80.0	77.1	66.1	58.8	73.5	122	23	.....	.....
Mesa	.....	.....	62.0	65.0	75.2	88.1	83.4	85.0	81.2	69.8	57.6	52.6	.....	116	.....	.....	Dec. 17†
Mount Huachuca	46.6	44.6	54.2	53.7	69.2	80.7	75.5	73.4	70.5	58.0	52.8	46.4	60.5	108	20	Apr. 1	Nov. 28†
Oracle	49.6	48.7	55.3	58.8	69.6	82.4	79.2	77.4	73.3	61.7	54.4	50.0	63.4	105	24	Apr. 11†	.....
Oro Blanco	54.0	51.6	58.8	63.2	74.4	84.0	80.9	[b]79.2	77.0	66.6	58.8	52.4	66.7	103	29	Feb. 8	Nov. 27
Pantano (*g*)	46.5	49.2	56.8	66.7	77.2	88.7	86.0	79.4	78.2	65.1	48.6	46.5	65.7	112	29	.....	.....
Parker	.....	[i]54.0	[f]70.8	68.6	[f]84.6	95.2	95.4	[f]91.5	83.8	75.0	58.3	53.1	.....	126	.....	Apr. 1†	Nov. 28
Peoria	52.4	55.2	61.2	64.1	75.2	89.0	89.3	88.8	82.6	73.7	58.2	53.0	70.2	116	28	Mar. 6	.....
Phœnix [1]	51.4	53.4	60.5	62.6	72.5	84.6	86.6	86.2	81.0	68.9	56.7	51.4	68.0	111	23	Mar. 7†	Nov. 27
*Phœnix	54.0	55.7	62.0	63.7	74.4	88.4	88.0	88.6	82.9	71.0	59.6	54.2	70.2	115	28	Feb. 9†	Nov. 28†
Reymert (*a*)	49.9	49.6	61.2	63.0	73.1	91.6	90.4	90.0	84.9	73.6	63.2	59.2	70.8	121	30	Mar. 6†	None.
St. Helena Ranch	.....	.....	.....	.....	.....	.....	80.0	76.8	73.3	.....	.....	.....	.....	.....	.....	.....	.....
San Carlos	45.4	48.7	56.4	60.6	70.8	84.5	85.2	84.4	78.8	64.9	52.4	45.8	64.8	117	15	.....	Nov. 5†
San Simon (*g*)	48.3	51.1	59.3	68.1	79.5	88.2	83.9	85.7	77.8	65.0	58.5	49.6	67.9	107	19	.....	.....
Signal	51.0	54.2	60.5	62.2	74.0	88.2	89.4	88.4	81.0	69.2	56.1	51.4	68.8	119	22	Mar. 7†	Nov. 27
Texas Hill (*g*)	48.8	62.6	67.2	67.8	76.5	99.5	94.4	87.9	87.4	80.1	57.4	53.6	73.6	124	30	.....	.....
Tucson	54.5	[f]53.2	61.4	63.8	73.6	[c]85.8	85.0	84.0	80.6	68.8	58.1	54.0	68.6	110	23	Apr. 18	Nov. 27
Walnut Ranch (*a*)	[d]47.0	43.7	50.6	55.4	64.6	77.0	72.7	72.0	68.4	55.8	49.3	44.7	58.4	98	14	Apr. 1†	Nov. 8†
Wells	50.7	51.6	59.5	64.4	74.9	88.6	89.4	.....	.....	.....	.....	.....	.....	.....	.....	Mar. 7†	.....
Whipple Barracks	39.9	38.8	43.2	47.2	57.8	71.2	72.0	70.6	65.4	54.6	43.8	40.4	53.7	104	2	.....	Oct. 29†
Wilcox (*g*)	42.3	47.6	54.7	62.4	76.6	89.4	82.5	80.0	74.3	61.7	51.4	43.6	63.9	108	16	.....	.....
*Yuma	57.8	60.8	65.1	65.8	76.8	88.8	91.3	90.0	84.0	75.5	63.2	58.6	73.1	117	13	.....	.....
Arkansas.																	
Amity	44.5	46.4	51.3	69.2	73.8	80.2	85.0	84.6	74.8	62.2	52.0	46.6	64.2	105	11	Mar. 23	Nov. 8
Beebranch	42.6	47.0	47.4	[d]66.2	[e]72.9	77.3	82.7	83.4	72.8	62.0	51.4	44.2	62.5	107	10	Apr. 3	Nov. 8
Blanchard Springs	43.3	47.7	53.9	68.7	75.8	79.6	84.4	83.8	76.0	63.3	57.2	46.9	65.0	105	15	Apr. 3	.....
*Brinkley	42.6	47.2	50.2	69.8	76.1	78.4	84.4	82.2	73.0	59.6	53.6	46.8	63.7	105	14	Mar. 24	.....
Camden	42.0	46.6	52.0	68.6	76.0	79.0	84.6	82.8	74.8	61.2	54.6	44.8	63.9	109	14	Apr. 2	Nov. 8
Conway (*a*)	41.1	44.9	48.6	67.7	73.2	76.9	83.1	82.2	73.7	59.9	52.7	44.7	59.1	102	14	Mar. 25	Oct. 18
Corning	39.2	41.0	44.1	66.8	74.2	76.1	80.0	78.6	68.1	56.2	47.8	41.5	59.5	101	9	Apr. 2	Oct. 17
Dallas	40.8	[e]44.0	[d]49.6	[b]66.2	72.2	77.5	82.8	83.6	.....	59.6	52.9	46.2	.....	106	11	Apr. 3	Nov. 8
Elon	49.7	51.2	55.0	69.0	75.4	80.4	85.4	84.0	76.0	65.6	58.6	49.2	66.6	106	13	Mar. 25	Nov. 8
Fayetteville	39.7	42.4	45.0	65.6	72.4	74.6	82.2	81.4	71.8	57.5	50.0	44.7	60.6	107	7	Apr. 4	Oct. 18
*Forrest	42.2	.....	[d]50.6	69.2	75.6	77.4	83.7	82.7	73.4	61.2	54.4	46.8	.....	105	15	Mar. 24	Oct. 18
*Fort Smith	41.2	45.2	49.0	68.0	74.0	78.4	84.6	84.6	75.0	60.9	51.4	46.2	63.2	107	14	Mar. 20	Nov. 5
*Helena	40.8	44.9	49.8	67.4	78.2	80.4	85.6	84.0	75.4	61.4	52.2	44.6	63.7	109	14	Mar. 24	.....
Hot Springs	43.4	47.6	51.6	68.6	75.8	78.8	85.6	85.0	76.6	61.9	.....	42.7	.....	108	13	Mar. 25	Nov. 6
Jonesboro	.....	.....	43.9	63.4	72.2	76.2	81.4	80.8	71.2	59.9	.....	.....	.....	104	.....	Apr. 3	Oct. 18
Keesees Ferry	39.8	42.3	45.0	66.4	72.3	75.4	81.2	79.4	70.6	57.6	49.8	43.4	60.3	109	5	Apr. 3	.....
Kirby	44.5	46.4	51.3	69.2	73.8	80.2	85.0	[d]84.6	.....	.....	.....	.....	.....	105	.....	.....	.....
Lacrosse	36.8	[b]41.3	43.8	65.2	71.8	74.2	81.1	79.5	69.4	.....	[e]45.8	42.2	.....	107	4	Apr. 3	.....
*Little Rock	41.4	46.0	49.5	68.4	75.6	77.8	84.2	82.8	73.8	61.8	53.2	46.8	63.4	105	15	Mar. 20	Oct. 18
Lonoke (*a*)	43.0	47.3	50.5	70.6	78.8	81.2	86.9	83.9	74.5	62.2	53.6	46.2	64.9	106	17	Mar. 24	Oct. 18
Luna Landing (*f*)	44.3	49.0	52.7	69.8	76.5	77.9	83.0	82.9	75.7	62.9	58.0	49.9	65.2	101	18	Mar. 20	.....
Madding (*b*)	43.3	48.8	49.3	69.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mar. 20	.....
*Malvern	39.8	45.2	48.4	69.0	75.6	79.8	86.2	83.0	73.9	61.3	54.0	45.7	63.5	112	14	Apr. 3	Nov. 8
Marvell	.....	.....	.....	.....	.....	79.3	85.0	84.2	74.8	62.4	55.8	47.1	.....	106	.....	.....	.....
Mossville	.....	.....	44.3	64.0	69.6	72.6	80.4	81.8	69.8	58.0	47.1	44.6	.....	100	.....	Mar. 24	Nov. 8
Mount Nebo	39.0	43.6	46.6	68.8	75.0	72.6	80.6	79.6	70.2	59.8	49.6	45.3	60.9	95	6	Mar. 24	Nov. 8
New Gascony (*a*)	[e]41.8	[e]48.5	52.4	.....	77.2	80.7	.....	83.4	73.9	.....	[e]52.4	45.4	.....	.....	16	Mar. 24	Oct. 18
*Newport [2]	40.0	44.6	46.8	67.0	74.0	75.9	81.4	81.0	70.7	59.0	.....	.....	.....	105	11	Mar. 24	Oct. 18
Newport [3]	40.8	[e]43.6	47.3	67.6	74.9	76.5	82.2	81.2	71.6	59.7	51.7	45.4	61.9	106	11	.....	.....
Osceola	41.0	43.9	47.3	67.9	75.4	76.5	81.5	80.4	70.6	60.2	52.0	45.2	61.8	100	12	Mar. 24	Oct. 18
Ozark	41.8	45.4	49.5	69.6	[d]75.4	79.0	87.1	86.0	76.5	61.6	53.8	46.4	64.4	109	12	Apr. 2	Nov. 8
*Pine Bluff	43.0	48.6	53.6	72.4	78.2	79.4	85.6	84.5	75.7	63.1	56.8	50.1	65.9	108	13	Mar. 19	Nov. 8
Pocahontas	37.5	39.0	42.6	65.4	72.2	75.4	80.0	79.0	68.4	56.6	.....	41.5	.....	102	9	Mar. 24	Nov. 27
Prescott	.....	.....	.....	.....	76.7	81.1	86.2	86.4	79.4	64.8	58.0	.....	.....	111	.....	.....	Nov. 8
Rison	41.4	45.0	49.2	67.4	[e]72.9	.....	.....	82.4	73.7	61.7	56.1	50.2	.....	.....	11	Mar. 24	Nov. 7
*Russellville	42.0	43.1	46.4	68.3	74.2	77.8	83.6	82.3	72.6	.....	.....	.....	.....	106	.....	Mar. 25	.....
Silver Springs	36.8	41.0	44.2	65.2	70.4	72.8	79.4	78.6	68.9	54.4	46.6	41.0	58.3	104	8	Apr. 3	Oct. 18
Stuttgart	41.4	44.8	49.8	69.3	74.9	77.7	84.0	82.6	73.8	60.8	52.5	45.4	63.1	107	15	Mar. 24	Oct. 18
*Texarkana	45.1	.....	51.8	68.8	76.3	79.8	84.6	88.0	79.2	65.2	59.4	50.6	.....	108	.....	Mar. 20	Nov. 8
Warren	44.2	48.4	52.4	69.8	77.0	80.2	85.8	83.1	75.9	63.2	55.0	49.0	65.3	108	15	Mar. 25	Nov. 8
Washington	43.6	48.2	52.4	69.2	76.4	.....	.....	.....	.....	64.0	55.7	48.5	.....	.....	15	Mar. 20	Nov. 8
Wiggs	.....	.....	.....	.....	.....	.....	86.3	85.5	77.6	64.0	55.8	49.4	.....	110	.....	.....	Nov. 5
Winslow	35.9	40.2	44.0	63.4	68.2	.....	.....	.....	.....	55.1	.....	.....	.....	.....	.....	Apr. 2	.....
Witts Springs	37.7	40.1	43.2	[e]65.0	69.7	72.0	79.5	[e]79.9	68.8	56.6	47.4	44.3	58.7	104	5	Apr. 3	Oct. 18
California.																	
Adin	35.2	39.1	41.1	38.9	47.5	61.7	70.5	66.7	58.0	52.2	36.2	39.0	48.8	98	4	.....	.....
Agnew	47.4	49.4	57.2	50.7	54.6	62.8	66.6	.....	.....	59.6	50.0	53.1	.....	94	24	.....	.....
Arlington Heights	55.6	57.5	58.1	55.4	65.1	73.4	76.0	73.8	71.1	67.6	57.6	56.0	63.9	108	32	.....	.....
Athlone (*g*)	49.7	49.1	59.5	55.8	67.0	83.4	88.4	82.2	70.4	66.9	54.4	47.9	64.6	116	27	.....	.....
Barstow	50.0	50.8	52.4	54.2	62.3	75.5	76.5	74.2	70.0	66.9	53.9	49.5	61.4	112	20	.....	.....
Berkeley	50.8	53.4	53.6	51.6	57.7	62.0	64.6	64.1	61.2	59.5	51.2	50.8	56.7	92	34	.....	.....
Bishop	37.2	43.4	46.4	43.8	56.5	70.0	71.4	70.1	62.2	[f]56.2	[f]44.1	42.1	53.6	99	10	.....	.....
Bishop Creek (*g*)	34.5	40.3	46.3	49.8	62.0	79.9	83.4	81.4	70.6	59.4	46.8	41.2	58.0	105	10	.....	.....
Boca (*g*)	32.6	37.1	36.7	36.6	43.7	59.1	63.2	57.7	53.0	47.3	37.6	33.5	44.8	98	—8	.....	.....
Bodie	24.7	20.4	25.2	27.3	38.5	54.1	59.2	55.4	46.0	39.1	30.4	26.4	37.2	85	—17	.....	.....
Caliente	53.8	53.9	57.0	56.0	66.0	81.0	89.4	83.4	74.0	68.4	54.6	53.3	65.8	109	31	.....	.....
Cedarville	35.4	37.4	38.2	38.4	47.2	63.5	71.7	67.8	58.4	51.0	33.4	36.4	48.2	97	—6	.....	.....
Centerville (*a*)	54.9	57.1	58.6	55.6	61.5	66.1	70.6	67.0	65.4	62.5	55.2	56.3	60.9	103	32	.....	.....
Chico (*g*)	49.3	53.1	55.0	53.4	62.2	77.6	84.9	78.6	71.6	65.4	52.7	52.0	63.0	108	26	.....	.....
Chino (*f*)	52.5	57.2	55.5	55.7	67.2	74.2	76.7	75.6	70.3	66.2	55.1	54.3	63.4	107	27	.....	.....
Cisco (*g*)	34.7	32.0	31.8	29.2	35.2	54.9	64.6	60.5	52.5	48.0	34.6	35.0	42.8	85	10	.....	.....
Claremont	52.2	54.2	54.6	53.0	62.5	70.3	72.0	72.3	68.8	64.5	55.6	53.4	61.1	104	28	.....	.....

[1] Agricultural Experiment Station. [2] Cotton region observer. [3] G. B. Irby.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
California—Continued.																	
Cloverdale (a)	53.5	57.0	56.6	54.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Corning (g)	50.6	53.6	53.8	52.4	62.5	78.1	85.9	83.2	71.1	64.7	50.6	47.0	62.8	115	28	.....	.....
Coronado	61.9	61.2	63.2	61.8	64.4	66.6	71.0	71.8	70.2	68.6	65.6	61.6	65.9	93	43	.....	.....
Craftonville	52.4	54.2	56.6	54.6	70.0	77.4	79.8	80.4	75.7	67.5	54.2	52.0	64.6	112	27	.....	.....
Crescent City	49.3	48.6	49.2	45.8	50.9	53.4	58.2	59.6	55.3	51.8	46.7	49.8	51.6	83	26	.....	.....
Davisville	57.2	65.6	61.8	59.4	65.8	73.2	78.8	74.8	72.8	67.8	57.2	55.0	65.8	105	30	.....	.....
Delano (g)	51.6	52.8	58.9	58.0	67.6	82.3	85.9	81.1	72.4	68.1	50.4	47.7	64.7	108	30	.....	.....
Delta (g)	47.3	50.0	49.2	49.4	59.7	74.8	82.1	76.5	68.8	63.0	44.7	44.1	59.1	108	20	.....	.....
Descanso (e)	54.3	56.4	55.6	52.8	42.6	65.0	69.7	68.6	63.4	58.7	50.0	51.2	57.4	102	28	.....	.....
Drytown	49.6	52.7	52.2	49.7	56.6	69.3	80.1	72.4	65.3	60.8	48.7	47.8	58.8	107	28	.....	.....
Dunnigan (g)	52.3	55.2	56.4	60.6	70.4	83.3	85.4	75.0	73.4	69.8	53.3	51.8	65.6	108	25	.....	.....
Durham (a)	46.1	51.2	50.9	48.5	57.2	72.9	80.0	73.6	65.4	60.0	44.5	44.2	57.9	102	24	.....	.....
Edgwood (g)	39.6	43.1	44.9	44.4	53.9	68.6	76.5	69.8	56.0	52.4	38.8	40.8	52.4	102	8	.....	.....
Edmanton (a)	36.5	38.8	37.9	35.0	43.4	59.2	65.9	61.3	55.8	52.1	37.7	37.0	46.7	96	10	.....	.....
Escondido	53.5	55.3	57.8	57.6	62.4	72.6	74.8	74.0	70.0	63.8	54.8	51.7	62.4	109	26	.....	.....
*Eureka	50.0	48.4	50.0	48.3	51.5	54.0	57.2	57.9	55.6	52.6	49.1	51.0	52.3	72	27	Mar. 31	Nov. 27
Fallbrook (a)	51.5	54.6	54.8	53.6	62.6	69.0	71.3	70.8	66.0	62.3	55.4	55.0	60.6	111	32	.....	.....
Folsom City (a)	50.6	52.4	56.2	55.3	64.4	78.1	82.4	76.7	71.5	64.4	51.4	50.0	62.8	110	30	.....	.....
Fort Bragg	51.9	52.4	52.8	50.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Fresno	50.6	53.4	56.3	54.7	63.9	78.6	85.0	79.8	72.6	66.7	53.2	49.3	63.7	111	28	Mar. 1	Nov. 29
Georgetown	46.6	49.6	45.0	44.5	53.6	70.4	75.9	72.4	65.5	61.6	46.4	48.5	56.7	98	22	.....	.....
Goshen (g)	50.0	47.8	55.2	53.6	59.4	74.2	87.0	77.1	69.6	61.1	49.9	44.0	60.7	112	26	.....	.....
Greenville	36.8	40.2	42.2	40.4	48.6	61.7	69.4	64.2	54.3	52.3	39.2	37.4	48.9	102	3	.....	.....
Healdsburg (a)	48.4	52.1	52.2	50.5	55.0	64.0	64.6	64.3	62.0	59.4	54.8	46.5	56.2	98	26	.....	.....
Hollister	51.0	52.8	53.8	51.2	56.7	61.9	64.3	61.4	59.1	57.0	51.4	51.0	56.0	97	24	.....	.....
Hydesville	50.7	46.9	51.2	48.1	51.9	55.0	59.8	61.0	57.2	.....	49.2	48.6	.....	82	25	.....	.....
Indio (g)	55.3	57.0	63.8	66.9	78.4	92.4	92.9	90.1	82.4	71.1	59.5	55.0	72.1	116	29	.....	.....
Iowa Hill (a)	46.7	47.6	47.5	45.1	54.0	70.3	76.3	72.0	65.1	60.7	47.1	47.4	56.6	100	26	.....	.....
Isabella (e)	.....	.....	53.7	52.6	63.1	80.6	82.6	79.8	69.2	62.6	50.6	46.8	.....	.....	.....	.....	.....
Jackson	44.4	47.3	48.0	44.1	51.9	67.8	75.4	70.0	60.2	60.1	44.0	44.4	54.8	97	23	.....	.....
Julian	47.0	48.8	49.2	46.4	56.4	69.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Keeler (g)	44.9	48.4	57.2	59.1	68.4	82.2	85.6	85.4	77.4	71.6	51.4	48.6	65.0	112	28	.....	.....
Keene (g)	49.9	46.7	49.5	49.6	58.5	74.2	81.1	75.5	67.1	58.7	49.4	49.9	59.2	103	22	.....	.....
Kennedy Gold Mine	47.6	51.2	51.1	48.6	55.7	71.0	78.4	73.6	67.0	63.0	49.3	48.7	58.8	106	28	.....	.....
King City (g)	52.1	52.6	56.7	58.1	62.7	65.3	65.3	66.4	63.6	59.5	59.4	57.2	59.9	108	24	.....	.....
Kingburg (g)	49.0	52.3	56.2	59.5	68.3	82.3	87.1	80.7	74.3	66.5	52.0	49.1	64.8	110	25	.....	.....
Kono Tayee	46.6	49.7	49.8	49.4	56.9	.....	78.6	73.6	69.0	63.1	49.4	47.2	.....	98	29	.....	.....
Lagrange (e)	51.3	54.5	57.2	55.8	64.2	79.2	87.0	80.6	74.1	68.3	53.8	52.2	64.6	114	27	.....	.....
Laporte (a)	36.2	36.8	36.6	33.3	43.5	60.1	66.1	59.8	54.0	48.1	36.0	37.5	45.7	94	10	.....	.....
Lemoore (g)	49.7	52.8	56.9	56.9	67.3	82.5	87.1	81.0	72.7	65.5	51.1	40.9	63.7	110	22	.....	.....
Lick Observatory	45.2	46.5	43.4	37.6	46.6	64.6	73.2	67.8	61.7	57.8	44.7	45.4	52.9	91	18	.....	.....
Limekiln	51.6	55.0	59.0	57.2	66.1	80.2	87.0	81.6	73.8	69.8	55.0	50.8	65.6	113	27	.....	.....
Lodi	49.7	52.8	55.3	53.6	60.4	71.2	76.5	71.6	67.2	63.6	51.8	49.8	60.3	105	27	.....	.....
*Los Angeles	57.6	59.6	58.4	56.2	63.0	69.0	70.9	71.2	67.6	65.4	59.8	59.0	63.1	103	35	Apr. 20.	Nov. 27
Los Gatos	50.2	53.0	53.5	50.6	56.8	63.9	69.3	64.8	62.7	61.4	50.8	50.0	57.2	100	31	.....	.....
McMullin (a)	49.2	51.0	55.0	54.4	64.5	81.8	88.8	83.5	76.0	67.5	54.1	49.9	64.6	114	20	.....	.....
Malakoff Mine (a)	44.5	46.9	46.4	42.7	52.2	69.6	75.7	70.1	63.4	58.6	45.6	45.6	55.1	97	21	.....	.....
Mammoth Tank (g)	56.4	61.6	67.1	68.2	82.9	93.8	102.8	97.4	87.4	78.6	63.7	57.3	76.4	122	31	.....	.....
Manzana	44.2	44.2	47.9	45.4	55.8	73.9	80.0	76.0	70.6	61.0	45.9	42.3	57.3	105	20	.....	.....
Merced (g)	53.3	50.8	57.0	59.9	62.6	77.8	87.0	79.0	70.7	67.1	54.5	51.7	64.3	110	29	.....	.....
Middletown (a)	46.2	48.2	.....	48.5	56.0	70.3	76.4	71.4	65.9	59.6	46.3	45.7	.....	105	24	.....	.....
Milton (near) (a)	54.0	57.3	58.2	55.6	62.7	76.8	80.7	76.4	72.0	69.2	56.0	54.2	64.4	106	31	.....	.....
Modesto (g)	52.1	49.9	53.5	54.8	61.2	76.8	85.8	78.4	70.6	67.3	58.2	56.4	63.8	111	31	.....	.....
Mohave (g)	48.5	50.1	53.4	52.3	60.8	83.5	88.3	83.7	74.1	65.6	52.0	47.3	63.3	111	25	.....	.....
Mokelumne Hill (c)	44.8	47.8	49.0	46.4	56.4	74.9	81.4	73.2	65.5	62.1	48.2	46.1	58.0	.....	29	.....	.....
Monterey (g)	52.7	53.9	55.0	53.7	58.6	60.2	61.5	63.0	61.8	56.6	53.5	54.0	57.0	86	30	.....	.....
Mount Glenwood (a)	50.4	56.6	56.0	53.9	62.8	78.0	77.1	78.9	72.8	69.4	52.9	49.7	63.2	107	32	.....	.....
Napa	52.6	54.8	53.8	52.8	59.1	66.1	69.4	68.8	66.2	61.8	50.1	49.8	58.8	101	27	.....	.....
Needles	47.0	56.8	.....	.....	78.5	92.0	94.5	92.0	.....	74.6	62.0	58.6	.....	118	20	.....	.....
Nevada City	44.2	45.8	46.2	43.2	51.2	66.0	71.8	66.9	61.4	56.7	44.8	45.1	53.6	94	20	.....	.....
Newcastle	47.4	51.6	51.6	48.8	56.3	72.0	79.2	74.4	67.4	64.1	49.0	47.8	59.1	104	27	.....	.....
Newhall (g)	51.8	53.3	55.5	55.5	67.1	75.5	88.2	77.1	63.7	60.9	60.1	50.6	63.3	110	25	.....	.....
Nordhoff	52.4	56.0	56.2	53.0	62.1	69.2	64.5	73.0	64.2	61.0	56.6	53.9	60.2	112	25	.....	.....
North San Juan (a)	.....	.....	.....	.....	.....	.....	.....	.....	.....	59.7	46.9	48.9	.....	.....	.....	.....	.....
Oakland	51.0	53.4	54.7	53.6	58.3	61.5	64.0	63.2	58.0	56.2	51.0	49.3	56.4	88	33	.....	.....
Ogilby (g)	55.6	66.5	68.7	72.5	83.6	101.2	99.9	98.3	91.5	79.6	69.4	59.7	78.9	125	32	.....	.....
Oleta (a)	46.3	47.0	48.7	47.1	54.6	68.5	76.9	70.8	63.3	57.9	46.6	45.9	56.1	102	22	.....	.....
Orange	54.6	56.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orangevale	49.8	51.0	54.6	52.4	59.8	74.4	81.0	75.7	69.0	67.4	53.1	48.4	61.4	110	27	.....	.....
Orland (g)	47.5	50.5	51.8	53.8	64.3	80.6	90.3	83.9	73.6	67.4	52.0	47.8	63.6	118	27	.....	.....
Oroville	52.3	57.6	57.6	56.2	63.8	79.6	84.6	80.2	74.7	72.1	57.4	54.0	65.8	110	28	.....	.....
Palermo	46.9	57.7	54.2	53.8	61.5	.....	83.1	76.4	69.3	64.2	49.6	48.8	.....	113	24	.....	.....
Paso Robles	46.6	48.4	52.0	49.4	58.0	68.4	79.0	76.0	67.2	63.4	51.0	46.8	58.8	106	21	.....	.....
Peachland	.....	50.1	51.8	51.1	56.8	63.1	64.4	63.0	.....	58.1	50.1	49.0	.....	92	.....	.....	.....
Picacho	60.2	63.0	67.3	68.4	79.8	93.6	96.1	94.9	88.8	79.4	64.3	59.9	76.3	113	40	.....	.....
Placerville	44.3	44.8	47.6	44.6	54.0	69.8	74.4	68.8	62.4	57.0	44.9	45.2	54.8	103	16	.....	.....
Point Lobos	51.2	53.0	52.4	50.5	54.3	54.6	57.9	57.4	57.4	55.8	51.3	52.0	54.0	86	34	.....	.....
*Point Reyes	51.1	52.2	51.0	49.3	52.0	51.6	55.4	56.0	55.7	53.8	50.6	52.4	52.6	85	34	.....	Nov. 27
Pomona (near)	54.6	56.1	57.8	56.3	65.2	72.8	75.0	73.9	70.2	66.4	57.4	55.2	63.4	110	29	.....	.....
Poway (c)	.....	46.4	51.8	51.6	60.5	66.0	68.4	68.8	63.6	58.5	51.4	48.0	.....	108	.....	.....	.....
Quincy	37.8	40.2	48.6	41.2	50.4	63.6	69.8	63.9	59.3	51.3	39.6	38.4	49.9	98	13	.....	.....
Ravenna (g)	51.6	54.0	55.3	57.0	65.9	81.2	81.4	77.5	69.4	64.7	54.0	52.5	63.7	112	25	.....	.....
*Redbluff	48.8	53.2	53.8	52.2	61.2	77.4	85.3	78.8	72.8	67.2	50.8	49.0	62.5	109	26	Apr. 19	Nov. 26
Redding	48.3	52.5	52.8	51.0	60.2	76.4	83.8	77.9	71.9	66.8	49.2	48.4	61.6	105	27	.....	.....
Reedley (near) (a)	51.1	53.1	47.3	57.3	69.8	85.2	91.2	84.9	75.4	67.7	53.4	50.4	65.6	109	30	.....	.....
Represa	51.2	51.8	54.7	54.0	60.2	73.0	78.7	73.4	67.6	62.9	52.0	50.0	60.8	102	28	.....	.....
Riverista	48.0	51.7	53.9	51.9	59.2	70.9	77.2	72.8	68.4	66.6	51.5	48.8	60.1	107	25	.....	.....
Roseville (near)	.....	.....	.....	.....	58.4	72.8	82.4	75.3	65.4	.....	47.6	45.0	.....	.....	.....	.....	.....

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
California—Continued.																	
Rosewood	46.4	48.6	51.2	50.4	58.4	73.7	81.0	75.2	68.2	61.7	46.8	45.7	58.9	108	15	.....	.....
*Sacramento	50.2	54.1	55.4	53.3	60.0	71.5	76.5	72.0	68.0	65.4	52.6	49.4	60.7	104	28	Apr. 15	Nov. 27
Sacramento[1]	49.8	52.5	57.0	55.8	62.3	72.8	76.8	72.6	67.2	62.4	51.1	49.5	60.8	104	28	.....	.....
Salinas	51.8	51.8	52.7	48.3	58.5	55.3	60.5	63.4	62.0	56.3	51.1	47.7	55.0	95	29	.....	.....
Salton (g)	63.6	65.6	69.4	74.0	84.1	100.6	101.2	98.2	87.3	85.3	70.8	56.4	79.7	124	30	.....	.....
San Bernardino	54.2	56.4	58.0	56.0	64.2	73.4	76.8	75.2	70.4	65.4	56.0	54.5	63.4	107	29	.....	.....
*San Diego	55.5	57.7	58.2	56.5	62.0	64.8	68.6	69.4	66.7	64.2	59.7	59.0	61.9	98	39	.....	.....
*San Francisco	52.2	55.3	54.3	51.6	56.3	57.2	59.4	59.5	59.6	58.8	53.4	52.8	55.9	91	33	Apr. 20	Nov. 27
San Jacinto	52.3	[b]52.0	54.8	53.8	64.6	75.0	77.7	76.4	70.0	64.6	54.0	51.0	62.2	111	24	.....	.....
San Jose	49.6	52.0	55.6	52.2	57.2	62.5	69.3	63.6	61.4	57.4	48.4	48.4	56.5	95	22	.....	.....
San Leandro (a)	55.4	57.4	57.7	54.8	60.5	63.1	66.3	65.3	64.2	62.4	55.4	55.5	59.8	90	37	.....	.....
*San Luis Obispo	54.1	56.2	56.2	51.4	58.2	63.8	67.6	66.5	64.3	62.2	56.8	54.5	59.3	99	30	May 18	Nov. 30
San Mateo (g)	53.6	56.0	58.0	57.1	63.3	70.0	69.6	67.2	64.4	60.8	53.6	53.2	60.0	91	38	.....	.....
San Miguel (a)	49.7	52.6	55.7	55.6	63.0	75.5	78.6	73.7	66.7	62.1	50.6	45.8	60.8	106	19	.....	.....
San Miguel Island	55.2	57.0	56.0	53.8	57.2	59.6	64.0	61.8	61.0	60.0	56.2	55.6	58.1	101	37	.....	.....
Santa Ana (e)	63.2	61.0	59.6	67.1	75.4	78.3	78.8	79.2	73.9	65.1	58.8	60.1	68.4	105	38	.....	.....
Santa Barbara	56.4	61.2	57.6	55.3	61.4	64.3	66.9	67.5	64.7	63.3	58.7	58.1	61.3	98	36	.....	.....
Santa Clara (f)	50.9	54.3	54.7	51.1	56.3	61.3	66.0	64.5	61.6	58.7	51.3	50.7	56.8	90	30	.....	.....
Santa Cruz	53.0	55.2	55.0	53.1	57.2	60.6	63.9	64.8	61.3	58.3	52.6	53.4	57.4	95	29	.....	.....
Santa Maria	56.0	56.9	57.2	54.4	59.1	64.4	67.3	[c]65.6	64.5	61.6	59.0	57.9	60.3	102	32	.....	.....
Santa Monica (g)	58.5	60.3	62.5	66.3	68.7	72.2	72.2	75.0	70.0	66.7	64.2	63.6	66.7	99	40	.....	.....
Santa Paula	55.1	58.8	57.6	55.1	63.6	67.8	67.3	66.5	63.9	59.8	56.0	55.4	60.6	106	30	.....	.....
Santa Rosa (g)	47.6	51.1	54.3	54.2	64.1	71.8	73.6	68.8	61.4	58.4	51.0	50.2	58.9	97	25	.....	.....
Shasta Springs	37.7	41.6	41.0	40.2	49.0	65.0	68.2	64.4	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sneddens Ranch	.....	38.4	39.0	.....	65.2	[c]59.9	.....	.....	50.8	.....	.....	.....	.....	.....	.....	.....	.....
Stanford University	51.0	52.7	54.2	51.2	56.2	63.3	68.6	64.6	62.7	59.8	51.8	50.2	57.2	94	30	.....	.....
Stockton	49.2	52.8	55.4	53.4	59.8	70.3	75.2	71.2	66.7	63.0	50.9	48.2	59.7	100	26	.....	.....
Summerdale (e)	40.5	43.4	41.0	35.9	45.8	64.4	69.2	66.4	58.4	54.1	40.0	40.8	50.0	89	13	.....	.....
Susanville	38.0	41.3	42.7	41.8	51.4	69.3	77.4	72.0	63.9	58.2	48.2	38.8	53.6	99	17	.....	.....
Sutter Creek (e)	42.8	44.5	46.9	44.2	51.4	67.2	68.8	69.0	.....	59.8	43.8	42.3	.....	102	22	.....	.....
Tecarte Dam (d)	41.6	42.8	47.6	44.8	56.0	67.8	68.9	68.2	54.0	55.6	46.6	39.5	52.8	112	20	.....	.....
Tehama (g)	52.2	53.9	53.8	54.5	62.8	84.0	90.5	82.6	75.1	67.6	53.6	50.7	65.1	111	32	.....	.....
Templeton (g)	48.6	47.2	54.5	53.4	61.1	70.7	72.5	70.8	63.8	59.6	51.4	47.8	58.4	107	20	.....	.....
Truckee (g)	27.4	30.8	34.3	34.2	43.7	60.8	68.6	63.6	54.6	47.4	35.8	34.0	44.6	96	0	.....	.....
Tulare	52.0	55.6	58.9	58.1	66.5	81.2	86.8	82.2	73.6	66.8	53.4	50.4	65.5	118	24	.....	.....
Turlock	49.1	51.8	55.5	54.0	66.2	73.6	81.1	75.8	68.2	64.1	51.8	48.0	61.6	114	22	.....	.....
Ukiah	47.5	48.8	51.4	48.4	55.4	63.8	72.0	68.8	64.4	58.7	47.2	47.5	56.2	100	20	.....	.....
Upperlake	46.3	51.1	50.7	47.1	55.5	68.0	77.1	72.2	67.3	61.6	48.3	46.5	57.6	103	20	.....	.....
Upper Mattole (a)	52.8	52.5	52.7	48.8	.....	59.4	66.8	65.6	.....	.....	48.2	51.0	.....	101	30	.....	.....
Vacaville (a)	50.4	54.1	55.2	53.6	61.8	75.1	79.6	74.2	69.4	66.4	52.0	49.6	61.8	109	30	.....	.....
Ventura	55.9	58.2	55.6	52.2	57.0	60.6	64.4	63.3	60.6	58.0	55.8	55.3	58.1	100	31	.....	.....
Volcano Springs (g)	57.3	62.5	68.3	73.8	89.4	106.1	104.9	99.6	92.4	82.1	65.2	60.2	80.2	130	31	.....	.....
Walnut Creek	50.8	53.2	56.4	54.0	62.0	72.4	76.6	74.4	69.4	64.8	52.6	51.6	61.5	106	28	.....	.....
Washington (a)	44.2	47.8	47.6	44.1	53.0	[f]75.9	74.2	63.6	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wheatland	47.5	51.2	53.6	52.6	60.6	74.6	80.6	74.2	68.0	62.6	49.6	47.9	60.2	111	26	.....	.....
Williams (g)	50.1	53.1	55.6	55.0	64.1	79.9	85.3	75.2	71.9	66.3	51.9	50.7	63.3	107	28	.....	.....
Willows (g)	50.7	55.1	57.2	56.1	64.5	81.1	88.5	81.7	72.9	67.8	53.2	50.6	64.9	104	28	.....	.....
Wilmington (c)	60.8	60.9	63.8	61.2	67.9	80.8	71.1	71.1	68.5	66.3	64.0	61.6	66.5	95	36	.....	.....
Wire Bridge (e)	48.2	51.2	54.0	53.0	62.0	77.7	83.7	77.4	70.5	63.8	50.4	49.5	61.8	107	25	.....	.....
Yreka	37.0	41.0	45.7	43.5	51.4	65.0	74.5	69.5	60.6	53.2	38.2	38.0	51.5	104	1	.....	.....
Yuba City (e)	52.1	53.2	57.0	54.1	64.8	81.8	83.4	78.5	76.0	69.7	58.4	51.7	65.1	104	35	.....	.....
Colorado.																	
Alma	22.8	[c]16.4	[c]21.6	31.0	39.6	49.6	[c]52.2	51.6	[c]43.0	34.3	22.6	23.2	34.0	78	—20	June 30	Sept. 5
Antlers	25.8	.....	.....	.....	.....	[c]71.7	73.0	71.4	61.0	50.6	32.4	28.2	.....	.....	.....	.....	.....
Breckenridge	25.6	18.6	22.6	34.0	42.5	53.7	56.6	55.6	46.4	34.8	20.4	21.2	36.0	82	—25	June 29	Aug. 23
Brush	.....	.....	.....	[c]49.1	58.2	68.4	72.6	[c]71.1	[b]58.3	.....	.....	.....	.....	.....	.....	.....	.....
Canyon	35.9	38.4	38.2	53.0	59.8	70.2	74.0	72.8	64.2	51.3	36.5	41.3	53.0	101	—13	May 1	Oct. 10
Castlerock	32.6	31.4	32.7	44.0	53.0	64.1	67.2	65.8	57.4	45.4	32.2	31.7	46.5	94	—13	May 29	Sept. 25
Climax	17.6	11.0	15.7	26.6	35.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado Springs	35.0	32.9	34.4	48.0	56.2	64.4	68.4	67.0	57.7	47.5	34.0	36.8	48.5	91	—10	Apr. 20	Oct. 7
Cope	36.4	39.0	36.4	50.1	.....	71.8	[c]77.4	74.8	62.4	50.3	33.0	38.8	.....	.....	—12	.....	Oct. 6
Cripple Creek	.....	.....	.....	.....	.....	.....	.....	.....	55.6	46.0	36.6	[c]36.0	.....	.....	.....	.....	.....
Crook	.....	36.0	34.2	50.0	61.6	70.4	75.0	73.6	61.2	[c]48.7	.....	.....	.....	101	.....	Apr. 19	Sept. 27
Delta	29.2	33.3	42.4	53.1	64.5	71.9	.....	.....	60.6	.....	.....	23.0	.....	.....	.....	.....	.....
*Denver	37.4	37.8	37.4	49.6	58.8	68.2	71.9	71.8	61.2	50.1	35.9	38.8	51.6	96	— 9	May 15	Oct. 10
Downing	40.2	36.5	40.8	[c]50.9	63.5	72.3	72.0	72.4	62.0	53.7	38.9	41.4	53.7	98	— 6	May 1	Oct. 9
Dumont (e)	36.2	33.0	33.6	43.9	55.1	63.7	65.7	64.4	56.2	.....	33.6	44.4	.....	90	— 4	May 14	.....
Durango	32.4	33.7	40.2	45.6	55.0	.....	[c]69.3	67.6	59.4	48.5	35.4	32.2	.....	90	— 1	May 14	Oct. 30
Estespark	.....	26.9	29.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fort Collins	32.6	33.4	34.0	46.6	57.0	65.0	70.2	69.0	58.8	48.0	30.6	34.0	48.3	96	—11	Apr. 20	Oct. 5
Gleneyrie	34.9	32.9	34.4	47.4	55.2	62.6	66.5	65.1	56.8	46.2	34.3	38.7	47.9	85	— 9	May 14	Oct. 10
Goldhill (a)	35.6	29.1	30.5	40.1	51.4	59.7	64.4	62.6	55.0	47.7	.....	.....	.....	90	.....	May 15	Sept. 26
Grand Junction	33.4	37.2	44.4	52.8	62.4	75.5	78.6	75.2	66.0	54.6	38.6	30.1	54.1	100	4	Apr. 23	Nov. 2
Greeley	.....	29.8	34.1	47.5	58.4	68.0	[c]70.2	69.6	58.2	45.8	28.4	29.9	.....	94	—15	Apr. 20	Sept. 28
Gulch	26.9	24.8	29.6	41.7	50.1	63.5	65.0	64.0	55.4	45.7	27.8	27.6	43.5	94	— 5	June 4	Sept. 26
Gunnison	8.8	4.1	25.2	39.8	48.4	[c]61.6	[c]60.9	60.4	51.8	40.5	19.6	14.6	36.3	91	—29	June 12	Aug. 9
Hugo (e)	32.8	39.1	40.4	.....	58.8	73.8	76.4	72.7	.....	43.8	29.6	.....	.....	98	—10	May 1	Oct. 2
Hugo (near)	31.7	31.4	33.2	47.5	56.5	65.8	67.8	[c]67.0	57.0	44.9	30.4	34.5	47.3	91	—14	May 13	Sept. 27
Husted	35.1	34.9	35.6	48.3	56.0	64.4	69.0	67.9	59.0	47.3	36.4	36.3	49.2	96	—14	May 1	Sept. 28
Jamestown	31.2	27.4	28.0	40.1	[c]48.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Julesburg	29.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lajara	.....	.....	.....	.....	51.9	62.0	65.0	62.3	56.2	.....	.....	.....	.....	.....	.....	.....	.....
Lake Moraine	27.0	18.4	24.7	34.8	43.9	52.4	54.3	54.6	47.0	36.6	26.2	28.8	37.4	74	—12	June 1	Sept. 24
Lamar	.....	.....	.....	.....	68.0	76.8	79.8	79.4	67.3	53.3	36.6	37.7	.....	.....	.....	Apr. 30	Oct. 11
Las Animas	35.0	35.8	39.0	51.0	60.7	76.8	77.6	76.4	65.0	49.8	37.2	37.8	53.5	103	— 2	Apr. 29	Oct. 11
Lay (a)	21.0	17.8	[c]25.6	43.1	50.7	65.8	69.6	69.2	[c]62.5	44.2	26.2	23.8	43.3	101	—22	June 12	Sept. 26
Leadville (near) (a)	21.2	18.5	22.8	35.9	42.0	51.5	.....	52.8	46.4	38.1	22.7	23.2	.....	.....	—10	May 16	Sept. 26

[1] S. H. Gerrish.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Colorado—Continued.																	
Leroy	33.4	35.6	34.4	48.0	59.8	67.8	72.8	73.2	61.6	49.1	29.5	37.2	50.2	98	—12	Apr. 19	Oct. 10
Longmont	32.0	33.8	37.4	48.1	60.4	69.2	72.7	71.6	60.6	46.2	31.6	34.5	50.0	100	— 9	Apr. 28	Oct. 5
Longs Peak	29.2	.....	27.2	38.2	47.4	54.7	54.7	55.0	48.0	39.8	28.0	[a]30.8	.....	85	— 9	June 12	Aug. 23
Meeker	22.0	21.4	30.5	42.8	52.4	[a]62.2	67.9	65.6	55.4	44.3	27.8	25.0	43.1	101	—24	June 10	Sept. 10
Millbrook	30.0	25.0	30.2	45.0	53.0	59.6	64.0	60.5	56.2	44.0	33.5	28.3	44.1	89	—17	June 12	Sept. 25
Minneapolis	38.4	38.2	40.4	57.4	66.5	75.2	78.4	78.4	64.4	52.6	38.6	41.9	55.9	105	1	Apr. 18	Oct. 10
Monte Vista	21.9	25.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montrose	31.2	33.5	44.2	53.1	63.2	74.9	76.4	71.0	62.4	50.5	34.9	26.9	51.8	100	— 2	May 1	Sept. 28
Moraine	31.7	27.4	28.4	38.1	47.0	56.6	59.3	59.0	51.0	41.4	31.1	33.2	42.0	82	—12	June 12	Sept. 9
Ouray	28.8	25.3	34.4	41.1	45.0	60.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pagoda	22.4	19.6	29.8	42.0	50.2	61.8	66.8	65.4	55.0	43.4	26.0	24.2	42.2	99	—21	June 12	Sept. 11
Parachute	23.2	32.2	.....	50.2	59.2	71.4	.....	70.3	62.0	50.3	32.1	24.6	.....	102	— 8	May 13	Oct. 9
Pinkhamton	25.4	22.5	28.5	39.0	48.4	61.0	65.4	56.6	50.9	43.5	27.4	28.3	41.4	88	—11	May 18	Sept. 26
*Pueblo	36.8	36.8	38.8	53.4	62.2	72.0	75.0	74.2	63.5	50.6	35.4	38.4	53.1	102	—17	Apr. 29	Sept. 28
Rangely	14.8	13.6	.....	.....	.....	.....	.....	.....	59.2	46.0	28.4	22.8	.....	.....	.....	.....	.....
Rico	26.1	23.0	29.3	37.6	47.0	55.8	57.5	56.6	50.6	41.5	26.8	26.6	39.9	85	—19	May 20	Sept. 24
Rockford	35.1	35.6	39.6	54.2	62.9	73.2	75.2	75.2	66.2	50.6	36.2	36.2	53.4	101	— 5	Apr. 29	Oct. 11
Saguache	22.8	24.0	32.4	39.3	44.0	61.8	.....	63.8	54.2	44.4	28.6	20.8	.....	.....	— 7	May 22	Sept. 24
San Luis	22.4	26.2	[a]31.3	42.8	52.6	62.2	64.8	64.8	56.9	46.7	31.0	23.1	43.7	98	—19	June 4	Sept. 25
Santa Clara (*a*)	30.8	28.0	29.7	45.3	[a]53.6	.....	.....	[a]60.6	50.4	38.8	29.4	32.5	.....	.....	— 8	May 13	Sept. 25
Sherwood Ranch	27.7	29.0	25.2	40.8	47.2	57.2	61.1	59.8	50.4	40.2	26.2	28.4	40.6	87	—23	May 20	Sept. 10
Smokyhill Mine	35.0	30.6	30.4	37.6	49.2	58.0	62.4	63.4	52.6	44.8	32.6	33.1	44.1	89	—14	May 16	Sept. 26
Stamford (*a*)	26.6	21.5	27.0	35.6	45.0	54.8	53.4	52.2	46.0	35.0	26.8	27.0	37.6	82	— 6	June 5	Sept. 25
Steamboat Springs	.....	16.1	23.0	40.1	.....	.....	.....	.....	58.5	43.0	31.6	20.6	.....	.....	.....	Apr. 18	Sept. 28
Sulphur Springs	18.2	16.6	26.4	37.6	48.0	56.4	61.9	59.4	51.2	40.9	21.6	20.6	38.2	92	—25	.....	.....
Surface Creek	30.3	30.4	39.2	47.3	55.2	67.4	69.2	69.0	59.2	49.0	36.2	30.2	48.6	96	0	May 16	Sept. 27
Thon	36.6	33.8	36.3	48.8	56.1	67.5	72.2	70.0	59.6	49.4	35.4	37.9	50.3	102	—12	May 15	Oct. 10
T. S. Ranch	32.3	32.9	41.1	51.9	58.4	.....	73.8	71.0	62.8	52.2	37.2	28.6	.....	.....	9	May 13	Nov. 2
Wray	32.8	36.7	36.3	52.3	63.4	70.2	75.1	74.4	[a]61.3	49.6	30.6	38.1	51.7	101	—15	Apr. 19	Oct. 6
Connecticut.																	
Bridgeport	25.3	29.2	31.2	49.2	62.4	65.6	72.2	72.3	64.2	50.8	45.6	29.0	49.8	95	— 7	Apr. 10†	Oct. 20†
Canton	20.9	25.0	28.3	48.3	60.2	62.5	69.7	68.0	57.2	47.5	44.1	26.2	46.5	92	—19	May 2	Oct. 9
Colchester	23.4	28.2	31.2	48.9	61.0	64.2	70.8	69.5	60.7	[a]48.7	[a]43.3	28.4	48.2	93	—10	May 2	Oct. 9
Hartford	24.4	28.0	30.8	50.7	63.2	65.9	72.5	71.2	[a]60.6	49.8	46.0	28.4	49.3	92	—11	Apr. 10†	Oct. 9
Middletown	23.9	28.9	31.5	50.8	62.5	65.9	73.5	71.6	62.5	49.5	45.8	28.0	49.5	96	—13	Apr. 23	Oct. 9
*New Haven	25.0	28.6	30.8	48.2	61.9	65.2	72.2	71.3	62.9	49.8	46.3	29.4	49.3	94	—11	Apr. 10†	Sept. 24
New London	26.0	29.8	31.2	46.8	58.5	67.0	70.9	70.4	61.8	49.4	46.5	30.6	49.1	93	— 8	Apr. 10†	Oct. 10
North Grosvenor Dale	19.6	24.6	30.6	48.0	58.6	63.2	69.9	67.7	57.6	47.0	41.6	22.6	45.9	94	—14	May 8†	Sept. 13†
Norwalk	23.6	28.7	30.8	48.0	61.7	65.0	71.6	70.9	62.1	48.8	44.0	26.6	48.5	91	—10	May 1†	Oct. 9
Southington (*a*)	22.8	28.0	30.2	49.5	62.2	64.7	72.0	69.6	60.7	47.6	43.7	25.7	48.1	93	—16	.....	Oct. 9
Storrs	21.4	25.5	29.1	48.1	59.5	62.7	70.2	68.6	59.8	47.2	43.7	25.6	46.8	93	—13	May 2	Oct. 8
Thompson	20.6	24.7	27.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Voluntown	24.2	29.7	32.4	48.6	59.6	[a]65.0	71.3	[a]67.0	60.6	[a]49.0	46.2	28.3	48.5	91	—14	May 8	Oct. 9
Waterbury	24.0	28.0	31.4	50.6	62.6	65.6	72.0	70.0	61.6	49.2	46.4	29.2	49.2	93	—12	Apr. 10†	Oct. 10
West Cornwall	.....	.....	.....	.....	.....	62.1	69.0	67.3	58.6	45.8	42.4	25.0	.....	.....	.....	.....	.....
Windsor	21.8	26.6	29.9	48.9	61.7	65.1	72.6	70.1	60.6	47.7	43.6	26.6	47.9	91	—10	Apr. 23	Oct. 9
Delaware.																	
Dover	32.3	36.1	38.0	55.6	68.6	70.0	76.2	74.8	66.4	53.1	50.8	33.7	54.6	95	7	.....	Oct. 25
Milford	33.2	37.2	39.8	56.6	68.6	71.6	78.1	77.0	68.4	55.9	54.2	36.6	56.4	99	9	.....	.....
Millsboro	32.2	36.8	39.6	55.2	67.6	71.3	77.0	74.9	67.2	54.0	53.9	35.1	55.4	98	6	.....	Oct. 8
Newark	29.8	33.0	35.2	53.6	66.2	69.0	75.9	74.8	65.7	51.4	48.5	31.1	52.8	98	0	Apr. 9	Oct. 9
Seaford	33.0	37.0	38.9	56.2	67.2	70.0	76.0	75.0	66.6	53.4	51.2	34.9	55.0	97	6	May 8	Oct. 9
Wilmington	31.9	34.6	37.8	58.1	70.1	72.6	80.0	77.8	68.6	54.9	51.3	.....	.....	103	1	Apr. 9	Oct. 25
District of Columbia.																	
Distributing reservoir (*e*)	33.0	35.8	39.0	57.3	69.6	72.3	78.1	76.6	68.4	55.2	51.2	36.0	56.0	96	9	.....	.....
Receiving reservoir (*e*)	32.7	35.4	38.0	57.8	69.2	72.4	78.0	76.5	68.2	54.6	50.6	35.6	55.8	95	9	.....	.....
*Washington	33.3	36.7	38.5	56.6	68.8	71.3	76.7	75.8	67.8	54.0	50.6	35.6	55.5	98	8	Apr. 9	Oct. 19
West Washington	34.0	37.0	39.6	57.0	69.0	71.6	77.0	74.6	66.9	53.7	50.2	34.6	55.5	98	8	.....	.....
Florida.																	
Amelia	51.2	55.6	57.9	68.0	75.4	78.6	80.8	80.3	78.8	69.1	67.0	52.0	67.9	95	26	Feb. 22	.....
Archer	54.5	58.4	63.2	71.0	77.8	80.1	81.6	82.3	79.2	71.0	68.8	55.0	70.2	98	24	Feb. 22	.....
Avonpark	59.6	61.6	68.1	72.5	78.0	81.7	81.8	84.3	81.3	74.8	.....	.....	.....	99	.....	.....	.....
Bartow	55.6	58.2	65.0	70.3	77.0	80.4	80.2	82.6	79.8	73.0	71.9	60.2	71.2	95	30	Feb. 19	.....
Brooksville	55.0	57.4	63.2	71.0	76.8	79.4	80.6	81.0	78.8	70.8	70.3	57.5	70.2	95	30	Feb. 21	.....
Carrabelle	.....	.....	.....	68.8	[a]76.4	81.0	81.6	83.6	79.6	71.4	68.4	.....	.....	96	.....	.....	.....
Clermont	57.3	59.2	66.0	74.8	80.4	82.0	83.1	83.6	80.6	74.4	74.6	60.6	73.0	101	34	.....	.....
DeFuniak Springs	.....	.....	.....	.....	.....	.....	.....	.....	.....	67.6	62.0	51.1	.....	.....	.....	.....	.....
Earnestville	56.2	59.0	65.4	73.0	79.6	81.8	83.5	83.0	80.0	72.7	70.0	59.0	71.9	101	30	Feb. 23	.....
Emerson	.....	.....	.....	68.4	[a]79.5	81.6	83.2	82.9	79.2	69.4	67.5	53.2	.....	.....	.....	.....	.....
Eustis	56.5	58.5	65.0	71.7	78.4	80.6	82.4	83.2	80.0	72.7	71.0	59.1	71.6	98	29	.....	.....
Federal Point	53.6	56.6	61.2	68.4	75.4	78.8	80.5	80.8	77.5	69.6	68.5	55.6	68.9	96	29	Feb. 22	.....
Fort Meade	54.8	56.8	63.6	67.7	73.6	76.0	.....	.....	[a]73.2	71.8	70.9	58.6	.....	.....	25	Feb. 26	.....
Frostproof (*a*)	57.8	59.1	65.0	70.7	76.0	77.9	79.0	81.5	78.6	73.2	71.9	60.4	70.9	97	34	.....	.....
*Gainesville	.....	.....	.....	.....	79.0	81.2	83.4	83.4	79.3	.....	.....	.....	.....	.....	.....	.....	.....
Grasmere	56.0	58.7	64.3	71.4	78.5	81.8	82.7	83.0	79.4	72.0	70.8	58.9	71.5	100	30	Feb. 13	.....
Hypoluxo (*a*)	64.7	64.1	69.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Jacksonville	53.5	57.2	60.8	70.0	77.7	79.9	82.2	82.8	79.2	70.4	67.4	53.8	69.6	100	24	Mar. 21	Dec. 22
*Jupiter	62.3	63.1	67.6	72.0	76.2	79.2	80.0	82.2	80.6	76.0	75.5	66.0	73.4	93	37	.....	.....
*Key West	66.4	68.0	70.6	75.0	79.4	82.3	82.3	84.0	82.0	79.8	77.0	70.3	76.4	90	52	.....	.....
Lake Butler	.....	.....	.....	70.0	77.4	80.7	[a]82.4	82.0	80.1	.....	.....	53.2	.....	.....	.....	.....	.....
Lake City	55.0	58.4	62.9	72.4	78.9	80.6	82.4	82.4	79.9	69.8	66.9	54.3	70.3	96	27	Feb. 22	.....

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Florida—Continued.																	
Lemon City	63.5	65.8	69.7	74.5	79.5	82.0	82.9	82.4	81.7	78.1	77.4	68.5	75.5	94	37	.....	.....
Macclenny	.....	55.1	60.0	70.6	77.4	80.6	83.0	83.3	79.3	70.0	66.6	55.0	.....	103	.....	Feb. 23	.....
Manatee	55.0	56.9	63.6	69.8	75.5	79.7	79.6	80.9	79.0	72.2	71.8	60.4	70.4	97	27	Feb. 19	.....
Merritts Island	59.5	61.8	66.4	72.8	77.1	80.7	81.7	80.5	79.7	73.1	74.2	63.3	72.6	94	35	.....	.....
Mullet Key	56.9	59.8	64.0	71.4	78.2	82.6	83.4	84.4	80.7	74.0	72.3	61.2	72.4	94	36	.....	.....
Myers	59.5	62.3	67.8	72.3	76.7	80.7	80.8	82.5	80.2	75.4	73.6	64.2	73.0	93	38	.....	.....
New Smyrna	54.3	57.8	61.8	67.2	72.6	[c]78.0	.....	79.0	77.6	70.6	70.7	58.0	.....	.....	33	Feb. 18	.....
Oakhill (*a*)	59.2	61.1	66.1	73.2	77.3	80.0	80.6	82.0	82.4	76.3	75.9	62.7	73.1	93	34	.....	.....
Ocala (*a*)	54.0	56.8	62.3	70.2	76.9	78.4	80.2	81.4	78.4	72.3	69.1	56.0	69.7	97	29	Feb. 22	.....
Orange City	56.1	58.0	64.0	71.0	79.0	81.8	.....	.....	80.0	72.1	70.6	59.0	.....	.....	29	Feb. 22	.....
Orangepark	52.4	55.6	60.4	69.6	74.8	75.4	.....	.....	.....	.....	67.8	53.6	.....	.....	24	Feb. 22	.....
Orlando	58.5	59.3	66.4	71.8	77.6	79.7	80.8	82.4	78.2	70.6	69.4	57.8	71.0	97	33	Feb. 10	.....
Oxford (*a*)	.....	.....	.....	72.2	78.2	79.7	80.4	81.8	78.7	72.2	70.2	57.5	.....	.....	.....	.....	.....
*Pensacola	50.6	53.8	58.5	68.6	76.6	79.2	81.1	82.7	78.1	69.3	63.3	52.6	67.9	99	22	Feb. 18	Dec. 5
Plant City	57.1	59.5	66.0	70.9	77.8	80.6	81.3	82.2	79.7	72.4	72.4	60.0	71.7	98	29	Feb. 22	.....
St. Francis	57.4	60.0	62.0	68.8	73.4	79.1	80.4	81.0	78.4	70.3	68.4	58.0	69.8	99	29	Feb. 27	.....
St. Francis Barracks	52.6	56.3	59.1	68.1	74.4	78.0	80.0	80.6	76.3	69.0	69.8	55.5	68.3	95	29	.....	.....
Tallahassee	50.7	[f]52.9	59.0	70.7	77.4	77.1	79.6	80.6	72.0	[f]67.4	62.6	51.0	66.8	96	22	Feb. 21	.....
*Tampa	57.2	58.8	64.9	71.2	77.2	80.2	80.6	82.0	79.6	73.2	72.0	60.2	71.4	95	32	Feb. 18	.....
Tarpon Springs	54.6	57.8	63.0	70.2	74.6	79.0	79.8	81.0	78.6	72.5	71.6	58.6	70.1	92	28	Feb. 18	.....
Georgia.																	
Adairsville	39.8	43.0	48.1	65.1	74.3	75.4	79.2	80.4	74.0	57.6	53.8	41.1	61.0	98	9	Mar. 21	Oct. 18
*Alapaha	.....	.....	.....	.....	77.8	80.3	82.8	83.4	79.2	.....	.....	.....	.....	102	.....	.....	.....
*Albany	46.8	52.2	54.8	69.8	79.4	82.1	82.2	84.1	79.2	65.2	58.0	50.4	67.0	104	17	.....	.....
Allentown	.....	.....	56.2	72.6	79.4	81.6	84.2	86.0	78.6	64.6	60.6	47.0	.....	.....	.....	Mar. 21	Nov. 9
*Americus	45.4	50.3	55.9	71.4	79.6	81.5	83.2	84.2	79.0	65.3	60.2	46.8	66.9	101	14	.....	Nov. 9
*Athens	.....	.....	.....	.....	75.3	77.2	80.0	.....	74.2	61.0	.....	.....	.....	.....	.....	.....	.....
*Atlanta	41.8	45.3	49.2	65.7	74.9	75.2	78.2	80.4	74.7	61.4	55.6	44.2	62.2	97	10	Mar. 21	Nov. 9
*Augusta	45.2	49.6	54.0	68.2	77.4	78.8	82.0	82.0	76.6	64.4	59.8	45.4	65.3	101	15	Mar. 21	Nov. 9
*Bainbridge	.....	.....	.....	.....	79.4	81.8	82.8	83.4	78.9	.....	.....	.....	.....	101	.....	.....	.....
Blakely (*f*)	48.1	52.6	57.6	69.7	76.4	77.2	79.8	82.2	79.5	66.1	61.9	50.1	66.8	98	18	Mar. 21	Nov. 9
Brag	47.5	52.0	56.2	69.8	77.4	76.1	82.4	82.3	78.0	66.8	62.2	47.5	66.5	105	13	Mar. 21	Nov. 14
Brunswick	.....	53.0	59.1	67.7	76.1	78.8	80.8	.....	.....	.....	.....	.....	.....	.....	.....	Feb. 22	.....
*Camak	.....	.....	.....	.....	77.0	78.4	81.2	.....	76.0	.....	.....	.....	.....	.....	.....	.....	.....
Cedartown	.....	.....	.....	.....	.....	.....	.....	.....	76.8	60.8	54.0	44.6	.....	.....	.....	.....	Oct. 19
Clayton	38.3	40.8	46.0	61.4	71.2	71.6	75.1	76.0	68.4	55.8	51.6	44.5	58.4	95	6	Apr. 9	Oct. 19
*Columbus	.....	.....	.....	.....	77.1	79.4	81.4	82.0	78.8	.....	.....	.....	.....	99	.....	.....	.....
*Cordele	.....	.....	.....	.....	76.9	79.2	81.8	83.5	78.8	.....	.....	.....	.....	100	.....	.....	.....
Covington	41.6	45.3	[c]47.6	66.2	75.5	76.6	80.0	81.2	74.2	59.2	54.4	41.7	62.0	99	11	Apr. 2	Oct. 16
Dahlonega	40.8	44.2	48.3	63.7	70.4	71.5	73.8	76.6	70.8	58.7	54.4	43.0	59.7	95	6	Mar. 25	Oct. 19
Diamond	38.4	39.2	45.2	61.6	69.7	71.2	74.8	75.4	69.2	54.8	51.2	39.2	57.5	94	3	Apr. 5	Oct. 15
*Eastman	.....	.....	.....	.....	76.3	80.3	82.0	82.6	78.8	.....	.....	.....	.....	.....	.....	.....	.....
*Elberton	43.3	46.2	50.7	67.2	76.4	77.4	79.0	80.0	76.2	63.2	58.0	46.6	63.7	102	12	Mar. 21	Nov. 8
Fleming	46.9	53.2	55.9	67.8	76.0	79.2	82.5	86.3	76.4	65.6	61.4	46.8	66.5	103	15	Apr. 3	Nov. 14
*Fort Gaines	45.6	50.2	55.6	.....	78.0	80.4	82.0	83.2	77.7	.....	59.2	.....	.....	102	18	.....	.....
*Gainesville	.....	.....	.....	.....	.....	76.2	78.6	81.0	74.2	.....	53.2	41.6	.....	103	.....	.....	Nov. 8
Gillsville	[c]40.7	45.8	49.8	66.3	74.7	76.0	78.5	80.8	74.5	62.8	56.4	44.7	62.6	100	10	Mar. 21	Oct. 19
*Griffin	.....	.....	.....	.....	78.4	78.9	81.2	82.8	77.4	.....	.....	.....	.....	98	.....	.....	.....
Hephzibah (*f*)	46.3	48.0	53.1	70.4	76.6	77.0	82.3	83.9	78.4	66.9	62.3	48.8	66.2	95	20	Mar. 21	Nov. 9
Lagrange	43.7	47.1	52.0	68.4	76.0	78.2	79.9	83.6	77.6	66.2	58.4	48.0	64.9	100	14	Mar. 20	Nov. 9
Leverett	.....	.....	50.4	68.5	76.0	78.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mar. 21	.....
Louisville	42.8	48.2	53.2	.....	.....	.....	.....	.....	.....	64.6	59.8	46.6	.....	.....	13	Mar. 21	Nov. 9
Lumpkin	47.4	51.0	55.4	71.2	78.2	77.9	80.3	82.5	79.0	66.5	.....	.....	.....	99	.....	Mar. 21	.....
*Macon	.....	.....	.....	.....	[b]79.5	78.4	82.1	81.8	77.2	.....	.....	.....	.....	102	.....	.....	.....
Marietta	40.6	44.2	48.2	64.5	73.2	74.0	76.9	78.6	73.4	59.6	54.2	43.2	61.0	96	9	Mar. 21	Oct. 19
Marshallville	46.8	51.0	54.6	70.7	78.7	80.4	82.0	83.6	78.6	64.9	60.1	47.2	66.6	97	18	Mar. 21	Nov. 9
Milledgeville	43.8	49.7	53.5	67.8	76.1	77.3	80.6	81.7	76.1	64.4	58.2	47.0	64.7	98	16	Mar. 21	Nov. 9
*Millen	45.0	49.2	55.6	.....	78.2	79.5	83.4	81.6	75.5	63.3	57.2	.....	.....	107	.....	.....	Nov. 10
Monticello (*a*)	45.8	49.0	54.6	68.8	79.5	79.8	.....	82.4	78.5	65.8	58.6	48.3	.....	.....	19	Feb. 22	Dec. 2
Morgan	47.4	51.6	55.2	68.3	75.8	[a]78.8	81.4	81.4	77.5	65.8	59.8	47.2	65.8	100	15	Mar. 21	Nov. 9
*Newnan	.....	.....	.....	.....	75.8	77.4	80.2	81.8	76.2	61.8	56.7	45.2	.....	99	.....	.....	.....
Piscola	.....	.....	.....	.....	.....	.....	.....	.....	.....	[f]68.2	64.6	51.8	.....	.....	.....	.....	Dec. 4
Point Peter (*a*)	42.1	45.8	50.4	64.2	73.2	75.8	78.3	80.3	73.5	58.8	55.5	40.9	61.6	96	12	Feb. 26	Oct. 19
Poulan	47.8	51.2	56.2	68.3	76.4	79.0	81.7	82.6	78.2	66.2	61.4	49.1	66.5	102	15	Mar. 22	Nov. 9
*Quitman	48.6	52.8	57.7	73.6	76.8	79.2	81.6	83.0	77.7	66.6	63.0	50.2	67.6	108	18	.....	Nov. 7
Ramsey	42.0	44.1	49.4	65.7	70.1	74.2	77.8	79.4	75.6	59.8	56.2	43.7	61.5	100	6	Apr. 3	Oct. 19
*Rome	41.2	43.4	49.6	65.0	74.0	75.8	79.5	80.4	73.6	60.0	53.9	42.8	61.6	98	12	Mar. 21	Nov. 9
*Savannah	49.0	53.6	57.6	68.6	77.6	79.6	82.6	81.8	77.4	67.4	63.4	49.8	67.4	101	21	Mar. 21	Dec. 3
Talbotton	44.7	48.1	52.9	66.7	75.1	76.6	78.9	.....	.....	[c]62.2	57.4	45.4	.....	.....	17	Mar. 21	Nov. 9
*Thomasville	49.8	54.0	58.2	70.0	77.5	79.6	81.5	83.2	80.0	68.3	63.6	50.8	68.4	99	20	.....	.....
*Toccoa	40.9	43.9	47.7	62.8	72.0	74.0	78.1	79.1	72.9	59.4	55.1	[f]42.6	60.7	97	9	.....	.....
*Union Point	.....	.....	.....	.....	74.6	76.0	78.0	.....	73.8	.....	.....	.....	.....	.....	.....	.....	.....
*Washington	[c]41.6	[c]46.2	[c]50.6	[c]63.0	75.6	76.7	79.4	81.0	75.1	.....	.....	.....	.....	.....	.....	.....	.....
*Waycross	.....	.....	.....	.....	77.5	80.0	82.6	82.2	78.0	.....	.....	.....	.....	98	.....	.....	.....
*Waynesboro	.....	.....	.....	.....	76.4	77.6	80.6	.....	75.2	.....	.....	.....	.....	100	.....	.....	.....
*Westpoint	.....	.....	.....	.....	76.4	78.7	82.1	82.2	75.8	.....	.....	.....	.....	.....	.....	.....	.....
Idaho.																	
American Falls	27.6	32.8	35.6	42.4	48.6	64.7	73.0	69.3	56.5	.....	29.7	31.2	.....	102	—27	May 20	.....
Atlanta	25.7	26.7	25.6	30.8	34.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 24	.....
Birch Creek	.....	.....	.....	.....	45.9	61.3	72.8	69.6	.....	.....	.....	.....	.....	.....	.....	.....	.....
Blackfoot	27.8	30.8	[c]35.1	42.4	49.2	63.1	68.0	64.6	57.0	46.4	34.0	29.4	45.6	98	—28	May 11	Sept. 9
Bliss	28.8	36.4	39.4	44.4	51.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 16	.....
Boise Barracks	33.2	38.8	40.7	45.4	50.4	67.8	76.3	71.8	59.4	51.5	35.6	35.8	60.6	106	—10	May 19	Sept. 10
Burnside	.....	25.5	28.6	36.1	43.5	62.8	67.3	65.5	55.2	46.2	21.9	27.8	.....	90	.....	May 20	Sept. 9
Cariboo	26.9	23.0	26.0	32.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Idaho—Continued.																	
Challis	27.6	32.6	33.4	42.6	48.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 20	.....
Chesterfield	19.8	19.9	26.9	39.0	45.9	60.6	63.1	59.9	49.4	39.0	24.0	25.5	39.4	96	—26	June 25	Aug. 5
Coeur d'Alene	30.6	36.7	36.6	47.8	48.3	60.8	70.2	69.2	57.6	49.6	30.6	36.0	47.8	100	—13	Apr. 30	Sept. 25
Corral (a)	20.4	20.4	19.4	35.0	43.8	60.4	65.4	66.1	53.4	43.4	23.8	25.0	39.7	92	—20	May 19	Sept. 10
Dairy	33.3	35.7	34.8	38.1	43.7	62.8	70.9	67.2	51.5	46.4	.....	.....	.....	98	.....	May 20	.....
Downey	26.3	29.4	32.2	40.8	46.0	61.0	69.0	65.0	53.2	46.2	.....	.....	.....	98	.....	June 11	Sept. 10
Fort Lemhi	26.4	29.8	28.8	41.2	47.0	65.4	[c]70.3	69.2	.....	.....	.....	.....	.....	.....	.....	June 11	.....
Fort Sherman	28.8	34.6	35.6	43.2	49.0	61.6	70.9	65.8	56.4	48.6	29.7	35.0	46.6	101	—15	May 15	Sept. 26
Fraser	.....	.....	33.0	40.8	45.9	59.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	June 11	.....
Gimlet	.....	.....	.....	.....	.....	59.8	67.3	63.4	53.4	47.0	25.6	25.8	.....	93	.....	.....	Sept. 9
Grangeville	33.6	35.4	35.3	40.1	45.0	59.0	70.5	66.6	55.0	49.2	29.0	38.1	46.4	93	—11	May 19	.....
Idaho City	26.5	29.6	[e]34.0	39.0	44.6	60.6	70.1	[e]67.2	[d]56.8	.....	28.8	31.8	.....	.....	.....	June 11	Sept. 16
*Idaho Falls	26.0	29.8	31.4	40.9	46.6	62.4	69.6	67.0	56.8	45.9	28.6	27.3	44.4	95	—26	May 18	Sept. 9
Junction	10.2	15.6	21.4	.....	.....	.....	64.2	60.3	.....	.....	.....	.....	.....	.....	.....	May 14	Sept. 9
Kootenai	23.6	30.4	34.1	43.5	51.6	62.4	69.8	64.6	54.1	46.6	27.6	30.4	44.8	95	—14	May 14	Sept. 9
Lake	17.6	12.6	14.2	28.4	36.8	57.1	.....	.....	.....	.....	19.0	20.0	.....	.....	.....	June 21	.....
Lewiston	38.0	43.2	44.8	51.0	54.0	[e]67.4	[e]77.3	[f]73.2	.....	.....	[e]38.0	41.4	.....	.....	.....	Apr. 19	.....
Martin	20.4	20.8	27.4	36.4	43.0	[b]54.2	63.5	62.4	48.6	42.2	23.6	23.8	38.9	91	—32	June 12	Sept. 8
Minidoka	27.6	32.0	33.8	40.6	47.6	67.2	82.1	75.4	55.2	48.8	28.8	31.9	47.6	101	—33	June 11	Sept. 9
Moscow	36.1	40.8	40.2	44.9	47.4	60.2	69.8	63.6	56.2	50.3	[f]30.6	[h]38.4	48.2	97	—14	May 17	Sept. 10
Murray	26.5	31.6	32.0	41.4	45.8	58.6	67.9	65.6	53.0	45.8	26.8	31.8	43.9	90	— 8	June 11	Sept. 9
Nampa	33.2	39.1	41.0	45.9	49.8	66.2	79.4	69.8	59.6	52.0	39.5	32.8	50.7	105	—16	May 20	Sept. 26
Oakley	34.7	36.7	36.1	43.6	49.4	67.4	73.9	69.0	58.6	.....	33.8	.....	.....	103	.....	June 8	Sept. 9
Ola	.....	.....	.....	.....	.....	.....	.....	.....	.....	48.2	32.8	33.7	.....	.....	.....	.....	Sept. 26
Orchard	33.1	37.0	.....	44.8	48.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 20	.....
Paris	22.8	20.8	28.8	38.2	44.5	59.7	64.8	64.0	55.3	45.8	28.6	24.5	41.5	95	—13	June 11	Sept. 10
Payette	33.6	44.3	45.2	50.3	55.6	69.0	79.4	73.2	62.1	53.0	43.0	34.2	53.6	107	— 6	June 10	Sept. 28
Pollock	.....	.....	43.4	48.3	53.0	64.4	74.1	70.7	60.2	53.0	36.0	39.6	.....	107	.....	May 19	Sept. 26
Rexburg	.....	.....	.....	.....	.....	.....	72.5	64.4	55.2	44.2	28.4	26.1	.....	97	.....	.....	Sept. 9
Roseberry	24.8	21.8	27.1	36.0	43.4	[e]54.3	65.5	64.6	49.2	43.6	23.6	26.2	40.0	94	—34	June 22	Sept. 9
Salubria	27.3	32.8	40.1	45.2	51.8	66.2	74.2	70.5	58.6	50.8	32.2	31.6	48.4	103	16	May 18	Sept. 10
Shoup	.....	.....	.....	.....	.....	66.3	74.2	71.8	[i]62.3	50.4	31.8	27.2	.....	.....	.....	.....	Sept. 25
Soldier	18.4	18.8	23.6	39.8	43.2	59.5	67.2	63.1	51.0	43.4	24.0	24.3	39.7	95	—33	June 11	Aug. 5
Swan Valley	22.8	21.6	28.8	39.5	45.6	60.6	66.0	62.5	[e]52.8	41.6	25.6	26.4	41.2	96	—35	June 25	Sept. 9
Warren	23.2	29.6	27.2	35.9	40.5	54.2	63.6	58.8	51.1	47.2	25.2	31.4	41.0	96	—38	June 11	Aug. 9
Illinois.																	
Albion	33.6	36.3	38.6	62.4	70.6	73.0	78.1	78.0	67.6	55.4	46.6	38.4	56.5	99	2	Apr. 4	Oct. 18
Alexander	31.0	32.2	37.4	61.4	71.4	76.6	76.9	76.6	65.4	53.2	42.6	36.4	54.8	100	— 2	Apr. 7	Sept. 20
Ashton (a)	23.2	21.4	30.9	55.2	68.0	71.1	74.6	73.6	59.8	46.1	35.2	30.5	49.1	97	—18	Apr. 22	Sept. 20
Atwood (c)	27.1	28.2	32.4	55.8	66.2	68.3	71.0	72.2	60.1	46.2	39.2	31.7	49.9	104	—10	Apr. 10	Sept. 20
Aurora[1]	29.2	29.2	34.0	56.4	69.3	71.1	75.0	74.9	61.2	.....	.....	31.5	.....	102	—14	Apr. 22	Sept. 20
Aurora[2]	25.9	25.0	30.2	54.4	66.4	69.0	72.3	72.8	59.4	46.8	36.1	30.8	49.1	97	—13	Apr. 10	Sept. 20
Bloomington	.....	29.2	[e]33.1	60.2	70.3	72.2	73.8	72.7	63.3	51.8	40.6	34.8	.....	.....	.....	Apr. 21	Sept. 20
Bushnell	29.6	29.2	36.2	59.8	71.6	73.8	[e]75.4	76.3	61.4	51.4	38.8	36.2	53.3	101	— 6	Apr. 8	Oct. 7
*Cairo	37.8	39.4	43.0	65.8	72.9	74.4	79.6	79.1	69.4	58.3	50.1	42.9	59.4	98	8	[j]Mar. 24	Oct. 18
Cambridge	28.0	27.4	33.4	56.4	68.2	70.2	73.7	72.4	60.6	48.8	36.1	33.3	50.7	95	— 6	Apr. 8	Sept. 20
Carlinville	31.5	33.3	37.6	62.4	71.0	71.6	76.3	76.8	65.8	53.0	43.2	37.4	55.1	100	2	Apr. 4	Oct. 18
Carrollton	30.4	31.8	36.1	60.1	69.2	70.4	75.0	74.4	62.4	52.6	40.3	36.5	53.3	93	0	Apr. 4	Oct. 18
Catlin	26.8	[e]31.3	35.5	57.3	.....	.....	.....	[e]72.8	.....	.....	.....	31.8	.....	.....	.....	Apr. 10	.....
Cazenovia (a)	27.2	26.9	[e]33.9	[e]56.3	71.0	74.3	[d]76.6	[e]76.0	.....	.....	.....	.....	.....	.....	.....	Apr. 8	Sept. 20
Charleston	30.9	31.7	35.4	60.8	70.5	72.6	75.7	74.7	64.8	51.9	42.6	36.2	54.0	97	— 3	Apr. 4	Sept. 20
Chemung (a)	24.3	22.4	29.2	53.2	66.2	69.3	71.2	71.8	58.4	44.2	34.1	27.9	47.7	96	—15	Apr. 22	Sept. 20
*Chicago	27.0	26.6	31.2	53.4	65.5	67.0	72.2	72.8	60.6	49.6	38.4	32.9	49.8	98	— 9	Apr. 22	Sept. 20
Cisne	35.9	35.9	40.2	63.6	71.6	72.8	76.1	75.0	64.2	49.6	45.0	37.6	55.6	98	6	Apr. 4	Sept. 23
Clearcreek	27.4	26.4	34.6	56.8	68.6	70.2	75.0	72.8	61.3	48.2	35.6	32.2	50.8	99	—10	Apr. 21	Sept. 19
Coatsburg	28.4	30.2	[e]34.6	.....	.....	.....	.....	.....	.....	51.8	40.2	36.4	.....	.....	.....	.....	Oct. 7
Cobden	.....	38.4	41.4	63.4	71.0	72.7	77.6	78.6	68.2	56.4	48.1	40.2	.....	102	.....	Apr. 4	Oct. 18
Decatur	30.2	31.4	36.6	61.2	70.9	72.8	75.5	74.9	65.2	53.5	42.5	35.8	54.2	96	— 3	Apr. 4	Oct. 19
Dixon	25.8	24.4	33.0	55.4	67.8	70.0	73.1	72.6	60.2	48.0	35.8	30.6	49.7	97	—14	Apr. 10	Sept. 20
Duquoin (a)	35.8	39.0	41.2	64.9	73.9	75.5	80.4	79.2	.....	.....	.....	.....	.....	.....	.....	Apr. 3	.....
Dwight	.....	.....	.....	.....	.....	69.6	75.0	73.0	60.4	46.0	36.7	31.8	.....	100	.....	.....	Sept. 20
East Peoria	28.7	28.7	35.4	59.0	69.6	71.8	75.0	72.3	60.9	50.3	[d]36.7	34.7	51.8	100	— 9	Apr. 10	Sept. 20
Effingham	.....	[e]36.8	[e]39.9	65.2	.....	[e]77.0	77.8	77.0	68.3	52.4	44.8	36.8	.....	.....	.....	Apr. 4	Sept. 24
Evanston (k)	26.0	26.8	.....	52.0	64.7	67.6	72.5	74.8	62.1	50.0	.....	32.1	.....	.....	.....	.....	.....
Fort Sheridan	25.0	24.7	29.4	50.6	[e]64.2	[67.0]	[e]71.4	71.6	59.5	46.6	37.5	30.6	[48.2]	95	—11	Apr. 11	Sept. 20
Frederick (c)	29.2	30.4	37.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Friendgrove (d)	34.2	34.4	38.1	58.0	65.6	68.2	73.4	73.8	62.2	52.0	46.8	39.6	53.9	.....	3	Apr. 4	Oct. 18
Galva	26.6	26.6	35.5	57.0	68.2	69.9	74.0	72.6	60.7	48.8	36.2	32.0	50.5	97	— 9	Apr. 9	Sept. 20
Gilman	28.3	30.2	34.3	.....	.....	.....	.....	.....	58.5	[d]45.4	[e]35.4	[e]29.8	.....	.....	.....	Apr. 10	Oct. 7
Glenwood (a)	25.1	25.6	29.0	[d]51.7	[e]62.5	63.9	.....	.....	68.6	56.2	49.8	39.6	.....	.....	.....	.....	Oct. 18
Golconda	38.0	41.0	.....	.....	.....	.....	.....	79.6	67.4	54.6	42.9	37.4	56.2	104	2	Apr. 4	Oct. 17
Greenville	32.6	35.4	38.6	62.5	72.1	74.2	78.3	78.7	.....	.....	42.4	37.6	.....	.....	.....	Apr. 4	Oct. 21
Griggsville	31.8	32.4	38.0	61.8	71.0	72.0	76.9	75.8	.....	.....	[e]47.5	[d]37.4	60.2	100	8	.....	.....
Halliday (e)	[d]37.2	[d]39.6	[e]43.4	[e]67.8	[e]78.4	[e]77.4	[e]83.0	[e]82.4	[d]71.7	[d]57.1	42.2	36.8	54.9	96	— 1	Apr. 9	Oct. 19
Havana	31.6	33.0	38.4	61.6	71.8	73.4	77.0	75.6	64.2	53.8	49.0	43.4	59.1	106	10	Apr. 4	.....
Herrin (g)	35.8	38.4	41.4	65.7	73.6	74.2	77.7	83.1	68.2	[e]58.6	.....	.....	.....	.....	.....	.....	.....
Hillsboro (a)	33.5	34.3	39.6	63.8	72.3	72.0	76.1	76.6	65.5	53.7	48.8	37.0	55.7	101	2	Apr. 4	Oct. 18
Iron	36.3	37.0	42.6	63.4	72.4	74.0	77.6	79.3	69.7	55.2	48.8	40.0	58.0	100	8	Apr. 4	Oct. 18
Joliet	29.8	30.4	35.4	58.0	69.5	71.6	74.2	75.0	62.6	51.4	40.6	34.4	52.7	100	—10	Apr. 22	Sept. 20
Jordans Grove	37.0	38.4	40.8	63.6	71.0	73.8	78.0	78.3	68.3	56.6	46.9	39.8	57.7	98	6	Apr. 3	Sept. 23
Kankakee	[d]28.6	27.4	31.8	55.8	65.6	67.7	71.4	71.6	58.8	.....	[e]37.0	33.3	.....	— 6	.....	Apr. 8	.....
Kishwaukee	.....	.....	30.4	54.2	66.6	68.2	72.2	71.2	58.8	.....	.....	28.6	.....	.....	.....	Apr. 22	Sept. 20
Knoxville (e)	28.6	28.4	34.6	58.2	70.7	72.0	76.0	73.8	62.2	50.0	37.2	34.4	53.2	96	— 8	Apr. 8	Sept. 20
Lagrange	26.2	25.6	31.0	58.9	66.2	66.8	[72.5]	[72.4]	59.4	47.1	37.8	31.3	[49.2]	[98]	—10	Apr. 10	Sept. 20
Lakarpe (a)	27.3	28.0	34.0	59.0	69.2	72.2	77.3	75.3	60.2	49.6	38.0	34.8	52.0	100	—10	Apr. 4	Sept. 20
Lanark (a)	24.7	24.3	30.8	53.9	64.4	66.5	69.3	68.4	57.4	44.0	33.6	29.0	47.2	97	—13	Apr. 22	Sept. 20

[1] C. E. Love.

[2] Dr. M. M. Robbins.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896.—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Illinois—Continued.																	
Lexington	27.0	27.6	33.4	57.4	68.6	69.9	74.0	72.2	.....	.....	.....	34.2	.....	.....	— 9	Apr. 8	.....
Louisville	33.6	35.6	38.6	62.0	69.6	71.6	75.6	75.1	66.4	53.9	45.9	37.7	55.5	96	1	Apr. 7	Oct. 18
McLeansboro (c)	33.0	34.0	37.8	60.7	69.6	72.9	78.4	78.0	67.6	55.4	48.0	38.9	56.2	102	6	Apr. 3	Oct. 18
Martinsville	30.6	32.8	36.5	60.2	70.4	71.8	74.7	74.4	64.6	51.4	44.0	36.4	54.0	97	— 2	Apr. 7	Oct. 17
Martinton	.....	.....	.....	.....	.....	71.0	74.0	73.6	62.2	49.9	39.8	34.0	.....	.....	.....	.....	Sept. 20
Mascoutah (c)	33.0	36.2	39.0	62.0	72.0	77.0	82.6	81.0	70.0	57.8	45.8	38.8	57.9	108	2	Apr. 4	Oct. 18
Mattoon (a)	34.6	36.8	38.8	57.4	69.8	72.8	77.4	77.0	66.4	53.2	43.8	37.7	55.4	102	5	Apr. 8	Oct. 19
Minonk (a)	27.8	26.6	33.2	56.5	68.4	70.3	73.8	73.9	61.6	49.6	38.7	33.9	51.2	95	— 9	Apr. 8	Sept. 20
Monmouth	27.5	27.8	34.6	58.0	68.4	70.0	73.8	72.4	61.1	49.8	37.6	34.0	51.2	95	— 7	Apr. 9	Sept. 20
Morrisonville	30.8	33.3	37.3	60.2	68.4	71.6	74.9	73.8	63.7	52.8	42.8	35.8	53.8	95	— 3	Apr. 4	Sept. 20
Mount Pulaski	29.6	31.3	36.4	59.8	70.4	72.2	74.2	74.8	64.5	53.0	42.0	35.5	53.6	97	— 2	Apr. 8	Sept. 23
Mount Vernon	37.8	39.2	41.7	63.7	71.6	73.7	78.6	77.4	66.9	56.0	47.5	41.1	58.0	99	6	Apr. 4	Oct. 18
New Burnside	35.3	39.2	41.8	66.0	73.8	75.6	80.1	80.2	69.5	[c]55.8	49.2	41.1	59.0	104	4	Apr. 4	Sept. 23
Olney (a)	34.8	36.1	40.5	64.1	72.5	74.8	79.0	78.2	68.8	55.1	47.1	38.6	57.4	100	2	Apr. 4	Oct. 18
Oregon	26.2	24.2	30.5	54.8	66.7	69.0	73.0	72.0	59.4	46.4	34.6	29.0	48.8	97	—15	Apr. 10	Sept. 20
Oswego (a)	25.1	23.4	30.0	53.4	66.1	68.5	72.4	71.7	58.7	45.0	35.3	30.1	48.3	98	—14	Apr. 8	Sept. 20
Ottawa	26.0	26.0	32.6	56.7	68.7	70.4	74.4	73.4	61.2	[d]48.4	37.8	32.0	50.6	100	— 9	Apr. 10	Sept. 20
Palestine	32.5	33.6	37.6	61.1	70.8	73.7	77.4	75.2	64.6	52.9	45.7	37.8	55.2	97	— 1	Apr. 7	Sept. 24
Paris	.....	35.4	36.8	59.8	72.6	74.0	78.3	77.4	67.0	.....	.....	.....	.....	.....	.....	Apr. 8	Sept. 23
Peoria	30.7	30.2	37.4	60.2	72.2	74.3	78.2	76.7	64.6	53.0	39.8	36.8	54.5	101	— 4	Apr. 4	Oct. 21
Philo	28.2	31.1	34.4	58.0	68.9	71.6	74.4	73.2	63.0	49.6	40.2	33.9	52.2	97	— 8	Apr. 10	Sept. 20
Plumhill (c)	.....	34.7	38.8	61.4	71.1	73.7	[e]77.8	74.7	[e]65.0	[e]54.3	[e]40.1	39.6	.....	.....	.....	Apr. 3	Oct. 18
Rantoul (a)	28.3	29.5	33.9	56.6	68.6	71.0	74.6	73.5	62.1	51.0	40.8	33.9	52.0	100	— 7	Apr. 10	Sept. 20
Reynolds	26.4	26.6	32.6	57.0	67.6	69.9	73.2	71.7	60.0	48.9	36.0	32.2	50.1	94	— 8	Apr. 9	Sept. 20
Riley	24.2	22.9	28.6	53.4	65.6	67.6	71.4	70.8	58.6	46.1	33.8	28.3	47.6	95	—14	Apr. 10	Sept. 23
Robinson (a)	31.2	31.4	35.1	58.3	69.0	71.2	74.8	76.2	63.6	48.3	42.4	34.1	53.0	97	— 2	Apr. 4	Oct. 19
Rockford	25.6	24.4	30.5	54.4	69.0	69.9	75.6	74.5	61.5	51.6	36.4	30.0	50.3	100	—10	Apr. 7	Sept. 23
Rosehill (a)	32.2	32.1	36.7	60.3	71.4	75.0	76.5	79.0	71.8	.....	45.8	38.9	.....	102	0	Apr. 8	Oct. 21
Roundgrove	.....	.....	.....	56.9	68.4	71.5	73.8	73.1	60.6	48.4	36.0	30.6	.....	.....	.....	Apr. 10	Sept. 20
Rushville	29.0	30.0	36.3	59.6	70.3	72.4	76.2	75.3	62.4	52.0	39.5	35.6	53.2	99	— 3	Apr. 4	Sept. 20
St. Charles (a)	28.2	24.9	31.7	53.6	66.7	68.9	72.3	72.2	59.2	45.4	36.4	31.9	49.3	96	—14	Apr. 8	Sept. 23
St. John (a)	34.9	38.2	39.3	63.9	73.7	74.2	79.5	79.4	67.3	55.6	44.9	38.0	57.4	100	5	Apr. 3	Sept. 20
Scales Mound	25.2	26.2	31.6	54.5	67.4	68.8	72.0	70.9	58.5	45.0	32.8	28.7	48.4	98	—10	Apr. 7	Sept. 20
*Springfield	30.4	32.0	36.2	60.0	70.0	72.2	75.2	75.0	64.1	52.6	41.0	36.2	53.7	98	— 4	Apr. 4	Oct. 8
Streator	28.2	27.8	31.4	57.4	68.8	71.8	75.8	73.7	64.2	50.6	38.4	34.2	51.9	96	— 8	Apr. 9	Sept. 20
Sycamore (c)	26.0	23.9	30.8	53.7	66.2	67.5	71.2	70.7	58.2	46.8	35.1	28.8	48.2	96	—12	Apr. 22	Sept. 20
Tiskilwa (c)	25.8	24.4	31.2	54.2	67.2	70.0	73.6	71.0	58.0	44.8	33.7	30.0	48.7	96	— 8	Apr. 8	Oct. 18
Tuscola (a)	30.9	32.3	36.2	59.6	69.2	72.3	75.1	73.0	63.5	50.0	42.0	35.2	53.3	99	— 5	Apr. 4	Sept. 20
Walnut (a)	27.4	27.8	33.6	57.0	68.7	70.2	75.0	74.0	62.6	50.0	38.0	32.2	51.3	97	—10	Apr. 8	Sept. 20
Wheaton (c)	24.2	22.9	29.2	52.8	65.2	68.0	70.2	69.7	56.6	42.8	34.9	29.4	47.2	.....	— 8	Apr. 8	Sept. 23
Winnebago	25.4	23.4	30.4	53.6	66.0	68.0	71.7	71.0	58.6	46.3	34.8	29.8	48.2	96	—13	Apr. 22	Sept. 20
Zion	24.5	25.0	30.1	54.2	65.0	67.8	70.6	69.2	.....	48.0	34.8	29.3	.....	96	—13	Apr. 10	Sept. 19
Indiana.																	
Anderson	28.6	31.4	34.2	58.3	68.7	70.2	73.4	72.4	62.9	50.8	45.0	34.5	52.5	93	—10	Apr. 10	Sept. 23
Angola (a)	26.0	27.6	31.3	55.4	67.6	70.5	72.8	71.5	60.4	48.3	40.1	31.8	50.3	101	—10	Apr. 10	Sept. 23
Auburn	.....	.....	.....	.....	.....	.....	72.9	71.6	60.0	[e]46.4	[e]42.3	30.8	.....	.....	.....	.....	Sept. 20
Bedford	32.8	34.5	.....	.....	.....	.....	.....	.....	65.2	51.4	.....	.....	.....	.....	.....	.....	Oct. 6
Bloomington	.....	35.8	38.9	61.5	70.2	72.5	77.0	74.8	64.6	51.9	45.7	37.0	.....	98	.....	Apr. 10	Oct. 18
Bluffton	26.4	29.8	32.8	56.9	68.3	70.5	73.7	72.4	62.2	48.4	42.2	32.2	51.3	98	—12	Apr. 10	Sept. 23
Bright	.....	.....	.....	.....	.....	.....	.....	.....	[e]67.8	52.9	47.5	36.4	.....	.....	.....	.....	Oct. 8
Butlerville	32.2	33.8	37.1	61.5	69.9	72.2	75.7	74.5	65.0	51.9	46.9	36.6	54.8	97	— 8	Apr. 10	Sept. 23
Cambridge City	28.5	31.1	33.9	57.5	67.4	69.2	73.0	70.6	60.8	49.0	43.6	33.9	51.5	92	— 8	Apr. 8	Sept. 20
Columbia City (a)	25.7	27.6	31.6	55.4	68.0	69.3	72.0	70.6	60.8	47.1	40.4	31.5	50.0	93	—12	Apr. 7	Sept. 20
Columbus	30.1	32.8	36.3	59.4	68.9	71.2	74.8	73.2	63.0	50.8	45.3	36.1	53.5	96	— 6	Apr. 10	Sept. 24
Connersville	29.7	31.6	33.5	58.4	68.6	70.4	73.7	71.5	61.8	49.4	43.9	34.1	52.2	97	— 7	Apr. 7	Sept. 23
Delphi	26.7	28.8	33.1	54.4	64.8	67.3	74.6	73.8	63.5	49.8	42.6	32.7	51.0	97	—11	Apr. 7	Sept. 23
Edwardsville (a)	35.4	36.1	39.6	64.8	72.4	73.4	77.4	77.1	68.8	55.0	49.0	40.5	57.4	94	— 1	Apr. 4	.....
*Evansville	33.8	36.4	40.4	64.4	71.7	74.7	79.0	77.6	68.2	54.6	47.2	39.1	57.2	101	2	.....	Oct. 19
Farmland	29.5	30.6	33.8	58.6	68.0	68.7	73.0	70.8	.....	48.9	43.7	34.7	.....	92	— 6	Apr. 7	Sept. 20
Franklin (a)	30.6	32.6	35.4	59.5	69.8	.....	.....	.....	63.5	51.4	44.3	36.1	.....	.....	.....	Apr. 3	Sept. 20
Greencastle	28.8	31.2	33.8	58.5	69.0	70.8	73.9	72.8	62.9	51.3	43.0	35.2	52.6	92	— 5	Apr. 4	Oct. 8
Hammond	23.3	26.8	33.3	55.1	66.7	70.2	73.5	73.2	60.0	45.8	38.2	32.6	49.8	101	—12	Apr. 7	Sept. 19
Huntington	26.4	28.3	31.7	56.8	68.0	69.4	73.4	72.3	61.1	48.7	40.4	32.5	50.8	98	—10	Apr. 22	Sept. 19
*Indianapolis	30.0	32.4	36.0	60.0	70.8	72.3	75.9	74.7	64.2	52.2	44.6	36.1	54.1	98	— 5	Apr. 8	Oct. 3
Jasper	34.8	36.8	40.2	63.2	70.9	72.6	77.8	77.8	67.6	53.3	47.4	38.7	56.8	100	— 5	Apr. 4	Oct. 18
Jeffersonville	36.1	37.3	39.7	63.7	71.8	73.4	77.9	76.8	67.1	54.2	49.5	39.5	57.2	97	3	Apr. 4	Oct. 8
Knightstown	.....	.....	.....	59.9	69.6	71.2	74.5	73.0	63.2	50.0	44.1	34.6	.....	95	.....	Apr. 10	Sept. 24
Kokomo	28.2	30.6	34.7	58.4	69.9	72.3	75.7	73.6	64.0	50.3	43.4	34.6	52.9	98	— 8	Apr. 8	Sept. 24
Laconia	34.6	.....	.....	.....	.....	74.8	78.3	76.5	.....	53.4	.....	38.5	.....	.....	.....	.....	Oct. 18
Lafayette	28.0	30.0	34.2	57.9	69.0	70.5	74.5	72.9	63.2	50.3	42.7	34.4	52.3	95	—12	Apr. 7	Sept. 20
Logansport	29.0	32.9	35.6	59.7	68.4	69.6	73.0	71.8	61.1	48.3	39.8	32.5	51.9	94	— 8	Apr. 7	Oct. 26
Madison	34.6	35.9	39.4	63.2	71.4	73.2	76.8	75.3	66.9	54.2	48.1	38.6	56.4	.....	.....	Apr. 8	Oct. 8
Marengo (a)	34.4	34.9	39.4	62.8	70.3	72.6	77.5	.....	66.6	53.3	48.8	38.0	.....	.....	— 8	Apr. 7	Sept. 24
Marion	28.8	30.8	34.1	57.4	69.0	70.4	70.7	72.4	62.4	50.1	44.1	34.1	52.0	96	—12	Apr. 8	Sept. 24
Mauzy	28.6	31.3	33.3	58.2	68.9	70.7	73.8	[e]72.0	62.1	49.2	43.0	33.6	52.1	92	— 8	Apr. 4	Sept. 24
Mount Vernon	33.9	37.1	42.5	64.7	72.6	74.3	79.3	80.2	68.4	56.1	49.2	40.3	58.2	102	6	Apr. 4	Oct. 19
Northfield	.....	.....	33.8	56.9	68.4	70.4	73.7	71.9	61.7	48.8	42.8	33.2	.....	94	.....	Apr. 10	Sept. 24
Princeton (a)	34.8	35.7	39.2	60.6	69.2	72.6	77.2	75.3	66.0	52.2	45.9	38.3	55.6	100	2	Apr. 4	Oct. 18
Rockville	29.2	31.9	35.3	59.5	69.5	70.5	73.6	73.4	63.9	51.2	43.3	35.4	53.1	97	— 5	Apr. 10	Sept. 23
Scottsburg (a)	33.3	34.1	38.5	62.5	70.6	72.9	77.8	75.3	66.2	.....	47.8	38.6	.....	.....	.....	Apr. 7	Sept. 24
Seymour	30.6	33.2	36.4	60.4	71.0	72.7	76.8	75.4	65.1	52.9	45.0	36.9	54.7	98	0	Apr. 8	Oct. 18
Southbend	26.4	27.1	31.2	55.6	67.3	68.7	72.2	72.0	61.3	48.8	40.6	31.9	50.3	96	—10	Apr. 10	Sept. 23
Sunman	29.1	30.9	34.2	58.8	68.6	69.6	73.3	71.6	62.6	49.7	44.3	34.3	52.2	92	— 6	Apr. 8	Sept. 23
Terre Haute	32.6	34.7	38.1	61.8	.....	73.6	77.3	77.2	67.0	55.0	44.2	38.9	.....	100	— 1	Apr. 4	Oct. 19
Tipton	28.6	32.2	[e]35.0	.....	.....	.....	75.7	74.7	64.0	52.4	43.2	34.2	.....	100	—14	.....	Sept. 23
Topeka	.....	.....	.....	.....	.....	.....	.....	.....	.....	48.1	40.6	30.3	.....	.....	.....	.....	Oct. 27

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896.—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Indiana—Continued.																	
Valparaiso	24.7	25.1	30.8	54.6	66.7	69.6	73.4	72.1	60.9	48.3	39.7	32.2	49.8	96	—12	Apr. 10	Sept. 22
Vevay	34.4	35.8	37.9	63.4	72.8	75.5	78.8	77.9	68.0	54.0	48.9	41.3	57.4	98	0	Apr. 2	Oct. 25
Vincennes	31.7	33.8	36.7	63.9	73.0	73.7	77.0	75.6	65.0	.....	48.1	37.6	.....	104	0	Apr. 5	Sept. 23
Warsaw	.....	.....	.....	.....	.....	.....	.....	71.0	62.8	49.8	40.4	33.4	.....	.....	.....	.....	.....
Washington	.....	.....	.....	.....	.....	71.9	76.8	76.2	66.0	54.8	48.6	40.0	.....	98	.....	.....	.....
Worthington	31.4	34.5	38.0	61.4	70.6	71.6	75.2	74.2	64.4	52.7	46.0	36.8	54.7	96	— 2	Apr. 10	Oct. 7
Indian Territory.																	
Healdton	43.0	46.8	51.0	67.8	77.4	81.9	84.9	87.4	*76.6	61.8	51.6	45.0	64.6	115	6	Apr. 4	Nov. 5
Kemp	42.9	47.2	52.5	68.8	78.6	83.3	.....	.....	77.2	.....	.....	.....	.....	.....	.....	Apr. 2	.....
Lehigh	42.2	46.4	51.0	67.3	76.0	79.9	85.0	86.2	76.9	61.7	51.0	45.8	64.1	111	8	Apr. 4	Oct. 18
Purcell	38.3	42.2	45.6	62.6	72.6	80.6	*79.0	84.8	72.6	63.6	.....	.....	.....	112	2	Apr. 5	.....
South McAlester	40.0	42.8	46.2	70.6	.....	78.6	.....	.....	.....	.....	*46.8	41.2	.....	.....	.....	Apr. 4	.....
Tahlequah	40.8	43.6	46.6	63.4	72.0	*80.8	85.8	[84.0]	74.6	61.0	51.2	46.8	[62.5]	[110]	8	Apr. 3	Sept. 29
Vinita	39.4	41.8	45.8	66.0	73.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 3	.....
Iowa.																	
Afton	25.6	29.6	32.7	56.8	66.4	70.4	74.2	71.9	59.8	49.8	33.2	33.3	50.3	98	—10	Apr. 5	Sept. 20
Algona (a)	20.6	26.1	27.8	51.5	64.5	70.1	72.5	71.2	56.6	45.3	23.2	28.5	46.5	98	—13	Apr. 8	Sept. 19
Alta	21.0	26.6	26.8	50.7	63.2	68.9	70.6	70.4	57.9	46.5	22.2	27.6	46.0	95	—14	Apr. 4	Sept. 19
Amana	23.2	25.2	31.2	55.6	66.7	70.2	72.8	71.4	58.4	47.4	31.6	30.8	48.7	96	—10	Apr. 8	Sept. 20
Ames (b)	.....	.....	.....	.....	64.6	70.0	72.0	.....	56.4	46.8	30.4	30.6	.....	.....	.....	.....	Sept. 19
Atlantic	24.8	28.5	30.4	53.9	63.4	69.6	73.2	72.0	58.9	47.8	28.8	31.8	48.6	97	— 8	Apr. 22	Sept. 28
Atlantic (near)	.....	.....	.....	54.8	65.4	70.5	73.4	*76.0	.....	.....	29.4	32.6	.....	.....	.....	Apr. 6	.....
Audubon	25.2	28.2	29.6	53.0	63.4	67.3	69.6	69.7	56.2	46.2	26.9	31.0	47.2	95	—12	Apr. 6	Sept. 18
Belknap	24.9	28.6	34.2	60.0	65.8	70.7	73.0	73.4	61.7	54.2	.....	.....	.....	99	— 6	Apr. 5	Oct. 7
Belle Plaine	22.0	25.6	30.7	53.2	65.0	69.4	72.0	69.3	56.8	44.6	29.8	31.2	47.5	97	—15	Apr. 9	Sept. 20
Bonaparte	27.0	28.2	35.0	58.7	68.9	71.2	75.6	74.0	61.0	50.9	35.9	33.9	51.7	100	— 8	Apr. 5	Sept. 20
Carroll	22.8	26.9	29.2	53.0	64.2	69.2	71.8	70.8	57.4	46.4	25.1	29.7	47.2	98	—12	Apr. 9	Sept. 19
Cedarfalls	22.0	26.6	31.8	51.6	65.5	69.2	73.0	70.8	57.1	47.4	28.8	30.6	47.9	98	—14	Apr. 9	Sept. 20
Cedar Rapids	25.0	26.8	33.7	59.2	69.8	73.2	74.2	71.8	59.1	47.6	31.7	30.3	50.2	100	—10	Apr. 9	Sept. 20
Centerville	.....	35.0	.....	.....	68.3	70.7	74.0	73.7	62.6	51.6	.....	.....	.....	.....	.....	.....	Oct. 7
Chariton (a)	26.6	30.0	33.0	57.0	66.5	69.8	73.2	72.4	59.5	49.6	33.8	34.0	50.4	94	— 8	Apr. 5	Sept. 20
Charles City	20.0	23.6	28.7	52.9	64.9	69.2	71.7	73.6	57.0	45.7	25.8	27.9	46.8	100	—16	Apr. 9	Sept. 20
Clarinda	24.0	28.6	30.2	54.3	61.8	68.4	73.7	73.8	61.5	51.0	32.9	35.8	49.8	96	—10	Apr. 6	Sept. 28
Clinton	25.2	25.4	32.3	57.3	69.0	71.3	74.4	72.8	60.1	48.2	35.1	30.6	50.1	97	—12	Apr. 10	Sept. 20
College Springs	27.2	32.8	36.0	.....	*66.6	70.2	74.0	.....	61.8	52.7	35.2	36.0	.....	96	— 8	.....	Oct. 17
Corning	26.5	30.9	33.6	56.5	66.2	70.4	72.7	71.1	59.2	49.1	31.1	34.6	50.2	97	— 8	Apr. 6	Sept. 28
Cresco	16.7	21.7	26.2	50.2	62.9	66.3	69.4	69.1	55.4	44.8	24.0	24.8	44.3	96	—20	Apr. 21	Sept. 20
*Davenport	26.6	26.7	33.0	57.1	68.4	70.7	74.6	73.1	60.6	49.8	35.8	32.8	50.8	96	— 8	Apr. 30	Oct. 7
Decorah	18.4	23.2	28.3	52.8	64.4	68.4	70.1	69.6	55.2	45.6	27.0	27.0	45.9	98	—18	Apr. 22	Sept. 20
Delaware (c)	19.9	22.6	28.6	51.7	64.8	68.6	71.2	70.2	56.4	43.6	29.1	27.9	46.2	99	—14	Apr. 8	Sept. 20
Denison	23.0	27.4	27.8	.....	65.8	71.0	73.0	71.6	57.9	48.2	28.5	32.5	.....	101	—11	.....	Sept. 18
*Des Moines	25.0	29.8	32.2	56.0	66.5	70.1	73.2	72.7	59.6	50.6	32.0	34.0	50.1	95	— 8	Apr. 8	Sept. 28
Dows	20.7	25.5	28.4	53.3	63.7	68.2	71.3	68.9	56.8	47.6	30.5	27.1	46.8	96	—16	Apr. 22	Sept. 19
*Dubuque	24.3	27.1	31.6	55.0	68.0	70.9	73.4	72.6	59.6	49.0	33.0	30.4	49.6	99	—10	Apr. 8	Sept. 20
Eldora	.....	.....	.....	.....	65.0	69.4	73.0	72.5	58.7	48.8	28.0	30.6	.....	.....	.....	.....	Sept. 20
Elkader	20.8	24.4	29.5	52.4	65.6	69.2	71.8	70.5	56.4	45.7	28.6	28.1	46.9	100	—14	Apr. 22	Sept. 20
Emmetsburg	18.9	24.4	25.6	49.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 21	.....
Estherville	20.6	25.3	26.8	50.2	62.6	69.8	.....	71.8	56.8	45.0	21.6	25.7	.....	.....	—14	Apr. 21	Sept. 19
Fairfield	26.0	27.0	32.8	57.6	66.1	69.6	71.9	70.9	59.2	46.8	33.6	*34.0	49.6	95	— 8	Apr. 8	Sept. 20
Fayette	20.2	24.5	29.2	51.6	64.7	68.0	71.6	69.8	56.7	45.4	29.4	28.6	46.6	98	—15	Apr. 22	Sept. 19
Fonda	.....	.....	.....	.....	.....	72.9	74.2	73.5	60.0	.....	.....	.....	.....	.....	.....	.....	Sept. 20
Forest City	17.2	22.6	26.5	50.1	63.0	68.1	69.9	70.7	56.2	44.8	21.8	24.9	44.6	96	—15	Apr. 21	Sept. 20
Fort Madison (a)	30.7	31.6	38.8	61.6	71.8	73.2	77.0	75.6	62.8	52.8	39.6	36.8	54.4	95	— 2	Apr. 3	Oct. 7
Galva	.....	27.4	29.2	52.5	64.2	68.2	71.8	71.4	57.7	46.2	23.4	30.4	.....	100	—12	Apr. 8	Sept. 18
Gardengrove	23.6	27.0	31.6	56.0	65.2	69.3	72.2	70.9	58.0	47.6	31.4	33.0	48.8	96	—11	Apr. 9	Sept. 30
Glenwood	.....	.....	33.8	58.0	68.0	73.6	74.3	72.0	59.6	49.0	29.2	34.0	.....	98	.....	Apr. 6	Sept. 28
Grand Meadow (a)	19.5	23.1	27.7	51.2	62.9	66.9	68.9	68.4	55.1	44.4	27.7	27.5	45.3	96	—14	Apr. 9	Sept. 19
Greenfield	25.6	29.6	31.4	55.9	65.3	71.0	73.8	71.7	59.8	49.2	31.0	32.4	49.7	97	—12	Apr. 6	Sept. 20
Grinnell	23.9	27.2	32.0	56.9	67.4	.....	.....	.....	.....	49.6	30.5	31.4	.....	.....	— 9	Apr. 4	.....
Grundy Center	20.8	25.9	29.8	*52.1	64.0	68.0	70.5	70.0	56.5	47.0	27.2	29.0	46.7	97	—16	Apr. 9	Sept. 20
Guthrie Center	*27.6	29.2	30.8	52.4	65.6	69.4	73.0	72.2	57.4	46.7	.....	.....	.....	96	.....	Apr. 6	Sept. 19
Hampton	18.6	24.3	27.9	50.7	63.5	68.4	71.4	70.6	56.7	46.2	24.6	27.7	45.9	96	—15	Apr. 21	Sept. 20
Hopeville	25.4	29.2	32.5	56.7	65.9	69.3	72.6	71.4	60.2	50.0	31.9	33.4	49.9	94	—10	Apr. 6	Oct. 17
Humboldt	21.8	27.5	29.2	52.9	66.1	71.2	73.0	71.3	58.1	47.5	25.8	30.2	47.9	99	—12	Apr. 21	Sept. 19
Independence	20.4	24.2	30.0	52.4	63.4	66.8	70.8	68.7	56.0	45.6	29.5	28.2	46.3	96	—15	Apr. 22	Sept. 22
Indianola	25.4	30.2	32.6	57.7	66.4	70.0	70.8	72.3	60.2	51.2	32.8	35.7	50.4	95	—12	Apr. 6	Sept. 20
Iowa City[1]	25.7	27.0	33.6	57.1	67.8	71.8	75.0	72.2	59.6	48.6	33.8	33.2	50.4	98	—11	Apr. 6	Sept. 20
Iowa City[2]	25.4	26.8	32.8	55.6	65.8	68.5	72.8	71.8	60.2	48.9	36.6	33.5	49.9	93	—10	Apr. 9	Sept. 20
Iowa Falls	19.6	25.0	28.8	50.4	63.8	66.6	68.8	67.7	54.8	46.1	27.2	29.1	45.6	94	—19	Apr. 22	Sept. 20
*Keokuk	28.8	30.0	36.0	60.0	70.2	72.1	75.8	75.0	62.5	52.0	38.2	36.0	53.0	98	— 8	Apr. 4†	Oct. 20
Keosauqua	28.0	29.4	35.4	59.4	69.2	72.2	75.8	74.2	61.8	51.2	35.4	.....	.....	97	.....	Apr. 5	Oct. 21
Knoxville	25.2	28.2	33.0	56.8	67.4	71.0	73.8	72.4	60.2	45.3	33.1	33.1	50.0	97	—10	Apr. 5	Oct. 17
Lansing	.....	.....	.....	.....	.....	*70.5	72.4	71.0	57.9	47.4	32.0	28.2	.....	99	.....	.....	Sept. 20
Larrabee	22.5	28.4	27.4	52.2	63.0	67.8	70.9	71.6	56.5	45.6	21.8	27.8	46.3	98	—14	Apr. 21	Sept. 19
Lemars	.....	.....	32.8	53.8	65.0	69.8	72.0	73.6	62.4	50.4	23.9	29.1	.....	97	.....	Apr. 7	Sept. 19
Lenox (a)	26.3	30.8	33.0	57.4	66.2	70.7	73.5	72.0	59.9	50.0	32.4	34.4	50.5	97	— 7	Apr. 3	Sept. 20
Logan	23.1	30.5	30.9	53.9	64.0	70.1	73.0	72.2	58.8	48.3	28.5	31.4	48.7	99	— 9	Apr. 6	Sept. 19
Madrid	21.8	28.3	31.1	50.7	62.3	70.6	74.6	74.2	59.4	51.0	28.0	31.7	48.6	104	—17	Apr. 8	Sept. 20
Malvern (a)	25.0	30.7	32.2	55.6	65.4	71.2	74.5	73.2	60.1	48.4	25.9	32.2	49.5	104	—12	Apr. 6	Sept. 20
Maquoketa	.....	.....	.....	.....	.....	69.2	73.0	71.2	58.2	.....	*31.2	30.5	.....	.....	.....	.....	.....
Marshall	21.6	26.0	*29.2	53.4	64.4	68.8	72.2	71.3	*57.4	48.4	29.4	27.8	47.5	99	—13	Apr. 8	Sept. 19
Mason City	.....	.....	*27.6	51.0	62.4	.....	*70.4	70.6	55.1	43.4	25.8	26.0	.....	94	.....	Apr. 22	Sept. 19
Maxon (a)	26.4	28.9	33.2	58.9	69.4	72.6	75.8	74.3	60.4	.....	.....	.....	.....	97	.....	Apr. 8	.....
Mechanicsville	23.9	25.3	31.4	54.4	66.0	69.4	72.4	70.8	58.6	47.2	32.1	29.6	48.4	96	—10	Apr. 10	Oct. 7
Monticello (a)	19.9	21.3	27.6	50.7	63.3	66.8	69.3	70.0	57.1	45.3	31.5	29.9	46.0	93	—12	Apr. 9	Sept. 20

[1] A. A. Veblen.

* Mrs. C. M. Hobby.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Iowa—Continued.																	
Mooar	.....	.....	.....	.....	67.4	69.2	73.3	72.6	59.0	48.9	35.4	33.8	.....	99	.....	.....	Sept. 19
Mountayr	26.4	29.6	33.5	57.2	67.2	70.8	74.9	72.4	60.5	50.6	32.9	33.6	50.8	100	—10	Apr. 4	Sept. 20
Mount Pleasant (*a*)	28.1	28.5	34.5	58.7	69.6	73.2	.....	74.8	61.8	51.4	37.5	35.1	.....	94	— 7	Apr. 3	Oct. 20
Mount Vernon (*a*)	23.9	25.5	31.6	56.0	66.6	71.1	74.9	72.4	59.7	45.0	32.4	31.0	49.2	96	—15	Apr. 4	Oct. 18
Neola	25.4	.....	.....	57.4	65.6	.....	75.8	72.0	58.8	48.0	26.2	30.4	.....	.....	.....	Apr. 6	Sept. 18
Newton	24.0	27.7	32.0	55.6	65.2	70.2	72.8	70.9	57.7	48.6	30.2	31.5	48.9	96	—10	Apr. 9	Sept. 20
Northwood	.....	.....	.....	50.1	62.7	67.2	69.2	67.4	55.7	46.2	23.2	27.5	.....	96	.....	Apr. 22	Sept. 19
Ogden	23.9	28.8	31.2	54.4	64.8	70.0	73.0	72.3	58.6	48.2	29.5	31.6	48.9	99	—15	Apr. 9	Sept. 22
Osage (*c*)	17.8	22.0	25.8	48.4	61.8	66.6	69.4	67.0	52.4	40.8	22.6	24.9	43.3	.....	—16	Apr. 21	Sept. 19
Osceola	.....	.....	.....	.....	66.4	70.5	73.1	72.8	60.5	49.9	32.7	34.6	.....	.....	.....	.....	Oct. 7
Oskaloosa	24.8	27.8	32.9	58.0	65.8	69.3	72.8	71.1	59.0	50.8	33.8	34.8	50.1	98	—10	Apr. 3	Sept. 20
Ottumwa	27.1	29.3	33.8	58.8	68.3	71.4	74.6	73.8	60.4	51.0	35.0	34.4	51.5	97	— 7	Apr. 4	Sept. 20
Ovid	25.6	28.7	33.3	57.0	66.0	69.8	73.6	72.4	60.4	51.6	33.7	34.8	50.6	95	— 8	Apr. 6	Sept. 20
Panama	21.2	29.2	31.0	54.0	64.6	67.9	72.5	71.9	58.8	49.1	28.4	.....	.....	95	.....	Apr. 6	Sept. 19
Portsmouth	27.2	30.2	[e]29.1	58.2	66.2	71.2	75.0	73.3	59.6	.....	31.0	34.8	.....	103	— 9	Apr. 6	Sept. 19
Primghar	22.0	27.4	27.2	51.0	63.2	69.2	72.2	72.6	58.5	46.1	[d]21.4	27.0	46.5	97	—14	Apr. 21	Sept. 18
Rock Rapids	22.6	23.0	25.4	46.0	58.5	64.8	71.4	70.7	54.4	41.2	17.6	27.2	43.5	101	—18	May 19	Sept. 19
Sac City	22.5	27.4	28.2	52.8	64.6	70.8	72.6	71.4	58.4	47.0	25.1	29.7	47.6	102	—12	Apr. 6	Sept. 19
St. Charles	.....	.....	.....	.....	.....	.....	.....	[g]71.0	57.6	49.6	31.3	32.2	.....	.....	.....	.....	Oct. 7
Seymour	25.8	31.0	34.4	57.6	67.4	71.0	74.1	74.0	61.1	52.4	35.2	34.0	51.5	95	— 8	Apr. 8	Oct. 7
Sibley	.....	26.3	26.2	48.8	61.8	66.6	69.2	68.6	56.0	43.5	20.6	25.4	.....	94	—13	Apr. 21	Sept. 19
Sidney	25.8	31.6	32.8	56.2	66.8	70.2	74.8	73.0	61.0	50.8	30.8	35.6	50.8	96	— 8	Apr. 3	Sept. 28
Sigourney	.....	27.6	32.4	57.0	68.4	.....	.....	74.0	60.7	49.4	[c]32.9	32.6	.....	.....	.....	Apr. 9	Sept. 20
*Sioux City	22.9	28.4	27.2	51.8	64.4	69.6	72.4	71.8	58.5	47.1	22.4	30.0	47.2	98	—10	Apr. 19	Sept. 19
Spencer	[f]23.8	27.9	[c]26.0	.....	63.1	68.3	71.4	70.7	56.4	44.5	20.8	26.8	.....	97	.....	.....	Sept. 20
Spirit Lake	19.0	24.9	25.6	49.4	61.5	67.6	71.6	71.1	57.4	44.4	19.2	25.8	44.8	101	—14	Apr. 21	Sept. 19
Stuart	.....	.....	.....	.....	66.0	70.2	71.6	.....	.....	.....	31.6	.....	.....	.....	.....	.....	.....
Toledo	21.1	25.4	31.0	54.6	64.8	69.0	72.3	70.3	57.0	46.9	29.0	29.8	47.6	96	—12	Apr. 9	Sept. 20
Villisca	24.3	30.0	31.4	55.6	64.7	69.6	72.2	71.3	59.0	48.4	31.2	32.9	49.2	94	— 9	Apr. 6	Sept. 20
Vinton (*a*)	23.4	26.0	31.5	54.1	65.6	69.9	72.8	70.8	57.4	46.6	30.9	31.5	48.4	95	—10	Apr. 6	Sept. 20
Washington	25.2	26.4	32.5	57.2	67.6	69.9	73.4	72.2	59.7	[h]51.9	33.5	.....	.....	95	.....	Apr. 9	Sept. 20
Waterloo	20.6	24.9	30.3	53.5	65.8	70.4	72.6	71.4	57.8	48.0	29.0	28.5	47.7	97	—14	Apr. 19	Sept. 20
Waukee	27.6	.....	33.4	57.7	66.6	70.6	73.7	73.2	60.2	46.7	.....	.....	.....	.....	.....	Apr. 9	Sept. 20
Waverly	18.8	25.4	29.8	53.6	66.5	68.8	71.4	70.6	57.2	47.0	27.6	28.7	47.1	95	—13	Apr. 9	Sept. 20
Webster City	.....	.....	.....	.....	.....	70.4	72.4	71.2	56.8	46.9	27.0	29.8	.....	.....	.....	.....	Sept. 20
Westbend (*a*)	19.9	24.2	26.2	49.6	62.4	68.4	71.4	69.7	55.2	43.4	21.9	27.0	44.9	97	—11	Apr. 9	Sept. 19
Wilton Junction	26.0	25.6	32.1	56.6	67.4	69.8	74.0	71.2	60.6	47.7	34.4	31.2	49.8	98	—13	Apr. 8	Sept. 20
Winterset	22.9	28.3	30.8	56.0	65.2	68.9	71.6	70.9	57.0	49.4	31.2	32.4	48.7	96	—13	Apr. 9	Sept. 19
Kansas.																	
Abilene	32.0	37.6	38.7	61.2	70.2	73.4	78.7	79.7	66.2	54.3	37.2	40.0	55.8	105	0	Apr. 3	Oct. 20
Achilles (*c*)	33.9	[e]28.8	[e]29.4	49.6	[e]62.8	[e]71.0	[e]73.7	72.8	[f]58.5	43.2	25.2	[e]28.3	48.1	112	—11	Apr. 18	Sept. 28
Altoona (*c*)	34.6	34.5	38.4	62.8	69.6	71.9	77.4	76.7	65.0	51.8	42.9	39.9	55.5	104	6	Apr. 2	Nov. 7
Assaria (*e*)	.....	.....	39.8	60.6	66.3	72.6	78.2	74.0	63.8	52.1	35.0	34.9	.....	103	.....	Apr. 4	Sept. 28
Atchison	30.2	35.0	37.2	59.9	68.0	71.6	76.6	75.8	64.1	54.2	37.0	38.0	54.0	102	— 3	Apr. 3	Oct. 17
Augusta	35.4	39.0	41.8	64.0	71.6	73.4	78.2	80.8	67.7	56.1	41.3	40.2	57.5	106	4	Apr. 2	Sept. 28
Baker	30.0	35.2	36.8	61.0	68.0	70.8	75.0	74.0	61.7	.....	.....	.....	.....	98	.....	Apr. 3	.....
Beloit	30.6	34.9	34.6	60.1	67.4	74.0	77.6	76.0	64.4	52.4	33.8	38.2	53.7	104	— 3	Apr. 9	Oct. 20
Blaine	30.4	34.6	35.4	59.7	67.8	73.5	77.2	74.4	62.4	53.3	34.3	38.2	53.4	101	— 7	Apr. 3	Sept. 19
Burlington	32.2	39.0	42.1	62.8	70.2	73.4	.....	79.4	66.0	.....	.....	.....	.....	.....	.....	Apr. 3	Sept. 28
Campbell	30.0	24.7	34.6	59.9	67.2	72.0	76.0	74.0	63.4	52.2	34.2	37.8	53.0	103	— 5	Apr. 9	Sept. 29
Chanute	.....	.....	.....	.....	70.2	73.6	80.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colby	34.2	36.7	35.7	54.0	63.0	71.4	76.1	74.7	61.5	49.3	32.6	37.2	52.2	103	—11	Apr. 18	Oct. 6
Coldwater	36.2	39.3	41.4	62.0	70.2	78.0	78.4	82.1	71.4	.....	.....	.....	.....	108	.....	Apr. 4	.....
Collyer (*e*)	37.7	41.2	.....	57.4	65.5	73.5	78.8	79.0	64.2	.....	.....	.....	.....	103	.....	Apr. 18	.....
Columbus	34.2	37.8	41.4	62.7	71.0	74.0	78.2	78.0	67.6	54.4	43.5	40.4	56.9	99	5	Apr. 3	Oct. 18
*Concordia	32.5	37.4	36.2	61.0	67.5	73.0	76.9	76.2	64.4	53.4	34.4	40.5	54.4	103	— 3	Apr. 3†	Oct. 14
Coolidge	34.1	36.8	40.8	57.0	66.3	75.9	80.0	79.4	64.8	52.0	35.1	38.0	55.0	107	— 1	Apr. 20	Oct. 14
Cunningham	34.4	38.5	39.8	63.2	72.6	75.4	78.7	82.7	68.2	54.6	38.8	40.9	57.3	112	0	Apr. 9	Sept. 28
Delphos	.....	.....	.....	.....	.....	74.5	78.8	78.2	65.2	52.8	34.6	37.9	.....	.....	.....	.....	Sept. 28
*Dodge City	36.4	39.2	40.0	59.9	68.4	76.2	77.6	79.4	66.2	54.2	38.0	41.1	56.4	104	2	Apr. 18	Oct. 11
Dresden (*a*)	32.7	37.3	35.4	56.8	65.1	71.0	75.1	75.3	62.7	56.3	.....	34.6	.....	105	.....	Apr. 17	Oct. 12
Effingham	.....	37.3	38.5	61.8	[e]69.6	[d]73.2	78.4	77.0	65.3	56.7	39.2	39.2	.....	103	.....	Apr. 3	Sept. 27
Elderado	34.2	39.0	41.8	64.5	72.6	73.4	75.4	77.2	.....	.....	.....	.....	.....	.....	.....	Apr. 3	.....
Elgin	.....	.....	42.0	64.1	71.2	73.5	78.0	79.7	67.7	55.2	42.4	39.2	.....	103	.....	Apr. 2	Sept. 28
Ellinwood (*e*)	30.8	34.7	34.4	57.6	66.6	74.4	77.2	78.4	65.9	53.4	36.9	40.4	54.2	105	1	Apr. 2	Oct. 11
Emporia	34.5	38.2	40.6	61.6	70.4	74.0	77.9	78.8	65.5	54.6	41.4	40.3	56.5	103	2	Apr. 3	Nov. 5
Englewood	37.5	38.8	42.0	62.8	68.5	76.5	80.1	81.4	67.6	54.5	38.4	41.8	57.2	108	0	.....	Oct. 10
Eureka Ranch	33.8	37.4	36.6	58.1	66.8	74.0	78.4	77.2	61.8	51.1	32.7	37.6	53.8	108	— 7	Apr. 19	Oct. 10
Fort Riley	[d]36.6	38.0	38.4	61.9	69.2	71.0	76.0	78.6	66.7	56.3	39.0	[d]40.6	56.1	103	0	Apr. 3	Oct. 17
Fort Scott	.....	.....	.....	.....	.....	73.2	78.0	78.6	66.4	55.2	43.1	38.1	.....	101	.....	.....	Nov. 4
Frankfort	33.0	38.8	39.0	62.6	70.1	73.2	80.0	.....	67.4	57.4	38.0	40.7	.....	.....	— 4	Apr. 6	Sept. 28
Garden City	35.2	37.4	41.0	58.8	[e]66.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 2	.....
Gibson (*e*)	.....	.....	.....	.....	64.1	72.4	74.9	74.9	62.6	49.2	32.4	37.9	.....	102	.....	Apr. 19	Oct. 6
Girard (*a*)	33.7	36.7	40.2	63.4	.....	74.6	79.7	79.9	67.0	56.0	42.6	.....	.....	104	.....	Apr. 3	Nov. 5
Goodland	35.0	35.8	[e]36.4	.....	.....	.....	.....	.....	.....	55.2	34.7	38.4	.....	.....	.....	Apr. 4	Oct. 11
Gove (*a*)	34.0	38.1	35.8	57.7	65.7	74.4	78.0	77.6	64.1	52.0	33.2	39.0	54.1	105	— 4	Apr. 18	Oct. 11
Grainfield (*f*)	41.8	44.3	34.0	58.3	66.3	72.7	75.8	75.5	65.1	54.4	36.4	41.7	55.5	106	— 4	Apr. 18	Oct. 28
Greensburg	36.6	.....	[e]41.8	62.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grenola (*a*)	35.4	38.7	[e]40.7	62.7	67.3	74.0	78.3	79.7	66.7	54.2	40.6	39.8	56.5	103	5	Apr. 3	Oct. 18
Halstead	32.8	35.8	37.1	30.2	68.3	71.0	76.4	78.8	64.5	53.2	38.0	37.5	52.0	107	— 2	Apr. 3	Sept. 28
Hays	32.4	41.6	39.3	58.7	68.2	77.2	79.4	77.8	66.3	53.8	37.6	44.4	54.7	105	—11	Apr. 19	Oct. 11
Horton	30.4	35.2	37.0	60.7	68.0	72.6	77.0	75.5	63.6	53.7	36.6	38.5	54.1	101	— 2	Apr. 3	Sept. 28
Hutchinson	38.2	43.6	41.8	62.7	71.2	74.8	78.4	80.6	68.7	56.6	42.8	43.7	58.5	106	0	Apr. 3	Nov. 7
Independence	35.3	39.4	43.1	65.0	73.4	75.8	81.4	82.8	70.0	57.7	43.9	41.6	59.1	108	6	Apr. 3	Sept. 23
Jaqua	[e]33.1	[f]36.2	[e]37.3	.....	[e]67.4	74.6	78.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lakin	.....	.....	.....	.....	.....	.....	82.2	83.2	.....	57.2	41.2	40.0	.....	.....	.....	.....	Sept. 28
Lawrence	31.8	36.5	39.2	61.4	68.4	71.9	77.1	77.0	65.4	55.5	39.8	39.4	55.3	102	2	Apr. 3	Sept. 22

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Kansas—Continued.																	
Lebo	32.8	37.2	40.8	62.0	71.0	72.8	78.4	79.6	66.4	54.6	39.8	39.4	57.1	105	2	Apr. 3	Nov. 5
Lyons	34.5	41.6	42.4	62.8	[1]72.4	76.6	81.3	.....	66.2	.....	.....	.....	.....	.....	.....	.....	.....
McPherson	33.9	35.0	36.4	63.0	70.2	72.8	77.9	79.9	66.6	54.0	36.3	38.5	55.4	105	0	Apr. 3	Sept. 28
Macksville	33.9	36.6	39.0	59.6	70.4	77.2	79.2	79.7	66.0	53.3	37.0	.....	.....	107	.....	Apr. 4	Oct. 11
Manhattan (*b*)	32.2	37.0	38.0	61.9	69.9	74.4	78.6	78.8	.....	55.3	38.5	39.8	.....	108	— 1	Apr. 6	Sept. 28
Manhattan (*c*)	.....	.....	.....	.....	72.2	76.5	81.4	79.8	.....	55.0	40.0	39.7	.....	110	.....	.....	.....
Marion	.....	.....	.....	63.9	72.0	76.4	80.9	.....	68.0	57.1	40.6	39.8	.....	.....	.....	Apr. 3	Sept. 28
Meade	41.9	43.0	46.0	65.2	73.4	78.2	78.2	83.7	.....	.....	.....	.....	.....	114	.....	Apr. 2	Sept. 27
Medicine Lodge	35.2	39.0	42.2	65.2	74.6	77.6	80.6	82.5	69.2	55.4	40.0	41.0	58.5	110	5	Apr. 2	Sept. 27
Minneapolis	32.3	36.5	37.2	60.9	69.7	73.7	78.7	78.0	65.4	53.5	35.4	39.4	55.1	107	— 2	Apr. 3	Sept. 28
Morantown	32.8	37.8	40.8	62.0	70.2	72.6	78.0	78.2	66.4	55.4	41.6	39.6	56.3	102	4	Apr. 3	Oct. 21
Morland	33.8	39.3	35.7	56.6	.....	.....	75.3	76.6	62.5	.....	.....	38.7	.....	104	— 8	Apr. 4	Sept. 28
Morton	37.6	39.3	42.8	59.2	70.6	78.4	81.2	81.4	67.4	54.2	40.3	40.8	57.8	111	0	Apr. 18	Oct. 11
Mounthope (*a*)	36.8	39.6	41.5	64.0	72.0	75.8	79.7	79.3	67.6	55.3	43.6	41.6	58.1	106	4	Apr. 2	Oct. 11
Ness City	38.6	39.4	40.0	60.0	69.7	76.8	80.5	80.4	67.0	[2]54.1	.....	.....	.....	109	.....	Apr. 18	Sept. 28
New England Ranch	36.6	38.8	[3]35.8	56.7	65.0	70.4	[4]76.3	.....	.....	[5]51.0	.....	.....	.....	.....	.....	Apr. 17	Oct. 4
Norton	28.6	34.9	32.1	54.5	63.4	70.6	72.3	72.6	59.9	.....	.....	34.5	.....	102	— 7	Apr. 17	Sept. 18
Norwich (*a*)	38.1	40.7	41.4	62.8	.....	.....	82.0	82.2	68.8	57.0	40.8	42.4	.....	108	4	Apr. 2	Sept. 28
Olathe	31.0	37.0	39.8	61.6	69.7	72.6	78.4	78.6	65.5	55.9	40.4	40.8	55.9	104	0	Apr. 3	Oct. 16
Osage City	.....	.....	.....	.....	.....	75.2	78.4	77.1	65.4	54.0	39.2	39.0	.....	104	.....	.....	Sept. 27
Oswego	37.4	[6]43.8	44.4	65.5	73.0	76.2	81.2	82.6	70.8	59.6	48.1	43.9	60.5	105	6	Apr. 3	Nov. 5
Ottawa	33.0	39.2	.....	[7]63.6	69.0	72.2	76.1	77.2	65.2	53.4	39.7	39.4	.....	104	2	Apr. 3	Oct. 21
Paola	32.2	36.9	40.2	60.2	69.2	73.3	77.8	78.4	67.4	54.1	41.2	41.0	56.0	103	3	Apr. 3	Oct. 24
Phillipsburg	34.2	37.6	34.0	55.5	64.6	73.8	75.8	75.7	63.0	52.8	32.0	37.2	53.0	108	— 6	Apr. 18	Sept. 30
Pleasant Dale	34.2	39.2	36.9	59.2	68.9	73.6	78.6	78.4	67.0	53.8	.....	.....	.....	105	.....	Apr. 3	Sept. 28
Powhattan	.....	.....	.....	.....	.....	.....	.....	.....	.....	53.2	35.8	38.2	.....	.....	.....	.....	.....
Pratt	34.4	38.0	39.6	61.1	70.4	76.4	76.7	80.2	67.4	55.6	39.4	40.6	56.6	106	0	Apr. 3	Oct. 11
Rome (*a*)	37.0	40.3	41.9	64.4	71.4	74.4	77.7	81.5	68.3	56.3	42.8	41.0	58.1	108	7	Apr. 3	Sept. 28
Russell	34.6	38.9	39.6	60.4	69.2	75.7	78.4	.....	.....	[8]52.6	34.6	.....	.....	.....	.....	Apr. 9	.....
Salina	32.6	37.1	37.7	62.4	70.0	74.2	79.0	79.6	66.2	53.8	36.6	39.0	55.7	105	— 1	Apr. 3	Sept. 28
Scott City	36.6	38.8	38.8	57.9	64.8	74.0	75.8	77.2	63.6	[9]52.8	[9]32.7	[9]38.8	54.3	105	—14	Apr. 18	Sept. 28
Sedan	37.8	41.2	43.8	64.9	71.3	75.4	79.7	81.6	68.9	57.4	42.9	40.6	58.8	109	7	Apr. 2	Nov. 5
Sharon Springs (*a*)	35.9	39.1	37.7	53.1	65.5	76.4	[10]78.0	78.1	65.4	53.4	35.7	40.2	54.9	107	—10	Apr. 18	Oct. 23†
*Topeka	32.4	37.4	39.6	62.8	69.8	73.0	78.2	78.1	65.4	55.8	40.2	41.0	56.1	105	1	Apr. 1	Oct. 18
Ulysses	.....	36.0	39.8	[11]57.9	[11]68.2	[11]77.5	[11]81.6	.....	66.8	[12]52.6	[12]36.2	[12]38.1	.....	.....	.....	Apr. 18	Oct. 11
Wakefield (*a*)	35.4	38.1	38.4	62.1	70.0	75.0	78.8	78.6	69.9	55.5	39.4	.....	.....	107	.....	Apr. 2	Oct. 11
Wallace (*a*)	34.1	37.8	40.2	54.1	68.1	72.0	75.8	72.4	65.2	52.7	33.6	36.2	53.5	103	—18	Apr. 19	Sept. 28
Wamego (*a*)	30.8	35.6	38.1	61.5	68.8	73.7	78.6	77.5	63.6	53.9	39.9	37.4	55.0	106	0	Apr. 3	Oct. 26
Wellington (*a*)	38.0	41.3	44.0	66.1	74.5	77.0	78.8	82.7	70.0	59.2	44.6	43.2	60.0	102	8	Apr. 2	Nov. 7
*Wichita	35.7	40.2	41.4	63.7	71.8	74.2	78.4	81.6	68.3	56.8	41.8	42.4	58.0	106	4	Apr. 2	Sept. 28
Winfield (*c*)	35.6	41.0	41.0	63.4	73.7	76.0	81.4	83.4	69.7	55.4	41.9	39.2	58.5	110	6	Apr. 4	Sept. 28
Winona (*a*)	32.9	40.6	39.8	56.2	67.4	72.8	.....	78.0	61.5	51.4	35.1	40.0	.....	104	— 8	.....	.....
Yates Center	32.4	36.2	40.7	62.6	70.3	73.1	77.6	78.0	67.4	55.2	41.1	38.4	56.1	103	2	Apr. 3	Oct. 21
Kentucky.																	
Alpha	40.6	42.2	44.0	65.4	72.6	74.0	77.9	78.4	71.1	59.7	54.6	43.2	60.3	97	2	Apr. 5†	Oct. 18
Anchorage	35.0	36.0	38.6	62.9	70.8	71.8	.....	[13]76.1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ashland	.....	33.2	36.2	.....	72.8	74.7	.....	.....	.....	51.8	46.2	27.2	.....	.....	.....	.....	Sept. 23
Bardstown	.....	.....	.....	.....	.....	.....	76.7	76.9	68.4	53.7	49.6	38.2	.....	.....	.....	.....	.....
Blandville	35.9	37.9	41.6	64.1	71.1	72.9	77.9	77.0	67.4	56.5	48.2	40.2	57.6	98	3	Apr. 3†	Oct. 18
Bowling Green (*a*)[1]	36.2	37.3	40.5	62.1	68.3	70.1	73.8	74.5	66.0	52.3	48.1	38.3	55.6	97	3	.....	Sept. 24
Bowling Green[2]	36.8	39.0	47.2	65.4	73.8	75.2	79.1	79.0	71.2	58.0	51.0	40.7	59.7	99	4	Apr. 3†	Sept. 24
Caddo	31.6	32.7	37.2	60.9	71.4	72.0	75.0	74.6	67.3	53.8	47.2	37.0	55.1	96	— 5	Apr. 7†	Sept. 23
Canton (*a*)	38.8	41.3	44.8	66.2	72.0	72.6	78.3	78.4	68.4	56.7	50.6	42.7	59.2	100	10	.....	Oct. 17
Carrollton (*a*)	34.8	35.0	38.1	64.8	74.1	75.6	79.0	78.0	68.0	55.6	50.0	39.4	57.7	99	0	Apr. 8†	.....
Earlington	37.4	39.7	42.2	65.4	72.7	73.2	79.0	78.9	69.0	57.2	51.0	42.6	59.0	99	7	Apr. 4†	Oct. 18
Edmonton	37.2	39.2	42.8	62.7	70.1	72.0	[14]77.4	75.5	68.1	55.6	51.0	40.1	57.6	92	2	Apr. 5†	Oct. 18
Eubank	.....	[15]34.3	[15]41.7	63.2	70.8	72.0	[16]76.3	75.4	67.8	56.1	[16]46.0	36.5	.....	99	.....	Apr. 8†	Sept. 24
Forda Ferry	36.0	39.4	42.4	65.9	73.0	74.9	79.8	80.6	70.4	57.2	51.5	41.1	59.4	103	6	Apr. 4†	Oct. 18
Frankfort	36.4	35.9	40.2	62.2	70.4	72.8	75.8	73.9	67.0	53.3	48.7	39.6	56.4	98	— 3	Apr. 7†	.....
Franklin (*a*)	38.4	40.0	44.5	66.0	73.0	74.5	77.7	79.3	71.4	58.4	49.4	40.6	59.4	99	9	.....	Nov. 5
Georgetown	35.4	35.8	39.0	62.8	71.8	73.4	76.6	75.5	67.4	53.8	48.7	38.9	56.6	96	— 7	Apr. 7†	.....
Greendale (*a*)	35.1	34.9	38.1	62.1	71.9	73.3	75.7	75.2	67.2	52.5	.....	.....	.....	94	.....	.....	Oct. 25
Greensburg (*a*)	36.2	36.7	41.6	63.1	[17]72.0	73.3	77.1	77.6	69.4	56.0	50.8	41.9	58.1	96	2	.....	.....
Harrods Creek	35.2	36.5	42.0	61.0	69.5	.....	77.0	77.1	70.9	.....	.....	.....	.....	.....	.....	.....	.....
Henderson	37.4	41.2	.....	66.8	73.5	74.9	80.1	79.7	70.8	58.7	51.6	43.5	.....	100	7	.....	.....
Hopkinsville	.....	.....	.....	.....	.....	73.0	78.2	77.8	69.4	57.6	49.9	41.2	.....	97	.....	.....	Oct. 18
Leitchfield	34.7	35.6	39.3	63.3	70.2	72.6	78.0	76.0	67.2	53.6	47.7	38.5	56.4	97	— 1	Apr. 7†	Oct. 13
Lexington	34.4	35.2	37.7	61.8	70.9	72.0	75.4	75.2	67.4	54.4	47.6	38.4	55.9	95	— 2	.....	Oct. 18
Lola	35.8	37.8	.....	.....	.....	.....	.....	78.8	68.4	.....	.....	.....	.....	102	6	.....	.....
Louisa	34.8	35.9	38.2	61.0	70.8	72.6	77.0	74.0	66.4	52.1	.....	.....	.....	96	.....	Apr. 7†	Oct. 21
*Louisville	35.6	37.2	40.0	64.6	72.6	74.2	78.4	77.7	68.8	56.3	50.4	41.0	58.1	98	3	Apr. 3	Sept. 24
Lyndon	37.4	38.2	42.0	63.6	70.9	73.4	77.4	77.0	69.2	52.4	49.5	40.3	.....	.....	.....	.....	.....
Marrowbone	.....	38.2	39.4	63.2	73.2	75.8	75.2	77.2	69.0	55.0	49.6	38.2	57.7	97	—2	Apr. 7†	Oct. 14
Maysville	.....	.....	41.8	62.0	70.6	72.2	75.5	75.8	68.8	53.9	50.3	39.4	.....	99	.....	.....	Oct. 19
Middlesboro	33.4	34.3	37.6	60.5	69.6	71.2	74.3	73.2	65.1	53.8	48.2	36.6	.....	96	.....	Apr. 7†	Nov. 6
Mount Sterling	.....	.....	.....	.....	.....	.....	.....	79.9	70.9	51.8	47.2	36.3	54.5	96	—7	Apr. 8†	Sept. 24
Munfordville	.....	.....	.....	.....	.....	.....	77.8	77.0	67.5	[18]49.7	42.6	.....	.....	.....	.....	.....	.....
Owensboro	35.2	35.1	37.6	[19]65.2	71.4	73.2	76.2	76.3	67.8	54.2	49.8	39.5	.....	.....	.....	.....	.....
Owenton	37.2	40.7	44.4	67.4	74.9	76.6	82.2	81.2	71.0	[20]53.2	46.6	37.8	56.3	96	—1	Apr. 8†	.....
Paducah	.....	41.5	45.8	67.0	76.6	[21]77.5	.....	.....	73.0	59.8	50.2	43.2	60.7	105	8	Mar. 24†	.....
Pilot Oak[3]	34.5	35.7	38.9	63.4	70.2	72.8	77.3	75.8	66.6	57.9	.....	.....	.....	.....	.....	.....	.....
Pleasure Ridge Park	33.3	35.2	42.0	65.2	72.6	74.4	80.6	79.5	69.8	53.6	48.3	39.3	56.4	96	—2	Apr. 7†	Sept. 23
Princeton	.....	32.6	41.6	.....	.....	.....	.....	.....	68.4	56.6	48.4	.....	.....	103	.....	Apr. 3†	.....
Richmond	38.7	41.4	44.2	65.8	72.9	73.9	78.6	79.1	71.0	54.9	51.0	39.1	.....	.....	.....	.....	.....
Russellville	.....	.....	39.5	62.1	69.9	72.2	76.4	75.4	66.8	59.2	51.4	43.8	60.0	99	5	Apr. 7†	Oct. 15
St. John	.....	.....	.....	.....	.....	.....	.....	.....	.....	54.0	49.1	39.0	.....	94	.....	Apr. 7†	Sept. 24

[1] J. E. Youngloye.

[2] M. H. Crump.

[3] Post-office changed from Pryorsburg.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Station.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Kentucky—Continued.																	
Sandyhook	36.2	35.8	39.1	61.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Sept. 24
Shelby City (*a*)	37.6	37.9	40.9	63.4	71.8	72.5	75.9	75.7	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shelbyville	34.7	35.5	38.8	63.3	73.1	73.7	77.8	77.6	68.0	54.4	48.7	38.1	57.0	99	—4	Apr. 8†	Sept. 23
Southfork (*b*)	34.1	34.8	40.7	61.0	69.1	71.1	74.7	72.0	65.9	.....	46.0	.....	.....	.....	.....	.....	.....
Springfield	35.0	37.0	[c]39.6	62.9	69.2	72.0	75.4	75.5	.....	.....	.....	.....	.....	.....	.....	Apr. 8†	.....
Vanceburg	.....	.....	.....	.....	70.6	71.8	75.2	73.6	64.9	53.1	.....	37.3	.....	95	.....	.....	Sept. 24
Williamsburg	.....	.....	.....	.....	71.4	72.8	76.6	76.9	69.3	57.4	51.2	39.1	.....	99	.....	.....	Nov. 6
Louisiana.																	
Abbeville	51.8	55.8	60.4	70.2	76.8	79.2	81.0	83.2	80.8	69.5	64.1	55.0	69.0	95	24	Mar. 21	Nov. 9
*Alexandria	48.2	52.0	58.2	70.8	77.4	80.8	83.6	83.4	76.8	64.6	61.0	49.9	67.2	102	20	Mar. 20	Nov. 9
*Amite	50.4	53.6	58.2	70.4	77.5	79.3	82.4	83.0	76.8	67.4	62.8	53.4	67.9	104	18	Mar. 20	Nov. 9
Bastrop	45.5	50.2	55.6	69.9	76.0	.....	82.6	84.1	78.0	66.1	61.4	50.0	.....	.....	17	.....	Nov. 8
*Baton Rouge	49.5	53.9	58.6	70.6	78.0	80.2	82.6	82.8	77.8	68.8	64.5	52.2	68.3	98	20	.....	.....
Calhoun	44.8	48.2	54.4	69.4	77.2	79.5	86.4	84.1	[h]74.9	64.2	56.2	48.3	65.6	104	12	.....	.....
Cameron	.....	.....	.....	[c]74.4	81.8	81.8	85.6	85.8	81.8	70.8	62.8	.....	.....	99	.....	Mar. 20	Nov. 30
*Cheneyville	46.8	50.3	56.6	69.8	77.7	79.6	82.3	83.0	76.6	65.5	59.2	48.8	66.4	103	18	.....	.....
Clinton	.....	.....	.....	.....	80.2	79.7	82.6	82.2	75.2	65.9	60.7	50.8	.....	100	.....	.....	Nov. 9
Coushatta	43.8	49.0	56.2	69.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Covington	47.4	53.6	.....	70.8	76.7	79.2	81.8	82.0	75.4	68.4	68.5	.....	.....	100	.....	.....	Nov. 6
Davis	[j]48.2	48.3	54.2	69.4	75.2	79.2	82.2	81.2	73.9	[c]64.6	57.2	52.1	65.4	102	21	Mar. 17	Nov. 9
*Donaldsonville	52.0	58.3	60.8	71.2	78.0	79.6	82.3	82.6	78.8	69.7	65.6	54.3	69.4	96	24	.....	Nov. 9
Elm Hall	51.4	53.1	59.3	67.4	74.4	77.9	80.4	79.0	73.5	65.4	60.1	50.8	66.1	98	21	.....	.....
Emilie	50.8	55.0	60.1	70.6	77.6	79.6	82.0	81.2	76.0	67.8	62.3	51.5	67.9	96	23	Mar. 20	Nov. 9
Farmerville	44.7	48.8	52.2	68.8	76.4	[d]79.6	84.8	83.2	75.6	[c]63.4	55.8	48.2	65.1	102	17	Mar. 25	Nov. 8
*Franklin	51.0	55.9	60.2	69.6	78.4	80.6	83.0	82.5	77.6	68.4	64.2	51.8	68.6	98	22	Mar. 21	Nov. 8
Grand Coteau	51.4	55.2	61.0	70.4	76.0	79.3	81.8	81.6	76.6	67.8	63.4	53.5	68.2	95	25	Jan. 5	Dec. 2
Hammond	49.9	53.4	58.8	70.4	77.2	79.4	81.3	82.2	76.4	[c]67.4	.....	51.0	.....	99	20	Mar. 20	Nov. 8
Houma	.....	56.2	62.4	70.3	.....	80.4	.....	.....	77.4	68.8	66.0	[e]52.2	.....	.....	.....	Feb. 18	Dec. 3
Jeanerette	53.1	[c]57.0	61.9	71.0	78.8	80.8	83.8	84.0	79.8	.....	.....	57.0	.....	101	23	Feb. 10	.....
*Lafayette	52.2	55.0	60.4	70.4	78.4	80.2	82.4	82.8	77.3	67.8	62.2	.....	.....	100	21	Mar. 19	Nov. 8
*Lake Charles	50.9	58.2	61.6	69.1	78.0	82.0	83.2	81.8	77.4	70.9	66.2	55.2	69.5	97	23	Jan. 26	Nov. 9
Lake Providence	.....	.....	.....	.....	79.6	83.2	86.6	85.7	.....	.....	56.0	.....	.....	.....	.....	.....	Nov. 4
Lawrence	50.4	.....	.....	.....	78.3	81.4	84.6	85.5	80.0	70.2	63.2	53.2	.....	99	.....	.....	.....
Liberty Hill	46.6	[f]51.4	56.8	69.2	77.4	82.2	87.0	84.0	76.6	65.4	59.0	51.0	67.2	110	16	Mar. 20	Nov. 8
*Mansfield	.....	.....	.....	.....	.....	79.6	83.3	84.0	76.2	63.4	57.9	47.8	.....	104	.....	.....	Nov. 5
Maurepas	[g]48.2	54.9	59.8	[h]69.6	78.4	[i]79.2	.....	.....	77.0	67.6	[c]62.4	50.6	.....	.....	19	Mar. 21	Nov. 10
*Melville	49.7	53.8	59.6	69.1	77.5	80.1	82.4	82.1	76.7	68.2	.....	.....	.....	98	.....	Mar. 20	.....
*Minden	.....	.....	.....	.....	76.7	80.3	85.4	85.4	78.0	65.0	54.1	47.0	.....	106	.....	.....	.....
*Monroe	46.2	49.1	55.6	71.2	78.3	81.8	86.0	85.0	78.0	65.2	58.6	48.8	67.0	102	20	Mar. 20	Nov. 9
*Natchitoches	45.3	50.8	56.2	69.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Iberia	52.0	54.2	60.1	[h]67.6	78.4	79.5	82.2	.....	78.2	[d]68.6	64.0	53.4	.....	.....	25	Mar. 20	Dec. 2
*New Orleans	52.2	56.2	61.2	70.6	77.8	80.0	82.8	83.0	78.9	70.4	65.2	54.6	69.4	96	28	Feb. 8	Dec. 3
Oakridge	44.3	48.8	55.5	70.4	78.0	.....	[e]83.8	85.8	77.0	64.0	57.3	53.2	.....	.....	18	Mar. 20	Nov. 5
Oberlin	.....	52.7	56.6	69.6	77.5	84.2	.....	81.5	76.2	66.5	63.3	50.5	.....	.....	.....	.....	.....
*Opelousas	49.8	53.6	58.0	69.6	77.3	79.8	82.3	83.0	77.3	67.0	63.9	50.9	67.7	100	18	Mar. 20	Nov. 9
Oxford	45.6	48.8	56.6	68.6	75.0	78.2	82.6	82.6	76.2	63.6	59.5	49.7	65.6	104	14	Mar. 25	Nov. 8
Paincourtville	52.9	56.2	62.0	70.5	77.6	80.1	82.2	81.5	76.9	67.4	63.8	52.0	68.6	97	23	Feb. 18	Nov. 9
Plain Dealing	44.0	48.4	53.8	71.0	76.2	79.8	85.2	85.0	78.6	64.4	57.2	50.0	66.1	103	17	Mar. 20	Nov. 5
*Rayne	52.4	55.4	58.7	70.8	78.8	79.8	83.1	84.2	78.9	68.8	65.5	54.7	69.3	101	26	Mar. 20	Nov. 9
*Robeline	.....	.....	.....	.....	.....	80.2	83.5	83.6	75.4	63.4	57.6	.....	.....	104	.....	.....	.....
Ruston	46.0	49.3	[c]57.2	.....	.....	.....	.....	.....	.....	[h]65.0	58.8	51.3	.....	.....	15	Mar. 13	.....
*Schriever	49.6	54.5	58.4	70.2	77.1	80.1	82.4	82.7	76.2	67.6	61.8	52.2	67.7	99	21	.....	Nov. 14
Shellbeach	47.4	52.7	.....	.....	.....	.....	83.4	83.2	78.8	70.8	65.4	56.0	.....	.....	27	.....	.....
*Shreveport	46.0	50.9	56.6	69.3	77.2	80.8	84.6	84.8	78.0	65.5	58.7	51.4	67.0	106	19	Mar. 20	Nov. 8
Southern University	50.7	54.1	59.5	68.2	76.1	77.6	80.1	80.6	76.8	68.5	64.0	53.0	67.4	95	24	Feb. 18	Dec. 3
Sugar Exp. Station	50.4	54.6	60.3	70.5	78.6	80.8	83.0	84.2	76.2	69.2	63.4	53.4	68.7	98	24	.....	Dec. 2
Sugartown	50.4	51.7	60.0	70.3	79.0	.....	86.2	86.4	77.4	67.8	62.1	52.0	.....	.....	21	Mar. 20	Nov. 9
Venice	53.6	56.6	64.6	67.2	78.2	77.0	84.0	82.4	78.5	70.8	67.4	55.7	69.7	97	31	None.	None.
Wallace	51.6	56.4	61.9	70.6	78.7	80.3	82.2	82.2	77.4	69.2	60.9	53.0	68.7	96	25	Mar. 21	Nov. 9
White Sulphur Springs	46.2	50.8	56.6	68.8	.....	.....	.....	84.4	77.0	65.6	63.7	52.8	.....	.....	18	Mar. 25	Nov. 9
Maine.																	
Bar Harbor	19.4	22.6	29.8	42.6	52.0	57.6	66.2	63.7	56.8	47.2	39.6	23.8	43.4	92	—20	May 26	Sept. 24
Belfast (*f*)	17.4	21.1	28.4	43.3	54.9	62.4	66.9	64.0	57.3	45.1	37.0	22.1	43.2	86	—16	May 20	Sept. 23
Calais	.....	.....	.....	.....	.....	.....	.....	.....	55.8	47.6	37.4	22.4	.....	.....	.....	.....	Sept. 24
Cornish (*a*)	18.5	20.3	25.8	43.6	57.4	63.2	69.5	66.9	57.2	44.0	38.4	22.2	43.9	94	—17	May 20	Sept. 4
Cumberland Mills	.....	.....	.....	.....	.....	.....	72.2	67.8	59.0	46.2	39.0	23.6	.....	.....	.....	.....	Oct. 9
*Eastport	18.6	22.2	27.9	39.6	48.0	56.3	61.5	59.6	54.6	46.5	38.4	22.4	41.3	85	—15	May 2†	Oct. 20
Fairfield	16.8	18.7	25.8	41.9	54.8	60.5	66.9	64.8	57.0	45.2	36.5	19.7	42.4	89	—27	May 20	Sept. 24
Farmington	14.7	20.2	27.3	45.1	57.8	65.6	72.4	68.8	59.0	45.8	36.4	19.8	44.4	100	—23	May 20	Sept. 5
Flagstaff	[e]11.2	12.8	19.2	37.3	51.9	59.2	[c]64.4	[e]61.2	52.8	42.0	33.2	14.3	38.5	96	—36	May 30	Sept. 5
Fort Fairfield	.....	.....	.....	.....	.....	.....	[f]66.4	62.5	[d]47.6	41.2	32.2	.....	.....	.....	.....	.....	Sept. 5
Gardiner	18.8	20.6	27.3	44.2	57.1	64.6	70.2	68.5	58.8	46.2	38.4	21.9	44.7	100	—18	May 8	Sept. 21
Kineo	11.8	13.3	20.5	36.2	52.2	60.2	66.3	65.1	55.0	42.4	32.7	16.5	39.4	88	—26	May 20	Sept. 23
Lewiston	18.7	21.3	27.8	44.5	57.6	64.6	70.7	68.5	59.0	46.6	38.2	23.1	45.0	96	—14	May 3	Oct. 10†
Mayfield	[f]13.4	.....	.....	[f]43.6	54.1	60.8	66.8	63.4	54.0	42.0	31.6	[f]15.6	.....	91	.....	May 20	Sept. 23
North Berwick	.....	.....	.....	41.7	56.2	.....	.....	.....	.....	46.9	[f]39.6	[c]24.2	.....	.....	.....	May 1†	.....
North Bridgton	17.2	18.4	25.4	43.1	55.8	62.5	69.0	68.6	58.0	46.9	39.0	21.8	43.8	94	—20	May 20	Sept. 5
Orono	.....	24.1	24.3	42.7	53.5	.....	66.0	64.3	55.5	44.7	34.6	19.5	.....	.....	.....	May 26†	Sept. 24
Petit Menan (*a*)	21.0	23.9	27.2	38.8	49.7	56.7	59.0	60.1	53.9	48.1	41.0	24.2	42.0	78	—12	Apr. 9	.....
*Portland	20.6	22.4	28.0	43.4	55.0	62.6	68.0	66.1	57.7	46.2	40.4	25.2	44.6	92	—18	Apr. 10†	Oct. 10
West Jonesport (*a*)	18.2	22.2	27.0	39.2	48.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 20†	.....
Winslow	.....	.....	27.4	43.2	55.2	62.2	68.9	[e]67.0	57.6	45.0	36.9	21.2	.....	95	.....	May 20†	Sept. 5
Maryland.																	
Annapolis	31.0	34.8	38.5	57.8	70.8	76.1	82.4	76.4	68.4	58.2	54.0	40.1	57.4	94	5	.....	Oct. 26
Bachman's Valley	29.2	32.8	33.4	53.7	66.5	68.0	74.4	72.0	64.5	50.4	47.1	31.2	51.9	98	—3	.....	Sept. 24

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Maryland.																	
*Baltimore	33.6	36.0	38.1	56.6	69.0	71.3	77.8	76.2	68.4	54.8	51.0	36.4	55.8	98	5	Apr. 8	Nov. 14
Beettcherville (a)	30.5	34.2	33.4	54.4	66.1	66.8	73.4	70.7	63.4	48.6	44.0	.....	.....	98	.....	.....	Oct. 9
Burkittsville	.....	*33.2	37.1	57.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambridge	34.8	38.0	41.4	*59.0	69.8	*71.5	*77.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlotte Hall	33.6	36.8	39.2	57.8	69.7	70.8	77.0	76.8	.....	55.5	54.0	38.4	.....	.....	5	.....	.....
Cherryfields (b)	32.8	36.8	39.0	55.4	67.8	71.7	76.4	76.2	67.8	55.4	51.2	35.7	55.5	.....	.....	.....	.....
Chestertown	31.8	34.2	37.4	54.6	66.6	71.8	76.0	75.4	67.0	53.5	50.0	33.4	54.3	93	6	.....	.....
College Park	35.0	35.8	*37.0	55.4	66.2	68.9	*74.1	73.7	*65.7	52.3	*47.2	33.5	53.7	98	7	.....	.....
Cumberland[1]	30.8	.....	.....	55.2	66.5	68.7	74.0	72.1	65.2	50.0	46.3	32.1	.....	93	.....	.....	Oct. 10
Cumberland[2]	35.6	35.8	39.4	61.2	71.2	73.5	76.0	76.4	69.4	54.4	50.5	36.8	56.7	97	1	.....	Oct. 10
Darlington	30.4	32.8	35.2	*56.6	66.8	69.5	75.7	74.0	65.7	51.7	49.5	33.0	53.4	95	2	.....	Oct. 8
Deerpark	27.4	27.2	28.6	48.3	61.3	63.0	67.6	65.6	59.5	*44.8	43.1	30.1	47.2	91	—13	.....	.....
Denton	33.8	38.2	38.0	*55.8	*70.4	71.0	75.6	†76.0	.....	.....	.....	34.0	.....	.....	5	.....	.....
Easton	32.5	36.2	39.0	56.4	67.1	69.6	76.9	75.5	67.4	54.0	51.0	34.5	55.0	98	7	.....	.....
Ellicott City	34.6	36.8	38.4	56.8	68.4	70.2	.....	.....	.....	.....	52.1	37.8	.....	.....	10	.....	.....
Fallston (a)	31.0	33.1	35.2	54.4	65.2	69.6	74.7	73.3	65.3	51.6	48.5	33.2	52.9	95	3	Apr. 9	Oct. 8
Flintstone	.....	34.2	33.8	55.4	66.4	68.2	74.0	71.1	63.4	48.2	46.3	.....	.....	98	.....	.....	Oct. 1
Frederick[3]	32.4	34.7	36.0	56.0	66.6	70.2	76.1	74.4	67.0	53.0	49.4	34.6	54.2	99	— 5	.....	.....
Frederick (a)[4]	33.4	36.5	36.4	56.9	66.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grantsville	26.8	27.4	29.4	51.5	62.0	63.4	68.0	67.4	60.9	46.6	43.8	30.2	48.1	98	— 8	.....	.....
Great falls (c)	32.0	35.6	37.4	57.4	68.9	72.2	77.7	76.0	67.9	54.1	50.3	34.8	55.4	94	9	.....	.....
Greenspring Furnace	30.8	33.1	34.8	55.6	67.2	69.8	74.8	78.6	66.0	50.6	48.0	32.9	53.5	97	— 1	.....	Oct. 12
Hagerstown	32.2	34.8	35.2	57.3	68.8	71.1	77.0	75.2	68.0	52.0	49.4	36.0	54.8	97	1	.....	.....
Hancock	31.7	.....	37.1	56.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jewell	33.2	37.1	38.7	57.0	68.3	71.2	76.4	75.8	67.8	54.3	52.6	35.6	55.7	97	6	.....	Oct. 19
Johns Hopkins Hospital	32.2	34.2	36.8	55.8	68.4	70.9	77.2	75.5	67.4	53.7	49.6	34.5	54.7	97	5	.....	.....
Laurel	.....	.....	38.5	56.2	67.9	70.4	76.4	74.1	67.2	52.0	50.0	34.2	.....	97	.....	.....	.....
McDonough	*32.8	*34.3	*36.0	*57.2	*67.2	68.4	.....	.....	.....	53.0	51.2	*37.5	.....	.....	2	.....	.....
Mardela Springs	33.1	36.6	39.0	55.5	67.2	71.8	77.2	74.3	66.6	53.4	51.9	33.8	55.0	100	6	Apr. 11	Oct. 9
Mt. St. Marys College (a)	*31.1	†32.4	35.0	55.2	.....	69.4	73.5	72.0	67.0	51.8	48.4	33.0	.....	96	5	.....	Oct. 22
New Market	30.8	*36.2	35.9	56.8	*67.6	72.9	78.0	75.4	66.5	52.9	49.2	33.2	54.6	98	4	.....	.....
Oakland	27.2	27.4	29.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pocomoke City	38.0	40.2	43.7	58.3	70.2	74.2	79.3	76.0	70.2	58.2	56.2	40.2	58.7	100	9	Apr. 9	Oct. 22
Princess Anne	32.6	36.2	39.7	55.1	66.3	70.0	75.6	73.4	64.8	51.8	49.8	34.4	54.1	98	4	Apr. 11	Sept. 24
Sharpsburg	30.7	33.0	35.0	55.8	66.6	69.2	75.1	73.7	65.9	51.0	48.8	33.0	53.2	96	— 2	.....	Sept. 24
Solomons	34.9	37.4	40.1	55.8	69.8	73.8	78.9	79.0	71.0	57.4	53.4	38.4	57.5	98	11	Apr. 9	.....
Sunnyside	25.1	26.5	26.4	50.4	61.5	64.0	68.0	66.0	59.3	44.0	42.0	28.9	46.9	91	— 6	Apr. 23	Sept. 22
Taneytown	.....	.....	.....	.....	.....	.....	76.8	76.0	68.2	53.0	49.4	33.7	.....	.....	.....	.....	Oct. 9
Van Bibber	31.8	32.9	35.0	55.1	67.2	70.0	77.0	75.2	66.4	51.8	47.2	32.2	53.5	97	4	Apr. 22	.....
Western Port	28.6	30.6	.....	55.3	67.4	71.5	75.3	72.0	65.6	48.8	45.5	32.4	.....	100	— 3	.....	.....
Westminster	32.0	34.9	37.8	59.7	70.4	.....	.....	.....	.....	52.6	52.6	35.2	.....	.....	1	.....	.....
Woodstock	31.4	34.4	36.1	55.6	66.8	69.2	.....	73.3	65.0	50.1	47.7	31.4	.....	.....	— 4	Apr. 9	Oct. 8
Massachusetts.																	
Adams	21.1	25.3	28.2	48.9	62.1	62.8	71.2	67.8	59.8	46.2	42.4	26.3	46.8	92	—18	Apr. 23	Oct. 23
Amherst[5]	21.8	26.9	29.5	50.0	60.1	63.8	70.9	67.6	59.4	47.8	43.5	26.6	47.3	92	—13	Apr. 25†	Sept. 24†
Amherst[6]	23.2	26.6	29.2	49.2	61.0	64.0	71.3	68.8	59.3	46.4	41.9	25.6	47.3	97	—14	May 1†	Sept. 24†
Andover	21.9	25.2	.....	42.3	57.5	62.7	68.2	67.9	59.4	46.5	.....	.....	.....	.....	—14	May 8†	Sept. 24
Bedford	21.5	26.2	30.8	47.6	59.0	63.4	69.9	67.7	59.4	47.1	43.0	27.1	.....	.....	.....	May 2†	Oct. 10†
Beverly Farms	22.8	26.6	30.1	44.3	56.3	61.7	67.5	66.4	58.6	47.4	.....	.....	.....	92	.....	Apr. 10†	Sept. 24
Bluehill (Summit)	21.7	26.2	28.9	46.5	58.3	63.2	69.5	68.8	59.8	47.4	44.5	26.8	46.8	93	—16	Apr. 9	Oct. 23
Bluehill (Valley)	20.9	27.4	30.7	46.2	57.9	63.4	70.5	68.8	60.1	47.1	43.6	25.6	46.8	94	—15	May 13	.....
*Boston	24.9	28.7	32.0	47.2	60.3	66.1	71.8	70.7	62.2	50.2	46.5	30.4	49.2	95	—11	Apr. 9†	Oct. 9
Brockton	24.0	28.0	31.4	47.2	60.0	64.7	71.6	71.3	61.4	49.2	45.5	27.9	48.5	98	—12	Apr. 11†	Oct. 20†
Cambridge[7]	25.5	28.5	31.7	48.6	60.6	65.4	72.4	71.4	61.9	48.4	45.5	28.3	49.0	95	—13	May 1†	Oct. 9†
Cambridge[8]	22.0	26.0	30.2	47.0	60.4	64.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 22†	Oct. 10†
Chestnut Hill	23.2	28.6	32.0	48.4	61.2	65.8	72.6	70.8	62.1	48.6	45.2	27.9	48.9	97	—13	May 2†	Oct. 10†
Concord	20.7	25.9	29.5	46.5	58.8	63.9	71.0	69.6	60.1	47.0	42.2	25.4	46.7	95	—14	May 8	Oct. 8
Dudley (a)	21.6	25.6	30.9	49.0	60.5	63.9	70.7	70.1	60.2	46.5	43.7	25.9	47.3	95	—16	Apr. 26†	.....
East Templeton (a)	19.8	23.9	27.1	46.4	60.0	63.7	70.2	68.5	56.8	45.2	40.2	23.6	45.4	92	—18	May 20	Oct. 9
Egg Rock, Nahant	24.3	26.8	28.0	43.4	55.4	62.4	67.2	67.6	60.8	48.8	44.2	28.8	46.6	88	—12	Apr. 10†	.....
Fall River	25.4	29.8	32.4	49.0	62.1	66.4	71.8	71.3	62.8	50.5	41.8	30.8	49.9	93	—10	Apr. 9†	Oct. 26†
Fitchburg (a)[9]	20.9	24.1	27.9	46.4	60.2	64.2	70.4	68.7	58.6	45.9	41.3	25.1	46.1	92	—15	Apr. 25†	Oct. 23†
Fitchburg[10]	21.1	24.2	28.6	47.3	60.2	64.3	71.2	70.1	59.4	46.5	42.5	25.8	46.8	95	—16	Apr. 25†	Oct. 23
Framingham	22.6	27.5	31.8	48.6	62.1	65.9	72.4	71.1	61.5	48.6	44.2	27.3	48.6	97	—12	May 2	Oct. 9
Groton	20.3	24.1	28.7	46.3	58.7	62.8	70.1	68.9	59.0	45.7	40.9	24.9	45.9	93	—16	May 8	Sept. 24
Hadley	18.6	23.4	28.1	47.2	60.1	63.4	70.9	68.2	59.0	45.6	41.4	.....	.....	97	.....	May 2†	Sept. 24
Hyannis (a)	29.7	32.6	34.2	46.8	60.0	66.7	73.5	72.2	64.8	53.0	49.7	34.1	51.4	96	— 8	May 8	Oct. 20
Hydepark (f)	21.5	26.6	29.7	45.3	62.2	66.2	72.4	71.2	61.7	48.1	43.8	25.0	47.8	88	—16	.....	Oct. 8
Lake Cochituate	22.2	28.1	31.8	48.8	59.9	64.7	72.1	70.1	61.2	47.2	44.0	27.0	48.1	97	—16	.....	Sept. 24†
Lawrence	21.1	25.8	30.1	48.3	62.1	66.9	73.2	71.4	61.0	47.7	42.5	25.2	47.9	97	—15	Apr. 25†	Oct. 10†
Leeds	19.6	24.4	28.0	45.6	60.5	64.0	70.3	68.2	59.1	46.7	41.9	24.8	46.1	92	—17	May 2†	Oct. 9
Leicester Hill	18.9	23.4	26.9	46.9	59.2	62.6	69.8	67.8	58.4	44.8	41.4	24.8	45.4	92	—16	.....	Oct. 9
Longplain (f)	24.1	28.7	31.3	48.4	58.6	62.6	70.9	69.3	61.7	48.5	45.5	28.4	48.2	94	—14	May 8†	Oct. 9†
Lowell[11]	21.1	26.2	30.0	47.0	60.7	65.2	72.0	70.8	60.9	47.2	42.8	26.2	47.5	96	—13	May 8†	Oct. 10†
Lowell[11]	20.0	.....	28.9	45.9	58.9	63.9	70.9	69.6	59.7	46.5	43.1	25.9	.....	94	.....	May 8†	Oct. 9†
Lowell[12]	23.8	27.2	31.2	48.9	61.4	66.0	72.8	71.6	61.9	48.6	44.6	28.3	48.9	98	—14	May 3†	Oct. 10†
Ludlow Center	20.0	21.8	26.2	44.6	56.2	60.7	67.3	66.0	55.8	43.2	39.5	22.4	43.5	90	—15	May 8†	Sept. 24†
Lynn[13]	21.6	26.8	30.4	45.7	59.6	64.8	70.7	69.0	61.0	48.7	43.9	27.2	47.4	96	—13	Apr. 10	Oct. 19†
Lynn[14]	23.8	27.0	31.8	46.4	59.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 10	.....
Mansfield (a)	23.1	27.7	30.5	45.8	58.9	63.7	71.0	67.8	59.3	46.3	43.3	24.8	46.9	94	—14	May 2	Sept. 24
Middleboro	22.6	28.4	30.4	46.0	58.0	62.7	70.6	68.3	60.2	47.7	44.8	26.3	47.2	93	—10	May 8	Sept. 23
Milton	25.1	28.5	32.0	46.6	57.2	62.4	69.2	67.6	59.2	49.0	45.0	27.8	47.4	93	—12	May 8†	Oct. 9
Monroe	16.2	18.6	22.0	40.6	56.0	59.2	65.7	62.8	54.4	42.0	38.2	21.2	41.4	87	—24	May 20	Sept. 23

[1] W. Bruce.
[2] Howard Shriver.
[3] McClintock Young.
[4] Woman's College.
[5] Miss S. C. Snell.
[6] Experiment Station.
[7] Harvard College Observatory.
[8] E. C. Brooks.
[9] Dr. J. Fisher.
[10] A. P. Mason.
[11] Prop. locks and canals.
[12] F. E. Saunders.
[13] Waterworks.
[14] J. W. Darcey.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Massachusetts—Cont'd.																	
Monson	25.3	26.7	30.2	49.0	61.5	64.2	71.4	68.9	60.6	47.3	44.1	26.4	48.0	92	—17	May 8	Sept. 24
*Nantucket	29.4	31.1	32.8	42.8	54.2	61.2	68.1	68.2	61.8	51.5	48.5	35.1	48.7	86	— 1	Apr. 10†	Nov. 14
Natick (*a*)	21.3	26.0	29.1	46.4	60.4	65.3	70.9	69.5	60.2	47.8	43.0	24.8	47.1	89	—14	.....	.....
New Bedford[1]	25.5	28.8	30.9	45.8	57.8	63.3	69.6	69.4	61.4	49.6	45.8	29.1	48.1	93	—11	Apr. 11†	Oct. 25†
New Bedford[2]	24.8	29.8	31.9	46.2	58.6	63.8	71.0	69.7	61.9	49.6	46.8	29.0	48.6	96	—10	May 8	Oct. 20†
North Billerica	24.2	27.8	29.8	47.2	60.2	64.6	70.3	69.6	61.0	48.7	43.1	27.0	47.8	94	—12	May 2†	Oct. 10†
Pittsfield	19.0	21.5	24.7	46.2	59.8	63.0	70.3	67.7	58.4	45.8	41.4	24.0	45.1	89	—17	Apr. 12†	Oct. 10†
Plymouth (*a*)	27.2	31.0	33.1	47.6	60.2	65.5	72.4	69.1	60.4	50.6	[c]45.3	30.8	49.4	93	— 9	.....	Oct. 20
Provincetown	27.9	29.4	31.8	43.9	56.7	63.6	70.1	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 23†	.....
Roxbury	24.9	.....	32.3	[c]48.4	59.3	64.1	70.4	[d]70.7	[f]61.2	.....	45.5	30.0	.....	93	—10	.....	.....
Somerset (*a*)	24.4	30.7	33.1	48.3	62.2	68.4	75.0	.....	65.5	50.9	49.1	29.8	.....	.....	—13	Apr. 25†	Oct. 26
Springfield Armory	21.8	25.2	28.7	47.9	61.4	64.2	71.4	69.0	59.0	45.7	42.6	25.2	46.8	96	—15	May 2†	.....
Taunton[3]	23.4	28.5	31.9	48.0	59.9	64.7	72.2	70.1	60.2	48.0	45.0	27.3	48.3	96	—11	May 8†	Oct. 9†
Taunton[4]	22.3	28.8	31.4	46.7	57.1	62.6	70.1	68.2	59.9	47.2	45.0	25.8	47.1	93	—17	May 8†	Sept. 24†
Taunton[5]	19.9	.....	.....	.....	.....	.....	72.2	70.0	60.6	52.0	45.7	.....	.....	.....	.....	.....	Oct. 9
Turners Falls	20.3	24.6	29.1	48.3	60.9	64.8	71.1	69.4	60.0	46.5	41.2	23.7	46.6	93	—14	Apr. 25†	Oct. 10†
*Vineyard Haven	30.4	33.8	35.6	46.9	59.4	65.3	72.2	71.4	63.7	53.1	50.5	34.8	51.4	.....	.....	Apr. 5†	Oct. 26
Wakefield	21.9	27.4	31.0	47.2	59.7	65.7	72.3	70.1	60.5	48.0	44.6	26.8	47.1	94	—16	Apr. 25†	Oct. 10
Westboro	21.8	27.0	31.4	50.1	62.0	66.0	73.2	69.9	61.4	48.6	46.4	26.6	48.7	95	—14	May 2	Sept. 24
Weston	.....	.....	.....	.....	.....	.....	.....	69.6	60.6	47.3	43.0	26.4	.....	.....	.....	.....	Oct. 9
Williamstown (*a*)	21.1	24.2	26.0	47.1	59.3	63.8	70.9	67.6	58.8	48.4	42.2	24.9	46.2	88	—14	.....	.....
*Woods Hole	27.6	30.0	31.6	43.0	55.0	62.0	68.6	69.2	62.0	51.0	47.1	32.6	48.3	87	— 6	Apr. 9†	Oct. 25
Worcester[6]	20.6	24.6	28.6	47.9	59.7	63.7	71.9	70.0	[c]59.2	45.9	44.3	26.1	46.9	92	—15	Apr. 11†	Oct. 10
Worcester[7]	23.2	25.9	29.4	48.0	61.8	64.6	71.0	69.6	59.9	48.2	44.8	27.6	47.8	91	—14	Apr. 10†	Sept. 23
Michigan.																	
Adrian	24.2	26.3	29.7	53.4	65.9	69.0	71.3	70.6	59.8	46.6	40.2	27.6	48.7	98	—16	Apr. 8†	.....
Allegan	26.2	26.6	29.6	53.4	66.2	68.6	71.2	71.4	59.6	47.6	42.0	.....	.....	95	.....	Apr. 22†	.....
Alma	23.1	23.6	26.4	50.1	63.6	67.6	70.0	68.8	57.1	45.0	36.4	27.4	46.6	94	—16	Apr. 22†	.....
*Alpena	22.1	20.8	23.0	43.2	56.6	61.3	65.6	65.4	53.4	42.8	35.3	26.6	43.0	93	—11	May 20	Sept. 23
Ann Arbor	24.0	24.4	28.3	51.8	65.1	68.2	71.1	68.6	58.0	46.2	38.6	27.6	47.7	93	— 7	Apr. 9†	Sept. 21
Arbela	24.0	23.2	26.6	50.6	63.5	68.1	71.2	68.8	57.2	44.6	36.8	27.8	46.9	94	—14	Apr. 21	Aug. 31
Badaxe	.....	.....	.....	.....	.....	.....	68.1	69.6	55.9	.....	.....	.....	.....	.....	.....	.....	.....
Ball Mountain	23.1	23.0	25.2	49.4	63.4	67.4	69.6	67.4	57.6	45.0	38.0	27.6	46.4	90	—12	Apr. 10†	Sept. 20
Baraga	19.6	16.8	19.1	39.2	53.1	62.8	66.5	63.7	54.4	42.1	26.2	23.2	40.6	98	—22	May 31†	.....
Battlecreek	24.9	25.5	29.8	53.2	66.6	69.6	72.6	72.4	59.4	46.9	38.4	28.9	49.1	98	— 7	Apr. 10	Sept. 23
Bay City[8]	.....	.....	.....	50.0	63.6	65.8	70.5	68.3	57.0	.....	.....	.....	.....	96	.....	.....	.....
Bay City[9]	.....	.....	.....	.....	[c]63.9	67.2	70.7	69.3	57.4	45.0	37.2	28.2	.....	.....	.....	.....	.....
Benton Harbor	26.8	28.0	31.4	53.7	65.4	68.6	71.0	.....	60.7	48.1	40.8	32.2	.....	.....	— 3	.....	Sept. 22
Benzonia	22.6	.....	.....	48.0	61.4	.....	.....	.....	.....	47.4	36.8	[f]29.2	.....	.....	.....	.....	.....
Berlin (*a*)	24.0	23.5	26.0	51.1	64.5	67.5	71.9	68.7	58.6	45.2	38.6	27.1	47.2	96	—14	Apr. 9	Sept. 23
Berrien Springs	26.7	26.8	30.8	53.8	65.7	67.7	71.6	72.0	60.4	46.4	39.8	31.6	49.4	98	— 5	Apr. 22†	.....
Big Rapids	.....	.....	.....	49.0	62.8	66.0	68.9	67.4	55.3	44.0	34.4	26.3	.....	93	.....	Apr. 22†	Sept. 23
Birmingham	24.9	24.4	27.6	51.5	66.8	69.6	72.8	69.9	58.0	45.6	39.1	28.5	48.2	93	— 7	Apr. 8†	.....
Boisblanc (*h*)	.....	.....	.....	40.3	.....	63.2	70.3	66.9	55.6	45.9	.....	.....	.....	.....	.....	.....	.....
Boon	20.8	18.2	20.2	[c]46.4	61.4	64.2	[d]66.9	65.2	52.2	42.2	[c]30.4	24.6	42.7	93	—28	May 31	Sept. 4
Bronson	23.0	26.0	29.4	53.9	67.6	69.5	72.2	72.8	60.2	47.4	38.7	30.2	49.2	98	— 8	Apr. 22†	Sept. 20
Calumet	17.8	16.8	19.2	39.5	53.5	62.2	64.6	62.7	52.2	41.8	25.9	24.2	40.0	89	—14	Apr. 21†	.....
Camden	.....	.....	.....	.....	.....	.....	.....	.....	57.8	[c]46.1	.....	27.8	.....	.....	.....	.....	Sept. 20
Charlevoix	23.4	21.9	24.6	47.4	61.4	63.7	64.6	65.6	55.8	45.4	35.0	29.0	44.8	96	—14	Apr. 22†	.....
Cheboygan	19.7	17.6	20.3	43.2	55.9	62.2	66.5	65.9	53.9	42.9	33.0	25.6	42.2	92	—24	May 20†	.....
Clinton	24.2	25.5	29.2	53.0	66.0	68.8	72.9	71.1	59.2	47.4	40.0	27.3	48.7	98	—13	Apr. 9†	Sept. 23
*Detroit	25.4	25.0	28.8	51.2	65.3	67.8	71.4	70.3	59.6	47.6	40.5	30.2	48.6	95	— 6	Apr. 8†	Sept. 23
Escanaba	.....	.....	.....	.....	.....	.....	.....	65.4	54.1	43.2	29.2	23.7	.....	.....	.....	.....	Sept. 20
Fairview	22.6	25.4	.....	48.4	.....	.....	.....	.....	57.6	44.6	39.9	26.7	.....	.....	— 7	.....	.....
Fitchburg	23.7	23.9	29.2	50.8	65.3	68.6	71.4	69.2	57.9	43.4	36.4	25.6	47.2	98	—18	Apr. 22†	Sept. 20
Flint	23.2	23.0	25.8	50.6	64.4	66.4	70.5	68.5	57.0	44.5	37.2	26.3	46.4	95	—23	Apr. 22†	.....
Gaylord	.....	.....	.....	45.9	58.9	63.2	66.0	64.4	51.9	41.7	31.4	22.3	.....	89	.....	May 19	Sept. 22
Gladwin	24.4	.....	25.4	50.2	.....	67.1	69.0	66.4	54.8	43.3	34.8	25.8	.....	94	.....	.....	Sept. 1
*Grand Haven	26.0	25.1	28.5	49.3	61.8	66.4	67.8	68.7	57.6	46.8	38.4	31.2	47.3	87	— 6	Apr. 10†	Sept. 20
Grand Rapids[10]	25.4	24.9	28.4	53.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Rapids[11]	25.0	25.0	28.8	52.7	65.2	69.9	71.8	71.4	59.1	46.4	38.4	30.6	48.7	94	— 7	Apr. 10†	Sept. 19
Grape	26.8	26.8	29.8	53.0	66.2	68.7	72.0	70.6	60.4	47.4	42.0	29.3	49.4	97	— 8	Apr. 8†	Sept. 23
Grayling	19.6	19.8	18.8	46.5	62.3	65.0	67.3	66.2	53.4	41.9	35.0	23.8	43.3	96	—29	May 31†	Sept. 3
Hanover	27.3	28.0	28.3	52.2	63.8	67.0	70.2	69.3	59.0	46.3	40.4	28.3	48.3	93	—18	Apr. 22†	Sept. 20
Harrison	21.0	19.8	24.2	48.3	61.6	65.5	68.6	66.5	53.7	43.4	32.7	24.6	44.2	93	—22	May 28†	Sept. 3
Harrisville	21.6	20.1	23.2	43.2	57.0	61.3	66.0	66.5	56.0	43.8	35.4	26.6	43.4	96	—13	Apr. 22†	.....
Hastings	24.9	24.9	28.6	53.5	64.8	68.2	70.4	69.8	57.9	46.4	38.2	29.8	48.1	93	—14	Apr. 22	Sept. 20
Hayes	24.6	23.6	27.2	49.2	61.7	65.6	70.8	69.2	[c]57.0	[c]46.7	39.4	27.8	46.9	95	0	May 20†	.....
Hesperia	24.1	24.4	25.4	49.6	63.8	67.2	71.2	69.2	57.0	44.8	35.9	27.2	46.6	96	—11	June 1	Aug. 28
Highland Station	22.8	.....	.....	[c]53.4	64.6	.....	.....	.....	.....	45.7	[c]35.9	.....	.....	.....	.....	.....	Sept. 20
Holland (*h*)	28.0	28.3	36.5	46.2	63.6	68.0	69.4	71.4	61.1	50.0	40.6	33.4	49.7	.....	.....	.....	.....
Howell	22.9	23.2	27.8	51.6	64.5	67.0	70.7	68.1	.....	[c]44.4	38.2	26.8	.....	.....	—18	Apr. 22†	Oct. 8
Ionia	.....	.....	.....	.....	.....	.....	.....	.....	58.2	45.9	38.2	28.6	.....	.....	.....	.....	Sept. 22
Iron River	.....	.....	17.4	40.2	57.2	[d]61.6	[c]62.4	62.6	[c]48.8	[c]38.3	23.9	17.8	.....	92	.....	June 1	Sept. 20
Ivan	21.5	20.8	22.7	48.2	61.8	66.4	69.0	67.2	54.2	44.1	33.6	24.8	44.5	95	—17	Apr. 23†	Sept. 4
Jeddo	22.4	21.6	25.1	48.0	61.9	64.2	68.8	67.0	56.6	44.4	37.2	26.7	45.3	92	—10	Apr. 22†	Sept. 20
Kalamazoo	24.0	24.1	.....	47.3	.....	.....	.....	71.6	59.7	47.5	38.7	29.8	.....	.....	— 8	.....	Oct. 18
Lake City	.....	.....	21.5	[c]46.7	.....	63.8	[f]70.9	67.0	55.2	42.7	.....	.....	.....	93	.....	.....	.....
Lansing	23.0	22.4	26.8	51.1	64.0	67.1	69.7	68.3	58.1	45.8	37.4	27.7	46.8	.....	.....	Apr. 8	Sept. 20
Lathrop	[c]16.0	14.4	17.0	40.7	[c]56.4	61.2	64.4	62.0	49.8	[c]42.3	25.0	20.6	39.1	93	—23	May 30†	Aug. 19
Lewiston	20.8	19.9	22.4	47.0	61.2	66.2	66.2	66.5	54.4	44.8	32.7	24.4	43.9	95	—14	Apr. 22†	Sept. 23
Ludington	.....	.....	.....	51.6	65.6	70.4	71.5	67.2	55.8	46.3	35.8	29.8	.....	.....	.....	.....	.....
Luzerne	.....	.....	.....	.....	.....	.....	.....	.....	51.6	42.0	31.9	23.1	.....	.....	.....	.....	Sept. 4
Mackinaw City	.....	.....	.....	.....	.....	61.4	65.7	64.9	53.1	42.9	33.4	26.8	.....	87	.....	.....	.....
Madison	24.1	26.2	29.3	58.0	66.7	69.2	72.2	70.4	59.7	47.0	39.9	27.9	48.8	95	—14	Apr. 9	Sept. 20

[1] T. R. Rodman.
[2] New Bedford Waterworks.
[3] Mrs. H. B. Sprague.
[4] E. L. Redfern.
[5] C. H. Wilmarth.
[6] Worcester Academy.
[7] G. W. Swan.
[8] R. W. Erwin.
[9] Agent Flint and Père Marquette R. R.
[10] J. Kremer.
[11] A. K. Lamb.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Michigan—Continued.																	
Mancelona						64.9	68.0	65.2	53.0	43.2	32.6	25.0		91			Sept. 4
Manistique	[f]24.7	20.1	20.2	38.2	51.6	60.7	63.4	63.3	52.1	41.5	29.9	24.9	40.9	87	— 8	May 19†	Sept. 3
*Marquette	19.3	20.4	21.6	42.6	56.4	62.0	64.9	64.6	54.4	44.0	28.7	25.6	42.0	96	—13	Apr. 9†	Oct. 2
Mayville	23.3	23.0	[d]28.5	50.8	64.2	66.7	70.7	68.3	58.2	[e]46.8	36.9	27.6	47.1	94	—10	Apr. 22†	Sept. 23
Middle Island (*h*)	27.6	25.4	25.6	43.0	56.4	64.8	69.4	66.5	54.9	44.7	36.7	29.4	45.4				
Midland					[g]64.2	67.6	71.2	69.9	57.1	45.0	36.1	26.6		97			
Mottville	24.6	26.4	31.0	54.0	65.8	69.2	72.1	71.4	60.2	[c]47.1	40.3	29.4	49.2	97	—12	Apr. 22	Sept. 24
Mount Clemens								70.0	58.3	44.2	37.6	25.4					Sept. 23
Mount Pleasant[1]	22.3	23.9	26.4	49.8	62.8	66.3	70.4	69.0	57.7					96			
Mount Pleasant[2]						[d]67.2	70.5	69.4	56.8	45.2	35.9	26.8					Sept. 20
Muskegon						[c]67.9	69.3	69.3	58.2	45.8	36.8	30.6		87			Sept. 24
Newberry									49.8	40.9	29.1	21.6					
North Manitou Island				45.0	57.7	63.0	67.2	66.6	56.3	44.8	34.2	27.2					
North Marshall	22.5	22.4	27.8	53.0	63.6	66.7	68.9	69.2	57.4	45.5	37.0	28.2	46.8	92	—13	Apr. 21†	Sept. 20
Northport	23.0	[c]22.4	25.9	45.1	57.0	63.6	66.4	66.8	[f]56.0	46.7	35.8	29.7	94.9	88	— 3	Apr. 22†	Sept. 22
Old Mission	25.2	24.3	26.2	43.4	60.8	64.7	69.7	69.2	56.0		34.6	28.6		91	— 3		
Olivet	24.5	24.5	29.2	52.4	65.9	68.3	70.8	69.6	57.8	45.4	37.6	29.1	47.9	92	—11	Apr. 22†	Sept. 23
Ovid	23.4	23.2	26.7	51.2	64.7	67.9	72.0	68.8	57.5	45.1	37.4	27.9	47.2	95	—16	Apr. 22†	Sept. 23
Owosso	22.8	23.0	26.4	50.2	64.8	67.0	69.9	68.4	57.0	44.0	35.5	27.5	46.6	94	—15	Apr. 22†	Sept. 23
Petoskey						[c]62.4	65.7	65.5	54.7	43.2	33.9	27.0		88			Sept. 23
Plymouth					[c]65.4	66.9	71.2	69.4	58.2	47.0	39.4	27.6		95			Sept. 23
Pontiac	23.9	25.0	26.9	50.8	62.9	66.2	69.0	67.4	57.0	45.1	38.2	27.8	46.7	90	— 8	Apr. 9†	Sept. 22
Port Austin					60.8	62.4	68.1	68.2	56.1	44.6	36.9	27.6		98			Sept. 23
*Port Huron	24.0	23.6	25.9	49.0	62.8	65.2	69.5	68.2	58.6	46.7	39.4	28.8	46.8	91	— 9	Apr. 23	Sept. 23
Powers	16.0	18.0	22.2	44.0	58.8	63.7	64.6	64.7	50.6	41.0	28.9	23.0	41.3	94	—20	Apr. 4	Sept. 28
Reed City					62.6	65.9	69.2	67.3	54.5	43.3	34.1	25.4		94			Sept. 27
Rockland	18.1	17.2	20.4	43.6	58.9	64.6	[c]66.7	65.9		43.2	[c]24.5	22.2			—17		
Rogers City			[d]21.9	41.8	54.0	59.6	65.0	64.4	53.6	[c]43.2	34.7	25.0		89		May 29†	Sept. 20
Romeo	24.2	26.3	27.4	50.8	64.4	67.0		69.6	57.8	45.9	41.4	27.6			— 9	Mar. 15	Sept. 23
Saginaw					[f]63.2	72.4			57.2	45.6	[c]38.2	28.1					Sept. 28
St. Ignace	20.3	18.2	19.9	39.0	52.6	60.8	64.9	65.8	53.8	43.3	33.6	25.6	41.5	84	—22	May 20†	
St. Johns	24.2	24.2	27.6	51.8	63.9	67.8	71.2	70.3	58.7	46.0	38.6	29.6	47.8	94	—10	Apr. 22†	Sept. 23
Sandbeach	23.2	23.2	26.2	47.1	60.2	61.9	68.6	68.6	58.0	50.1		28.2		95	— 5	Apr. 23†	
Saranac		23.8	27.6	51.6	64.0	67.8	71.3	70.4	58.8	45.9		28.6		94		Apr. 22	Sept. 28
*Sault Ste. Marie	15.4	16.6	16.4	40.0	53.6	60.2	63.9	63.2	51.6	41.9	30.2	21.1	39.5	89	—25	Apr. 23†	Sept. 22
Somerset	23.4	24.0	27.8	52.6	64.4	[c]68.4	71.0		56.1	45.9	39.2	27.4			— 7	Apr. 9†	Sept. 22
South Haven	25.2	25.9	28.7	50.8	63.9	67.0	68.9	70.3	58.4	46.4	40.9	[c]31.9	48.1	94	— 7	Apr. 10†	
Stanton	22.9	22.5	26.4	50.0	64.1	67.8	72.4	68.6	56.8	44.8	[c]36.7	27.2	46.7	95	—13	Apr. 28†	Sept. 23
Thornville	25.6	24.6	28.0	52.2	66.4	69.7	72.2	69.9	59.6	46.2	39.2	29.0	48.5	92	— 8	Apr. 23	Sept. 23
Three Rivers	28.1	29.1		56.0	68.5	[c]73.2	74.3									Apr. 8†	
Thunder Bay Island (*h*)	24.1	23.2	24.7	41.9	57.5		68.7	67.0	55.9	44.2	36.4	26.9					
Traverse City						65.9	70.2	69.6	55.3			29.6		97			Sept. 22
Two Heart River				41.8	56.8	67.0	67.4	63.5	52.9	41.1	30.7						
Valley Center						69.0	69.4	67.0									Aug. 31
Vandalia	27.4	27.9	32.0	54.2	65.7	68.8	72.1	71.7	60.1	48.4	41.2	32.7	50.2	96	— 7	Apr. 10†	Sept. 23
Waverly									50.5	45.4	37.0	28.3					Aug. 31
Wetmore									51.3	40.0	27.1	20.6					Sept. 26
Ypsilanti	22.9	24.2	27.6	50.8	62.6	65.0	68.7	68.9	59.4	46.8	41.4	28.6	47.3	91	—13	Apr. 23†	Sept. 23
Minnesota.																	
Ada	3.8	12.2	15.4	42.4	61.6	68.2	[c]68.6	[c]64.6	54.4	41.6	10.6	13.6	38.1	95	—38	Apr. 20†	Sept. 11
Albert Lea	17.2	22.4	25.6	[c]48.8	62.0	67.5	71.5	69.0	56.0	45.0	24.2	24.0	44.4	99	—17	Apr. 15†	Sept. 27†
Alexandria							68.2	66.9	54.8	[f]41.0	14.8	17.3		94			
Beardsley	10.0	18.6	18.6	42.6	59.4	[f]66.4	66.6	68.8	56.5	43.5	14.1	20.1	40.4	98	—26	Apr. 21†	Sept. 11†
Belleplaine (*a*)	14.8	18.5	21.6	46.6	65.0	70.0	74.2	70.7	56.7	47.8	19.2	21.0	43.9	100	—12		
Bemidji				42.4	58.4	70.3	74.4				14.2	17.2					
Bingham Lake	17.1						71.4	70.3	56.8	47.2							
Bird Island	14.2	21.0	23.4	45.2	61.9	66.4	68.2	68.4	55.8	44.8	17.6	21.1	42.3	100	—16	Apr. 21†	Sept. 19†
Blooming Prairie	17.2	21.6	25.9	49.7	61.9	66.9	69.4	69.3	54.5	43.8	21.6	24.6	43.8	98	—13	Apr. 21†	Sept. 18†
Bonniwell	13.6	19.8	24.0	45.2	62.8	67.4	70.3	69.6	54.2	44.0	[c]22.0			101	—20	Apr. 21†	Sept. 19†
Breese	0.4	7.6	13.2	33.8	57.4	64.8	65.8	61.8	51.4					94	—43	Apr. 21†	Sept. 3†
Caledonia	17.7	22.0	26.2	50.7	63.7	67.3	70.4	70.3	56.2	45.5	26.4	25.9	45.1	96	—21	Apr. 10†	Sept. 20†
Cambridge	12.5	17.5	23.2	43.9	61.2	65.9	66.2	65.9	54.1	42.2	19.7			95	—22	Apr. 21†	Sept. 21†
Camden	16.3	23.4	23.2	46.2	62.2	66.2	68.2	69.2		[b]42.3	19.4	25.0		99	—17	Apr. 21†	
Campbell			15.1	43.2				66.7	54.5								
Clearlake						66.9	68.0	65.1									
Collegeville	15.2	20.9	26.0	46.0	62.8	68.9	70.9	69.4	56.6	44.5	19.3	22.4	43.6	100	—22	Apr. 21†	Sept. 19†
Crookston	0.1	12.1	15.2	40.8	59.8	66.8	67.6	64.5	53.2	40.8	10.4	12.6	37.0	94	—36	Apr. 22†	Sept. 19†
Dawson (*a*)	8.8	16.2	18.8	40.8	62.7	69.1	[c]68.9	67.0			17.6	21.0		103	—23		
Detroit City	8.2	[c]15.4	17.7	43.0			69.2	[c]62.9	54.6			14.6		98	—40		
*Duluth	13.4	16.4	22.2	38.1	53.3	61.0	66.5	65.4	54.6	41.8	21.0	21.8	39.6	90	—25	Apr. 21	Oct. 6
Faribault	18.0	23.2			63.8	67.8	70.2			[d]46.4							
Farmington	14.9	19.6	26.6	46.4	61.8	65.6	69.3	69.4	54.2	42.6	19.0	20.6	42.5	101	—24	Apr. 22†	Sept. 19†
Fergus Falls	10.4	15.7	17.5	42.6	59.8	66.6	68.8	66.4	55.0	42.1	14.7	17.4	39.7	91	—28	Apr. 21†	Sept. 19†
Glencoe	15.9	24.7	25.9	46.4	63.4	69.8		69.2	56.0	42.8	22.8	22.8		99	—20	Apr. 9†	Sept. 11†
Glenwood	11.5	16.8	19.5	44.6	61.7	68.4	70.4	67.9	55.8	41.6	15.6	18.4	41.0	100	—26	Apr. 17†	Sept. 19†
Grand Meadow	15.5	19.8	24.1	47.4	62.0	67.8	70.6	72.2	55.0	44.2	21.8	24.4	43.7	101	—20	Apr. 22†	Sept. 21†
Grand Portage		9.4	17.1	33.3	44.4	50.2				35.2	17.7	16.9					
Granite Falls	13.3	21.8		46.4	60.9	66.6	68.6	68.6	56.1	[b]42.1		22.4		102	—19		Sept. 18†
Hutchinson	13.8	19.5	23.6	46.4	61.2												
Koochiching	12.6	6.6	12.2	[b]39.4													
Lakeside						67.5	69.3	67.0	54.3	41.5	16.6	21.8		99	—20		
Lake Winnibigoshish (*a*)	7.0	11.4	18.2	38.0	56.8	64.0	66.4	63.8	50.7	38.6	14.9	16.6	37.2	90	—38		Sept. 19†
Lambert	4.9	[c]10.2		39.6	59.2	66.2	66.6	62.0	51.6	39.2	10.4	10.3		92	—36	Apr. 26†	Sept. 11†
Lawrence	14.1	16.8	20.6		58.6	65.8	66.7	65.3	54.6	43.1				98	—22		
Leech Lake (*a*)	5.2	11.6	16.2	37.9	57.2	63.8	66.4	63.5	50.4	38.6	12.5	14.6	36.5	90	—48		Sept. 11†
Lesueur		23.8	27.2		63.4	68.2	74.2	70.0	56.3	43.7	21.4	24.2		100			

[1] C. McCook.

[2] Agent Flint and Père Marquette R. R.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Minnesota—Continued.																	
Long Prairie	10.3	15.6	19.8	42.6	60.5	65.8	68.1	67.0	54.9	41.0	17.1	19.5	40.2	95	—26	Apr. 22†	Sept.19†
Lutsen	13.2	13.6	18.5	36.2	.....	.....	.....	.....	50.1	39.6	22.4	20.9	.....	.....	.....	.....	.....
Luverne	18.2	27.4	24.8	49.0	61.1	66.2	69.1	69.1	55.7	44.5	16.4	26.8	44.0	97	—15	May 1†	Sept.19†
Mapleplain	13.6	19.8	24.4	48.0	62.2	67.4	70.3	68.8	55.6	43.6	19.7	21.4	42.9	98	—22	Apr. 21†	Sept.19†
Maplewood (*a*)	15.1	18.8	24.3	44.2	[c]63.7	.....	[c]71.0	70.9	55.8	45.4	22.1	.....	.....	95	—20	.....	.....
Mazeppa	17.4	21.8	23.1	49.9	68.0	73.1	72.2	72.5	53.0	40.6	28.1	23.7	45.3	104	—20	Apr. 9†	Sept.18†
Milan	10.4	19.2	19.5	44.8	60.7	66.2	68.2	69.2	57.2	43.2	15.3	19.1	41.1	97	—23	Apr. 10†	Sept.11†
*Minneapolis	16.8	22.3	26.2	48.2	64.0	69.0	71.7	71.1	57.8	46.3	22.6	24.3	45.0	99	—18	Apr. 8†	Sept.11
Minneapolis[1]	15.0	20.4	24.5	47.1	63.4	68.0	71.0	68.9	56.2	44.4	21.2	22.4	43.5	96	—21	Apr. 21†	Sept.19†
Minneapolis (*a*)[2]	15.0	19.8	24.6	46.4	63.2	68.0	69.8	67.9	54.3	42.3	20.4	22.3	42.9	98	—20	Apr. 22†	Sept.19†
Minnesota City	19.4	22.8	28.1	51.4	63.8	67.6	70.9	71.0	55.4	45.9	27.5	27.5	45.9	97	—20	Apr. 7†	.....
Montevideo	11.3	20.0	20.8	47.3	61.8	66.0	69.0	69.8	56.6	43.8	17.2	21.7	42.0	100	—20	Apr. 21†	Sept.19†
*Moorhead	5.4	13.7	14.4	42.0	58.8	65.8	67.1	65.8	53.8	41.1	10.2	14.6	37.7	95	—27	Apr. 21†	Sept.11
Morris	11.5	18.4	18.4	45.2	60.9	67.6	69.2	.....	55.6	42.9	15.8	19.2	.....	96	—24	Apr. 21†	Sept.19†
Mount Iron	6.8	11.3	17.9	39.6	55.9	60.2	64.3	62.1	50.2	36.6	14.1	15.8	36.2	90	—38	May 28†	Aug.28†
New London	11.4	17.6	21.2	43.8	61.0	65.8	.....	67.5	58.2	43.3	19.8	18.0	.....	98	—24	Apr. 21†	Sept.25†
New Richland (*a*)	[d]19.4	[d]21.5	[c]25.5	[d]48.0	[c]62.4	[d]67.7	[c]67.4	[c]71.1	[c]55.6	[d]43.3	[c]21.8	[d]24.3	[d]44.0	97	—22	.....	.....
New Ulm	18.0	24.4	26.4	49.4	63.3	68.4	71.2	70.9	56.0	44.7	20.8	24.8	44.9	103	—18	Apr. 21†	Sept.18
Park Rapids	7.5	12.5	17.0	[c]38.7	[b]53.6	63.4	67.4	63.3	52.4	39.9	12.4	15.4	37.0	94	—41	May 18†	Aug.26†
Pine River (*a*)	9.4	10.6	19.9	40.2	53.6	66.5	67.6	65.6	54.0	38.2	15.5	16.7	38.1	95	—35	.....	.....
Pleasant Mounds	19.6	25.0	27.0	49.5	61.9	66.2	69.4	69.6	55.6	46.8	21.3	24.8	44.8	100	—16	Apr. 21†	Sept.19†
Pokegama Falls (*a*)	5.4	8.6	15.2	36.5	56.0	63.2	66.0	61.6	50.2	35.1	11.5	13.6	35.2	91	—45	May 31†	Aug.28†
Redlake	6.4	[e]10.1	15.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rolling Green	19.9	23.2	25.0	48.7	61.4	66.6	69.4	69.8	55.4	44.8	20.0	24.0	44.0	95	—14	Apr. 21†	Sept.19†
Roseau	[e]0.3	7.0	11.0	37.2	[b]54.6	[c]64.5	62.0	60.0	48.6	.....	[d]6.2	11.9	.....	89	—43	Apr. 22†	Aug.31†
St. Charles	17.1	21.6	24.5	50.0	64.0	67.2	69.3	69.3	55.0	44.6	24.4	24.7	44.3	97	—23	Apr. 21†	Sept.22†
St. Cloud	11.5	16.1	21.8	41.7	60.4	65.3	68.1	67.8	54.6	40.7	18.7	20.0	40.6	98	—25	Apr. 21†	Sept.19†
St. Olaf	9.9	15.6	18.3	42.6	60.2	66.3	68.2	66.2	55.1	42.2	14.7	18.4	39.8	91	—24	Apr. 21†	Sept.19†
*St. Paul	15.6	20.8	25.1	47.4	63.4	68.2	70.8	70.0	56.5	45.5	21.8	23.3	44.0	100	—18	Apr. 9†	Sept.20
St. Peter (*a*)	17.9	24.6	26.1	.....	.....	.....	.....	.....	56.2	45.4	24.2	.....	.....	.....	.....	.....	.....
Sandy Lake Dam (*a*)	9.3	13.3	19.3	39.3	57.0	63.9	66.2	64.0	51.9	38.6	15.8	16.7	37.9	89	—41	Apr. 22†	Sept.19†
Sauk Center	11.4	15.6	20.0	42.4	59.4	65.8	67.0	65.6	52.3	37.1	13.2	.....	.....	96	—28	May 19†	Sept. 3†
Shakopee (*f*)	16.3	21.4	26.2	47.9	64.4	69.8	71.4	72.2	57.7	45.1	21.8	24.5	44.9	98	—18	Apr. 9†	Sept.20†
Tower	8.5	11.7	15.2	38.4	58.6	59.6	64.8	61.1	51.9	36.4	13.1	13.8	36.1	94	—47	June 14†	Sept. 1†
Two Harbors	16.4	17.4	22.2	38.8	52.0	59.0	63.3	63.3	53.0	42.4	24.0	23.2	39.6	89	—27	Apr. 24†	Sept.21†
Wabasha (*a*)	17.6	21.6	26.8	49.3	64.8	68.3	70.3	72.4	[b]54.8	44.2	24.3	25.2	45.0	102	—20	.....	.....
Willmar	11.2	18.2	21.8	44.6	60.8	68.0	68.6	67.6	55.1	42.5	16.6	20.2	41.3	98	—21	Apr. 21†	Sept.19†
Winona	17.4	21.6	26.1	48.8	63.0	68.4	71.5	70.7	55.2	45.7	26.2	26.9	45.2	96	—16	Apr. 10†	Sept.27†
Worthington	18.0	24.1	22.6	47.4	61.7	66.6	68.8	69.6	55.5	44.4	19.2	24.2	43.5	96	—25	Apr. 21†	Sept.19†
Zumbrota (*a*)	17.5	21.9	24.9	49.4	63.3	66.3	71.4	70.8	55.9	44.2	22.5	25.6	44.5	98	—23	Apr. 22†	Sept.19†
Mississippi.																	
*Aberdeen	.....	.....	53.1	.....	78.0	78.9	83.6	81.5	73.2	.....	.....	.....	.....	104	.....	.....	.....
Agricultural College	43.4	46.8	51.4	69.1	77.1	77.4	82.6	83.8	76.2	64.9	56.9	47.9	64.8	102	17	Apr. 3	Dec. 3
Austin	45.6	48.4	52.6	70.0	77.8	78.3	83.7	82.9	73.8	61.4	54.6	45.2	64.5	100	16	Mar. 20	Oct. 19
*Batesville	41.9	45.4	50.6	67.7	74.6	76.4	81.8	81.0	71.6	60.2	54.0	47.0	62.7	102	15	.....	.....
Bay St. Louis	49.0	54.8	60.0	70.5	78.8	80.2	82.2	82.4	.....	70.4	65.8	53.2	.....	.....	25	Feb. 18†	Dec. 25†
Biloxi	47.6	51.0	.....	71.7	81.8	82.8	84.8	84.6	77.0	69.0	62.7	52.6	.....	100	22	Feb. 21†	Nov. 30†
Booneville	.....	.....	48.5	.....	.....	.....	81.0	81.4	73.6	64.2	[b]58.6	.....	.....	.....	.....	.....	.....
Briers	47.0	51.1	57.3	69.2	77.0	79.4	82.8	81.6	74.3	64.8	58.7	50.6	66.2	98	21	Mar. 20†	Nov. 9†
*Brookhaven	47.5	52.0	57.3	69.6	78.3	77.7	83.7	83.0	76.4	64.9	60.6	49.9	66.8	105	14	.....	.....
Canton	45.8	49.6	.....	69.9	77.0	78.3	83.4	83.4	76.3	65.6	60.0	49.8	.....	101	21	.....	.....
*Columbus	.....	.....	[c]47.8	.....	79.2	79.8	85.0	84.8	76.4	.....	57.9	47.1	.....	106	.....	.....	.....
*Corinth	.....	.....	.....	.....	71.0	73.0	77.8	80.2	73.6	62.0	.....	.....	.....	102	.....	.....	.....
Crystal Springs	46.1	49.1	56.8	70.9	79.0	79.8	84.2	83.6	76.9	65.6	59.2	50.0	66.8	103	20	Apr. 3	Nov. 6
Edwards	45.4	50.0	57.2	71.7	80.0	81.3	85.8	84.6	77.4	66.0	59.8	50.0	67.4	103	18	Mar. 20†	Nov. 9
Enterprise	.....	.....	[c]54.7	71.6	77.7	77.5	82.4	82.4	74.3	64.2	56.0	[b]49.5	.....	105	.....	Apr. 2	Oct. 19†
Fayette	.....	51.7	57.1	71.0	78.4	80.2	83.1	83.2	77.0	66.2	62.1	50.0	.....	101	.....	Mar. 21†	Nov. 9†
French Camps	41.8	46.2	50.0	68.5	74.9	76.0	81.4	81.0	71.8	60.2	54.6	46.6	62.8	104	10	Apr. 3	Nov. 6
Fulton	41.4	46.3	50.0	67.7	77.0	76.8	82.4	83.8	73.3	60.6	55.2	44.4	63.2	104	12	Apr. 3†	Oct. 18†
Greenville[3]	43.2	47.6	52.4	69.8	77.7	79.6	84.1	81.5	75.1	63.3	56.4	46.3	64.8	100	19	Mar. 20	Oct. 18
*Greenville[4]	41.2	46.5	49.6	68.0	77.0	80.3	85.4	84.7	75.9	63.3	57.9	46.8	64.7	104	13	.....	.....
*Hazlehurst	.....	.....	.....	.....	78.1	79.9	83.1	83.6	77.0	66.4	60.8	[c]49.3	.....	101	.....	.....	.....
*Hernando	.....	.....	.....	.....	75.8	77.4	83.4	83.4	73.3	61.0	.....	.....	.....	104	.....	.....	.....
*Holly Springs	.....	.....	.....	68.0	75.9	77.6	83.0	82.8	73.2	60.7	.....	43.0	.....	103	.....	.....	.....
Ittabena	[c]45.0	48.0	52.8	.....	.....	78.8	83.4	.....	.....	[b]60.8	[c]52.8	.....	.....	.....	.....	.....	.....
*Jackson	43.6	49.4	54.0	70.6	78.2	79.2	84.0	83.4	75.2	63.4	57.3	46.8	65.4	104	16	Mar. 21†	Nov. 6†
Kosciusko	43.7	47.9	53.1	69.2	.....	.....	81.8	81.5	72.4	63.6	56.6	49.0	.....	.....	15	Apr. 21†	Nov. 8†
*Lake	[c]46.4	47.2	54.3	69.2	75.6	76.6	81.6	81.4	74.0	61.0	.....	48.2	.....	100	22	Mar. 20†	.....
Leaf (*a*)	48.9	52.8	57.5	67.4	72.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leakesville	50.2	53.2	58.7	68.8	76.6	78.6	80.7	82.4	76.8	68.6	63.2	51.8	67.5	101	17	Mar. 20†	Nov. 8†
Logtown	50.4	55.4	60.6	70.6	77.2	79.3	81.2	80.7	76.6	67.6	64.0	51.6	67.9	97	21	Feb. 18†	Nov. 8†
Louisville	44.0	49.2	52.0	66.4	.....	.....	80.8	83.1	74.8	64.0	57.8	49.8	.....	.....	13	Feb. 20	Nov. 9
*Macon	.....	.....	53.6	.....	79.6	80.1	85.0	85.4	76.6	63.7	56.3	46.5	.....	106	.....	.....	.....
Magnolia	48.7	52.9	59.1	70.9	79.1	79.9	82.8	83.0	76.1	66.6	61.5	51.5	67.7	105	17	Mar. 21	Nov. 9
Mayersville	44.8	.....	.....	.....	.....	.....	.....	80.3	75.4	63.7	59.0	51.2	.....	.....	.....	.....	.....
*Meridian	44.6	49.4	54.7	67.0	76.9	77.0	82.0	82.0	75.8	64.8	58.9	48.3	65.1	102	16	Apr. 3	Nov. 9†
Mosspoint	51.4	53.4	59.5	71.2	78.0	80.4	82.9	84.8	78.4	68.4	65.0	51.7	68.8	99	24	Feb. 21†	Dec. 3†
*Natchez	48.0	53.5	58.9	69.6	77.6	79.6	82.6	83.4	77.8	67.4	61.4	52.1	67.7	100	20	Mar. 20†	Nov. 6†
*Okolona	41.2	[d]49.3	50.2	.....	77.9	79.8	85.3	83.3	74.8	61.4	53.4	44.9	.....	106	11	Mar. 24†	Nov. 6†
Palo Alto	43.0	47.8	51.2	69.2	76.9	77.9	83.5	86.0	77.4	64.2	56.6	47.6	65.1	103	17	Mar. 21	Nov. 6
Pontotoc	43.8	47.4	49.9	68.6	76.7	77.8	83.0	81.3	73.0	60.9	55.2	49.5	63.5	103	15	Mar. 21	Nov. 9
*Port Gibson	46.2	51.6	57.0	70.0	77.6	77.8	83.4	84.0	76.4	65.0	60.9	49.2	66.6	104	18	Mar. 21†	Nov. 9†
Rosedale	42.3	[d]45.2	51.6	70.2	77.6	78.2	[b]84.0	81.6	[c]70.8	60.4	54.6	45.3	63.6	101	16	Mar. 20†	Oct. 17†
Stonington (*a*)	47.5	52.2	[c]58.0	70.6	79.2	79.8	84.0	81.8	76.4	67.1	60.6	52.0	67.4	102	20	Mar. 20	Nov. 9
Thornton	50.7	49.2	55.2	71.4	78.6	80.2	84.7	83.2	76.7	66.3	58.8	51.5	67.2	100	18	Mar. 20†	Nov. 9†
Topton (*e*)	48.0	53.0	56.8	72.4	78.8	79.0	82.4	84.5	78.8	67.6	61.0	52.0	67.0	98	22	Mar. 20	Nov. 9

[1] W. M. Cheney. [2] J. H. Aschenbeck. [3] Robert Somerville. [4] Cotton region observer.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Mississippi—Continued.																	
University	.....	.....	[5]52.1	68.4	75.2	76.1	81.2	82.3	75.8	62.9	.....	.....	.....	98	.....	.....	.....
Vaiden	45.4	48.8	54.0	70.8	76.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Vicksburg	47.3	50.8	56.3	70.4	77.2	79.5	83.2	83.0	76.8	65.6	59.8	52.2	66.8	100	22	Mar. 20	Nov. 9
Water Valley (a)	42.4	45.2	50.3	68.0	74.8	75.4	81.7	80.6	73.6	60.5	53.9	45.6	62.7	107	15	Mar. 24	Nov. 8
Waynesboro[1]	44.6	48.0	54.0	66.1	.....	77.2	81.7	81.0	.....	63.7	57.4	45.7	.....	103	20	.....	.....
*Waynesboro[2]	.....	.....	.....	.....	78.0	78.6	82.0	83.8	76.7	66.1	61.4	.....	.....	100	.....	.....	.....
Williamsburg	.....	.....	.....	.....	77.4	[3]79.0	82.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Windham	45.4	50.8	.....	69.4	76.6	.....	82.0	83.5	77.0	.....	.....	.....	.....	.....	.....	.....	.....
Woodville	48.2	52.3	57.6	69.4	77.3	78.4	82.2	81.9	76.4	66.9	61.4	51.8	67.0	99	19	Mar. 21	Nov. 8
*Yazoo City	42.8	48.2	54.1	72.0	79.6	81.6	86.0	84.6	76.5	63.8	58.2	47.9	66.3	107	10	Mar. 21†	Nov. 8†
Missouri.																	
Appleton City	33.2	.....	39.3	61.0	69.1	.....	.....	.....	.....	55.0	42.6	40.0	.....	.....	.....	.....	.....
Arthur (c)	31.5	35.7	38.0	60.6	69.4	73.1	77.9	77.0	63.8	51.2	40.5	37.8	54.7	.....	.....	.....	.....
Avalon	.....	.....	.....	.....	.....	.....	.....	.....	.....	53.2	38.1	[4]35.9	.....	.....	.....	.....	.....
Bethany	.....	32.2	35.6	59.0	68.0	71.4	75.6	74.0	[5]57.6	.....	38.2	39.2	.....	96	.....	.....	.....
Birchtree	36.8	38.9	41.9	64.6	69.0	71.5	77.6	76.2	66.7	54.4	45.7	39.9	56.9	103	4	Apr. 3	Oct. 9
Brunswick	30.9	35.5	40.4	62.6	69.4	71.2	76.0	75.6	63.6	53.5	40.6	35.4	54.6	97	—1	.....	.....
Carrollton	32.0	35.8	38.6	61.2	70.4	72.7	77.6	77.0	64.2	54.8	41.6	38.6	55.4	100	3	Apr. 3†	Oct. 20
Cedargap (c)	37.0	37.1	39.2	61.8	69.7	72.5	77.6	76.3	66.5	54.4	44.1	40.0	56.4	100	3	Apr. 3†	Oct. 18
*Columbia	33.0	36.0	39.8	63.6	71.2	72.8	77.4	77.6	66.8	55.0	43.1	39.3	56.3	104	2	Apr. 4†	Oct. 18
Conception	30.2	34.6	36.2	57.9	66.7	70.7	74.2	73.6	61.4	53.4	37.0	37.4	52.8	92	2	Apr. 3†	Oct. 20
Cowgill (c)	32.0	35.3	35.7	59.9	69.8	72.1	79.0	76.8	63.4	55.3	38.2	36.1	54.5	102	—2	Apr. 3†	Oct. 20
Darksville	29.8	32.0	35.1	59.2	70.1	72.5	77.0	76.2	62.4	52.0	41.0	36.2	53.6	102	0	Apr. 4†	Sept. 23
East Lynne (c)	30.8	33.8	35.7	57.2	65.4	68.8	74.4	72.4	60.3	49.8	39.2	37.1	52.1	.....	2	.....	.....
Edgehill (c)	35.6	37.0	41.2	64.3	70.8	73.2	77.8	75.8	65.9	52.1	43.4	36.0	56.1	98	4	Apr. 3†	Oct. 18
Eightmile (a)	32.5	35.8	38.1	59.7	67.2	69.8	74.9	74.0	62.6	53.0	40.6	39.0	53.9	101	1	Apr. 3†	Oct. 18
Elden (a)	35.0	38.2	40.3	64.4	70.2	71.9	76.6	.....	67.7	56.9	47.2	.....	.....	.....	.....	.....	.....
Elmira (c)	29.6	34.2	36.8	61.1	69.6	72.8	77.6	76.3	64.3	54.6	38.9	37.9	54.5	106	—3	Apr. 4†	Oct. 15
Emma	33.1	35.7	38.8	63.6	74.0	.....	.....	78.8	65.6	52.6	38.9	36.8	.....	.....	4	.....	.....
Fayette	31.6	35.0	38.8	63.0	71.4	72.2	76.8	77.4	65.6	55.2	40.6	37.4	55.4	102	1	Apr. 5	Oct. 21
Gallatin (a)	29.3	33.0	36.0	59.8	68.8	70.9	75.2	74.7	62.2	52.9	37.6	38.0	53.2	101	—4	Apr. 3†	Oct. 24
Gayoso (c)	36.3	37.4	.....	63.4	71.1	[5]74.0	78.1	76.4	67.2	52.4	46.8	.....	.....	.....	.....	.....	Oct. 18
Glasgow	.....	.....	.....	.....	.....	71.5	76.4	77.0	64.1	53.8	41.0	38.6	.....	103	.....	.....	Oct. 21
Gordonville (c)	34.8	36.6	41.6	62.6	69.6	71.7	75.1	74.8	63.8	50.0	44.7	35.4	55.1	.....	9	Apr. 3†	Oct. 18
Gorin (c)	28.6	29.0	35.0	58.1	69.1	72.0	75.8	73.5	60.1	49.5	37.4	34.8	51.9	102	0	.....	.....
Grovedale	35.8	36.8	41.5	63.8	70.0	74.2	80.5	77.6	67.8	54.0	44.4	39.9	57.2	108	3	.....	.....
Halfway	35.8	36.8	41.2	63.4	70.2	72.5	77.0	76.6	66.6	55.4	44.8	40.8	56.8	100	4	Apr. 3	Oct. 18
*Hannibal	31.0	32.2	37.4	61.6	70.4	71.5	76.1	75.5	63.2	53.0	40.6	37.4	54.2	100	1	Apr. 3†	Oct. 21
Harrisonville	31.4	36.2	39.8	62.2	69.2	71.6	77.0	77.8	64.9	54.3	40.8	37.4	55.2	104	0	Apr. 3†	Oct. 16
Hastain	33.8	37.4	41.2	62.8	70.8	75.0	.....	.....	65.1	53.6	43.6	.....	.....	.....	2	Apr. 3†	Oct. 17
Houston	37.3	37.0	40.9	64.8	70.5	72.3	76.4	75.1	66.6	55.2	48.1	41.2	57.1	102	5	Apr. 3†	Oct. 18
Humansville	34.4	37.4	40.4	.....	.....	.....	.....	.....	.....	55.4	45.1	40.9	.....	.....	1	.....	Oct. 18
Ironton (a)	35.0	36.2	40.2	63.5	69.0	71.2	76.3	75.8	65.6	52.8	44.7	38.2	55.7	102	5	Apr. 4	Sept. 23
Jefferson City	34.5	38.6	41.4	64.8	72.8	74.6	79.0	78.3	66.0	58.1	44.4	39.9	57.7	102	5	.....	.....
*Kansas City	31.4	35.8	38.4	61.4	69.6	72.2	77.4	77.4	64.8	55.0	40.5	40.4	55.4	103	0	Apr. 3†	Oct. 20
Kidder	28.2	32.4	35.6	58.9	68.0	70.8	76.0	75.1	62.7	52.5	37.0	37.0	52.8	102	—3	Apr. 4†	Oct. 17
Lamar	35.0	39.6	41.6	63.0	71.1	74.0	78.8	77.6	67.0	54.7	43.7	40.0	57.2	98	5	Apr. 3†	Oct. 18
Lebanon	36.0	36.9	40.0	63.8	70.8	73.2	77.4	77.6	68.0	56.5	46.3	42.2	57.4	101	3	Apr. 3†	Nov. 5
Lexington	31.8	36.4	39.6	61.7	70.6	71.6	76.9	76.4	64.0	53.8	42.2	39.2	55.4	102	1	Apr. 3†	Oct. 24
Liberty	31.4	36.2	40.8	63.6	71.6	73.4	78.4	77.9	66.4	54.8	39.7	38.8	56.1	105	2	Apr. 3†	Oct. 21
McCune (a)	33.7	32.9	37.9	61.3	70.2	72.1	77.6	76.8	63.9	52.6	42.2	38.3	55.0	99	2	Apr. 3†	Oct. 7
Marblehill	35.6	37.4	[6]41.4	63.7	70.7	[6]73.4	78.0	76.7	66.2	54.4	46.2	38.3	56.8	100	6	Apr. 4†	.....
Marceline	30.1	32.3	35.9	60.2	[6]69.9	72.8	[6]76.4	[6]72.9	61.6	[6]52.7	.....	.....	.....	100	.....	Apr. 4†	Oct. 16
Marshall	30.2	33.6	36.8	60.2	70.6	72.8	78.2	77.2	64.2	53.2	40.1	37.2	54.5	105	—1	Apr. 5†	Oct. 21
Maryville (d)	25.3	29.6	30.6	54.5	67.4	70.4	75.0	73.7	61.4	50.4	33.8	34.0	50.5	98	—6	Apr. 4†	Sept. 20
Mexico	32.3	33.8	38.0	61.8	71.2	72.8	77.6	76.8	64.9	53.3	42.3	38.2	55.2	103	2	Apr. 4†	Oct. 8
Mine La Motte	35.4	37.4	41.2	63.6	68.8	70.7	76.0	75.2	65.6	53.8	46.7	39.8	56.2	96	5	Apr. 3†	Oct. 9
Mineral Spring	39.0	42.4	45.2	65.4	70.4	73.4	77.8	76.8	68.0	57.0	49.8	44.6	59.2	102	5	Apr. 3†	Oct. 18
Montreal	.....	.....	.....	62.5	69.4	70.5	75.8	74.4	63.3	[6]51.6	42.6	38.2	.....	100	.....	Apr. 3†	Oct. 7
Mount Vernon	32.4	34.4	37.0	59.6	66.0	70.2	76.2	77.8	67.0	54.0	43.6	40.6	54.9	106	1	Apr. 3	Oct. 18
Neosho	36.0	39.8	43.6	64.8	69.0	73.6	78.3	79.0	68.9	56.6	47.4	41.6	58.2	102	3	.....	.....
New Haven (a)	37.6	39.4	44.2	67.9	75.8	76.8	81.1	80.3	69.6	57.7	44.9	41.2	59.7	101	7	Apr. 3†	Oct. 21
New Madrid	40.4	44.0	46.0	67.4	75.6	77.1	82.4	81.6	71.4	58.8	52.0	43.3	61.7	100	9	.....	.....
New Palestine	.....	.....	45.7	64.5	72.3	73.2	78.4	79.4	65.2	55.8	41.7	42.4	.....	99	.....	.....	.....
Oakfield	34.7	36.6	40.3	64.5	72.2	73.6	77.9	77.6	67.1	55.6	45.5	40.4	57.2	100	3	Apr. 3†	Oct. 21
Oakridge (d)	.....	36.2	41.8	.....	[4]70.0	70.8	.....	75.8	65.8	53.7	47.4	38.3	.....	.....	6	.....	Oct. 18
Olden	.....	40.1	41.9	64.6	71.0	72.7	78.8	77.0	66.5	56.0	46.2	41.6	.....	103	.....	Apr. 3	Oct. 18
Oregon[8]	30.1	35.2	38.0	61.6	68.4	71.8	76.2	75.3	64.0	54.6	37.4	39.2	54.3	97	—4	Apr. 3	Oct. 24
Oregon (a)[4]	28.6	33.2	35.6	59.0	66.6	71.0	75.1	74.1	61.6	52.3	35.0	36.9	52.4	96	—4	Apr. 3	Oct. 17
Palmyra (c)	30.0	31.8	37.8	61.4	75.4	76.4	80.7	79.0	65.8	53.4	41.0	37.0	55.8	100	—2	Apr. 3	Oct. 19
Phillipsburg (a)	34.5	36.1	38.8	62.6	69.4	71.5	77.6	76.1	65.4	52.2	43.0	39.0	55.5	102	4	Apr. 3	Oct. 18
Pickering (c)	28.8	33.2	34.2	58.2	65.0	69.7	74.8	75.7	63.7	53.9	36.6	36.8	52.6	100	6	Apr. 3†	Sept. 28
Platte River (c)	28.1	31.0	33.4	58.9	67.6	70.8	75.2	72.5	59.4	51.8	35.5	34.1	51.5	101	0	Apr. 4†	Oct. 1
Poplarbluff	38.0	43.4	44.6	66.4	74.4	.....	.....	79.4	68.4	58.2	49.2	[4]43.8	.....	.....	7	Apr. 5†	Oct. 18
Potosi	33.2	34.8	38.0	62.1	69.8	.....	75.7	72.7	63.1	50.0	40.3	33.0	.....	97	—1	Apr. 4	Oct. 18
Princeton (a)	29.2	32.8	36.0	59.2	68.0	71.7	75.2	73.6	61.4	51.8	36.8	36.1	52.7	103	—6	Apr. 3†	Sept. 20
Rhineland	33.0	35.8	39.4	63.3	70.7	72.2	76.0	76.4	66.4	55.0	45.0	39.2	56.0	99	1	Apr. 4	.....
Richmond	.....	.....	35.4	61.6	70.2	73.2	77.6	77.4	65.5	55.2	39.1	39.0	.....	102	.....	.....	.....
St. Charles	35.1	36.6	39.8	63.2	71.4	72.6	76.8	78.0	67.0	56.1	45.6	38.8	56.8	100	3	Apr. 3	Oct. 21
*St. Louis	35.0	36.8	40.6	64.8	73.0	74.0	79.0	79.4	68.2	57.2	46.2	40.8	57.9	100	5	Apr. 3	Oct. 18
St. Louis[8]	32.8	35.6	38.7	62.7	70.5	71.8	76.5	75.8	65.1	53.3	44.6	38.0	55.4	99	4	.....	.....
Sarcoxie (c)	32.4	35.8	39.0	62.4	69.4	72.4	78.0	77.0	65.0	51.5	42.7	38.4	55.3	105	6	Apr. 3	Oct. 14
Sikeston	39.7	42.8	44.4	66.8	[4]73.4	.....	.....	79.7	69.2	58.6	51.0	43.2	.....	.....	10	Apr. 3†	Oct. 18
*Springfield	35.4	38.2	40.2	62.8	69.5	72.0	77.4	77.4	66.8	55.3	44.5	41.6	56.8	100	4	Apr. 3	Oct. 18
Stellada	32.4	36.5	39.8	61.0	69.3	71.4	77.2	76.4	65.4	55.0	42.8	39.4	55.6	105	—1	Apr. 3	Oct. 7
Sublett	27.9	29.0	35.0	59.4	68.2	71.8	75.6	74.1	60.5	.....	37.4	35.0	.....	97	—6	Apr. 4†	Sept. 20
Trenton	28.9	33.0	35.9	59.1	68.7	71.4	77.0	75.0	62.4	.....	37.4	35.8	.....	99	0	.....	.....

[1] W. S. Davis. [2] Cotton region observer. [3] W. Kaucher. [4] S. M. Raley. [5] F. W. Duenckle.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
***Missouri*—Continued.**																	
Unionville	25.8	26.8	31.0	53.1	68.0	71.4	74.6	75.6	61.4	52.1	36.0	32.8	50.7	100	—10	Apr. 10†	Oct. 7
Warrensburg (*a*)	35.0	38.2	41.1	.....	73.5	74.3	79.0	79.0	66.1	56.8	43.7	42.3	.....	104	6	.....	Oct. 24
Warrenton	32.8	34.6	37.8	63.2	71.2	72.4	77.4	76.7	65.4	54.2	42.5	37.7	55.5	98	1	.....	.....
Willow Springs	38.8	41.4	42.7	63.6	68.2	72.0	77.4	76.7	67.6	56.2	47.5	41.9	57.8	105	6	Apr. 4†	Oct. 18
Zeitonia (*a*)	34.0	34.2	48.4	61.5	71.0	75.8	83.4	79.1	69.8	.....	44.2	41.2	.....	104	10	Apr. 3†	Oct. 8
Montana.																	
Agricultural College	.....	32.7	28.6	39.0	45.2	61.2	66.0	63.0	51.0	45.2	23.0	35.0	.....	94	.....	.....	.....
Augusta	.....	.....	.....	.....	.....	.....	66.5	63.9	52.3	51.4	13.7	38.2	.....	.....	.....	.....	Sept. 8
Bigtimber	28.0	38.1	32.4	43.2	51.1	65.0	70.8	68.4	54.2	47.8	24.0	40.7	47.0	97	—15	.....	Sept. 25
Billings	25.0	42.2	36.6	48.1	56.4	70.2	74.2	.....	.....	52.9	18.4	44.0	.....	.....	—20	May 15	.....
Boulder	.....	.....	.....	.....	[b]45.6	60.4	.....	[c]66.4	.....	[d]42.8	20.0	31.6	.....	.....	.....	June 25	.....
Bozeman	24.4	31.4	28.7	39.6	47.6	[e]62.5	66.6	63.2	51.3	45.6	[e]23.8	32.6	43.1	92	—26	June 11	Sept. 9
Butte	26.2	29.4	25.7	34.7	41.8	58.8	65.2	62.4	50.8	44.0	21.7	32.3	41.1	90	—24	June 11	Sept. 8
Chinook	7.3	24.8	22.7	43.4	53.4	68.8	73.2	66.8	53.0	47.9	6.7	31.0	41.6	105	—30	May 16	Sept. 9
Choteau	19.0	32.4	[c]25.8	38.2	[c]48.4	62.8	67.0	63.2	49.4	47.0	9.2	[d]35.2	41.5	99	—30	May 21	Sept. 9
Cokedale	30.0	33.8	29.2	[c]37.6	[d]45.5	[e]60.6	65.3	64.2	51.6	[c]46.6	[d]21.9	[c]36.3	43.6	97	—13	June 10	Sept. 8
Columbia Falls	23.2	28.0	31.4	43.0	49.0	61.6	[d]71.6	66.2	[c]53.2	.....	.....	.....	.....	100	.....	June 16	Sept. 8
Deerlodge	26.2	29.0	27.8	38.7	46.2	.....	.....	.....	.....	.....	26.9	33.0	.....	.....	—30	June 9	.....
Dillon	26.1	29.8	27.0	37.4	44.2	58.8	62.6	59.4	.....	.....	.....	.....	.....	.....	.....	June 11	Aug. 5
Fort Benton	13.2	29.0	28.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fort Custer	20.1	36.2	.....	43.1	53.0	66.8	74.2	70.0	55.6	48.2	18.5	33.4	.....	104	—30	May 16	Sept. 26
Fort Keogh	14.6	28.4	25.8	43.8	54.3	68.6	73.0	70.2	55.8	45.4	11.4	29.2	43.4	100	—33	May 16	Sept. 19
Fort Logan	22.6	29.4	27.6	36.4	[c]44.8	58.8	63.8	60.3	50.6	43.4	19.2	31.7	40.7	100	—42	May 20	Aug. 22
Fort Missoula	23.7	29.1	29.4	39.4	45.8	59.3	67.6	63.0	52.1	44.4	28.0	31.3	42.7	97	—10	June 11	Sept. 9
Glasgow	5.4	17.3	20.2	41.2	53.8	66.0	72.0	65.6	53.0	42.6	4.3	20.4	38.5	102	—41	May 27	Aug. 15
Glendive	10.2	22.6	23.1	46.2	58.0	69.2	72.8	71.0	54.0	47.7	12.0	25.6	42.7	103	—29	Apr. 26	Sept. 16
Greatfalls	22.2	38.8	32.6	43.0	49.2	64.4	71.0	64.6	55.0	52.9	14.6	37.4	45.5	100	—27	Apr. 20	Sept. 9
*Havre	7.2	26.0	23.8	39.4	50.0	64.0	69.4	65.6	52.4	44.6	3.8	30.0	39.7	98	—33	May 3	Sept. 10
*Helena	23.6	34.6	28.6	39.6	46.6	63.2	68.6	65.2	51.8	47.9	18.3	35.9	43.7	95	—22	May 18†	Sept. 10
Hogan	21.4	32.2	26.4	35.4	45.6	62.2	.....	61.2	49.8	46.2	14.6	38.0	.....	.....	—33	June 9	Sept. 7
Kalispell	.....	.....	.....	.....	.....	60.2	67.8	62.6	51.8	.....	.....	32.3	.....	.....	.....	June 11	Aug. 4
Kipp	13.1	28.6	23.0	36.6	44.6	55.8	62.6	56.8	.....	42.6	4.6	31.8	.....	95	—41	July 21	Aug. 3
Lewistown	19.4	29.0	24.8	35.6	45.9	59.8	65.3	60.4	48.4	44.0	[b]19.0	36.9	40.7	94	—33	July 24	Aug. 11
Libby	24.0	33.3	35.2	45.6	50.5	61.0	69.2	63.8	54.6	47.3	25.5	32.8	45.2	109	—27	July 23	Sept. 9
Livingston	29.4	36.0	29.8	41.6	49.1	62.9	71.8	66.6	53.0	49.4	23.0	38.2	45.9	96	—17	May 22	Sept. 10
Manhattan	24.8	31.8	[c]26.8	.....	.....	61.0	67.8	61.8	49.7	40.4	21.1	30.2	.....	95	—37	June 11	Aug. 22
Martinsdale	23.2	33.0	29.0	37.6	46.0	60.6	65.4	62.7	49.4	45.2	20.4	33.8	42.2	95	—28	May 21	Sept. 8
Marysville	22.8	31.2	25.7	35.6	42.9	60.0	65.6	61.8	48.0	44.8	16.9	33.4	40.7	93	—25	July 21	Sept. 7
*Miles City	12.2	28.5	26.0	43.6	55.2	68.0	72.1	69.7	55.2	46.0	12.7	31.4	43.4	98	—25	May 15	Sept. 17
Musselshell	18.4	28.0	23.0	40.6	51.4	65.8	70.5	67.6	.....	.....	.....	.....	.....	111	.....	June 12	Aug. 11
Poplar	5.8	14.0	17.3	39.5	53.8	64.7	70.2	66.2	53.8	43.2	7.8	20.6	38.1	100	—36	May 15	Sept. 9
Redlodge	23.8	29.2	23.5	.....	.....	60.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	June 11	.....
St. Ignatius Mission	.....	.....	33.6	45.0	48.7	61.6	.....	.....	53.0	45.6	31.7	36.5	.....	.....	.....	May 27	Sept. 9
St. Pauls	.....	.....	22.2	36.2	48.0	62.9	68.6	64.4	52.1	[c]48.2	11.0	33.4	.....	95	.....	May 15	Sept. 9
Sun River	[c]21.0	31.4	[b]18.8	39.3	49.0	64.8	68.8	.....	.....	.....	.....	.....	.....	.....	.....	May 21	.....
Troy	25.1	33.4	36.2	45.4	51.9	60.2	66.4	62.0	54.2	.....	26.0	32.1	.....	101	—19	May 22	Sept. 10
Utica	22.9	33.4	25.9	38.6	46.4	63.2	68.2	63.7	50.8	46.3	14.4	35.2	24.4	104	—29	May 20	Sept. 8
Virginia City	25.4	28.4	26.5	37.6	42.8	60.8	66.0	64.1	51.0	44.7	22.4	32.4	41.8	92	—23	June 11	Sept. 8
White Sulphur Springs	26.8	29.9	28.2	38.0	47.4	57.0	64.0	58.7	.....	.....	.....	.....	.....	.....	.....	June 7	Aug. 25
Yale	20.6	32.8	28.6	36.4	46.4	61.1	67.0	63.0	.....	.....	.....	34.0	.....	98	—28	May 28	Aug. 11
Nebraska.																	
Agee (*a*)	25.0	28.9	28.1	49.2	64.4	69.2	73.0	70.9	58.6	44.6	19.1	31.4	46.9	102	—10	Apr. 18	Oct. 5
Albion	26.3	31.8	29.2	52.8	66.6	70.4	74.4	72.9	.....	48.0	.....	.....	.....	100	.....	Apr. 18	.....
Ansley	28.5	35.1	28.2	51.4	63.0	73.6	73.6	71.9	59.0	47.1	26.2	34.2	49.3	101	—14	May 17	Sept. 19
Arborville (*a*)	29.6	30.8	28.7	53.2	63.1	69.8	74.4	72.2	63.3	51.6	30.5	37.5	50.4	98	— 6	Apr. 18	Sept. 19
Arcadia	.....	.....	.....	50.1	64.3	74.0	75.3	74.2	60.4	48.5	.....	.....	.....	102	.....	Apr. 21	Sept. 19
Ashland (*a*)	29.1	33.6	31.8	56.8	65.7	71.3	74.6	73.8	61.6	51.3	31.1	[c]5.1	51.3	98	— 7	Apr. 6	Oct. 6
Ashton	28.1	33.1	29.9	52.9	65.4	71.2	75.3	74.7	60.7	48.4	23.4	34.2	49.8	102	—11	Apr. 18	Sept. 19
Auburn (*a*)	29.9	35.1	36.0	60.0	66.7	73.0	76.6	75.1	62.2	53.6	33.8	38.5	53.4	104	— 6	Apr. 6	Sept. 28
Aurora (*a*)	30.4	32.8	31.0	53.6	63.6	72.5	76.3	74.1	60.3	50.2	28.3	35.5	50.7	100	— 5	Apr. 3	Oct. 17
Bassett	25.6	30.6	28.4	49.4	63.8	67.2	[f]72.0	70.3	57.4	46.9	16.8	33.5	46.8	100	—18	May 16	Sept. 18
Beatrice	28.4	32.4	32.8	58.3	66.6	71.7	75.3	73.2	61.3	50.7	33.7	35.5	51.7	97	— 5	Apr. 9	Sept. 28
Beaver City	33.1	37.4	35.0	56.5	65.9	73.0	75.6	74.6	62.6	52.0	32.0	38.1	53.0	104	—10	Apr. 19	Oct. 6
Benkelman (*a*)	36.0	36.4	36.6	52.1	61.2	74.2	80.4	78.6	59.6	51.5	.....	34.3	.....	108	— 8	Apr. 19	Sept. 28
Bluehill (*a*)	31.1	38.2	32.9	52.3	63.2	72.8	76.5	75.8	62.8	51.0	.....	36.2	.....	102	.....	.....	.....
Bratton (*a*)	28.7	33.3	33.2	[c]57.0	67.3	74.8	75.4	73.8	.....	.....	[c]30.2	[c]35.6	.....	99	.....	Apr. 3	.....
Brokenbow (*a*)	32.6	35.9	31.5	52.8	67.6	78.0	77.8	.....	63.5	49.2	24.8	37.4	.....	.....	—11	Apr. 18	Sept. 19
Burwell (*a*)	26.4	33.2	30.7	50.4	68.8	75.5	73.9	73.3	60.5	44.8	21.2	31.2	49.0	98	—12	Apr. 1	Oct. 5
Callaway	27.3	31.9	25.7	49.4	60.0	69.5	71.3	73.3	61.2	51.2	25.0	36.0	48.5	100	—12	Apr. 30	Sept. 5
Central City (*e*)	28.4	35.1	33.3	57.0	.....	79.4	80.4	79.1	65.7	48.8	28.6	37.8	.....	106	— 2	Apr. 3	Oct. 6
Chester (*a*)	29.7	32.9	32.4	56.6	64.8	71.6	74.2	72.6	60.2	49.5	29.9	35.7	50.8	102	— 7	Apr. 9	Oct. 15
Columbus	28.8	33.6	31.9	55.4	66.4	69.6	73.2	71.9	59.8	48.8	28.2	33.8	50.1	96	— 6	Apr. 16	Oct. 6
Cook	.....	.....	34.2	59.7	69.8	75.6	79.2	78.3	66.2	.....	.....	.....	.....	99	.....	.....	.....
Creighton (*a*)	23.7	27.9	27.8	50.3	65.0	70.4	73.5	70.5	55.9	44.8	19.6	28.9	46.5	102	—15	Apr. 18	Sept. 19
Crete	30.4	34.3	32.4	37.5	65.9	70.9	74.4	74.2	62.3	51.4	30.9	35.4	51.7	95	— 6	Apr. 3	Oct. 17
Curtis	30.6	30.4	34.0	53.8	66.4	73.4	78.0	77.2	63.9	53.8	.....	38.4	.....	105	—12	Apr. 18	Sept. 27
David City (*a*)	27.0	30.5	30.2	54.2	63.9	69.8	72.6	71.6	58.8	48.2	27.0	34.3	49.0	97	— 8	Apr. 3	Oct. 18
Divide (*a*)	30.8	35.0	31.2	52.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 3	.....
Dunning (*a*)	28.6	31.9	30.9	49.6	66.0	71.4	73.3	74.9	.....	.....	.....	.....	.....	99	.....	Apr. 18	Sept. 18
Edgar (*a*)	29.9	34.8	32.4	56.2	65.6	73.6	78.0	75.7	61.9	50.9	28.5	36.6	52.0	102	— 7	Apr. 3	Oct. 16
Ericson (*a*)	26.1	31.6	29.2	52.2	67.6	75.0	78.3	76.8	61.3	44.6	21.8	30.2	49.6	100	—12	Apr. 18	Sept. 19
Fairbury	29.9	34.8	35.5	59.0	66.8	72.5	76.1	74.0	61.9	51.5	31.9	36.8	52.6	97	— 3	Apr. 3	Oct. 16
Fairmont (*a*)	31.0	34.4	33.4	56.2	65.6	72.6	75.1	73.6	60.6	48.4	29.0	37.3	51.4	106	— 5	Apr. 3	Oct. 4
Fort Robinson	30.0	34.4	31.9	47.5	59.0	67.2	73.0	72.0	58.6	47.4	25.3	36.3	48.6	101	—17	May 17	Sept. 27
Franklin	31.8	35.5	33.6	55.8	66.4	.....	.....	.....	[c]60.3	48.3	31.6	36.6	.....	.....	— 7	Apr. 17	Oct. 4
Fremont	.....	.....	.....	.....	.....	.....	72.1	72.0	59.3	48.1	27.6	33.5	.....	.....	.....	.....	Sept. 28

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Nebraska—Continued.																	
Geneva	29.5	33.3	32.2	57.6	65.9	71.2	75.4	74.0	60.8	49.8	29.8	37.2	51.4	101	— 7	Apr. 5	Oct. 5
Genoa	26.4	30.4	29.4	53.4	63.5	70.3	73.4	73.0	61.1	49.4	26.0	34.2	49.2	98	— 8	Apr. 18	Sept. 19
Gering	28.1	31.3	29.0	48.0	59.9	69.2	75.1	72.5	59.3	46.9	25.8	[c]36.0	48.4	106	—18	May 14	Sept. 24
Gibbon	31.1	35.9	30.9	54.0	65.0	71.6	74.8	73.3	.....	.....	.....	.....	.....	97	.....	Apr. 18	.....
Gothenburg	32.8	.....	.....	54.7	66.0	74.0	75.9	74.0	60.1	48.1	27.2	34.9	.....	105	.....	Apr. 17	Sept. 18
Grand Island	29.1	33.2	31.2	53.2	64.4	70.6	74.0	73.8	.....	.....	.....	35.1	.....	98	— 7	Apr. 18	Oct. 6
Hartington	23.2	27.4	26.4	48.8	62.8	67.9	71.5	70.7	57.5	46.3	20.7	28.6	46.0	98	—13	Apr. 18	Sept. 11
Harvard (*a*)	28.4	32.1	30.6	54.3	64.4	71.7	75.1	73.8	59.8	48.1	27.4	34.2	50.0	102	—10	Apr. 3	Oct. 17
Hastings (*a*)	26.9	30.1	28.9	51.1	60.8	70.6	74.4	73.0	58.9	48.5	28.6	35.3	48.8	99	—10	Apr. 18	Sept. 28
Hay Springs	25.0	30.9	26.3	44.0	58.4	65.8	71.7	[b]70.8	[d]55.3	.....	.....	.....	.....	101	.....	May 17	Sept. 19
Hebron	29.5	34.8	33.2	58.0	65.4	70.5	74.2	73.3	60.5	50.2	31.5	37.0	51.5	101	— 8	Apr. 9	Sept. 28
Imperial	30.9	35.8	.....	50.9	63.1	.....	74.5	74.0	.....	47.0	27.2	36.6	.....	.....	.....	May 13	Sept. 27
Indianola (*e*)	31.2	37.6	34.8	54.8	[f]65.2	[e]73.0	.....	.....	57.8	[m]47.5	28.2	[i]32.2	.....	.....	.....	.....	.....
Indianola (near)	.....	.....	.....	.....	64.5	72.5	75.1	[e]75.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kearney (*a*)	29.9	36.5	29.2	53.9	68.1	76.1	77.3	78.0	.....	50.5	30.6	.....	.....	100	.....	Apr. 3	Oct. 11
Kennedy	26.1	31.8	26.9	47.2	62.5	69.3	75.2	69.6	.....	44.9	.....	33.0	.....	103	—19	May 16	Sept. 26
Kimball	31.2	.....	.....	46.4	57.9	68.1	72.8	71.1	59.4	47.7	30.2	38.0	.....	97	.....	May 13	Sept. 25
Kirkwood (*a*)	28.3	28.7	24.2	45.7	.....	67.8	71.7	70.4	57.3	44.2	18.0	29.0	.....	100	—11	Apr. 18	Oct. 5
Lexington	31.2	37.5	31.6	51.2	.....	69.0	72.2	71.5	59.4	49.3	28.4	35.6	.....	99	—14	May 16	Sept. 18
Lincoln[1]	28.9	34.0	32.4	57.8	66.1	71.7	74.4	74.0	62.0	52.0	30.8	37.2	52.6	98	— 5	.....	Oct. 17
Lincoln[2]	.....	.....	.....	.....	68.0	72.6	75.0	73.4	61.3	50.4	30.8	36.6	.....	.....	.....	.....	.....
Lodgepole	.....	32.7	30.7	47.0	59.6	68.7	71.4	71.9	58.6	46.9	26.6	34.2	.....	98	.....	May 14	Sept. 27
Loup (*b*)	30.7	35.6	31.8	55.4	65.3	69.8	73.7	73.8	59.4	46.9	26.8	33.7	50.2	100	— 8	Apr. 18	Sept. 19
Lynch (*a*)	24.3	28.8	28.0	50.8	65.3	70.7	73.0	72.2	59.3	43.9	19.1	30.8	47.2	100	—12	Apr. 18	Sept. 19
McCook (*a*)	34.0	35.7	36.6	53.9	69.0	76.1	80.3	80.4	65.2	54.1	29.8	35.2	54.2	103	— 8	.....	Oct. 11
Madison (*a*)	23.6	27.7	26.6	50.3	62.4	68.5	70.6	70.5	58.6	44.4	23.6	31.0	46.5	100	— 9	Apr. 21	Sept. 19
Madrid (*c*)	29.4	35.8	34.3	51.2	63.1	71.8	77.3	75.4	59.6	45.4	27.1	35.2	50.5	107	—17	Apr. 18	Sept. 27
Milford (*c*)	27.2	31.8	30.5	55.7	67.7	72.2	76.6	[e]73.4	.....	45.8	.....	.....	.....	96	.....	.....	.....
Minden (*a*)	29.7	33.6	30.4	54.2	63.6	69.7	73.4	72.5	59.2	48.1	27.9	34.7	49.8	100	—10	Apr. 18	Sept. 27
Nebraska City	[e]34.5	.....	[d]31.1	57.8	.....	70.0	76.7	75.5	59.8	50.2	[e]30.9	37.0	.....	96	.....	.....	Sept. 28
Nemaha (*a*)	26.4	32.8	33.6	59.8	68.2	71.8	78.3	75.9	60.4	51.4	31.9	32.6	51.8	101	— 6	Apr. 3	Sept. 19
Neabit	29.5	34.8	29.4	47.0	59.1	65.3	72.0	71.4	58.8	46.1	28.2	34.4	48.0	102	—13	May 18	Sept. 19
Norfolk	25.6	29.4	29.5	50.8	63.7	68.2	71.3	71.5	60.0	47.9	23.4	31.2	47.7	93	—10	Apr. 18	Sept. 19
Norman	.....	.....	.....	[f]59.1	65.7	71.8	75.0	76.0	64.6	53.8	30.8	.....	.....	109	.....	.....	.....
North Loup	28.2	33.0	30.4	51.4	64.4	70.0	73.3	72.5	59.6	47.7	25.5	33.4	49.1	98	—17	Apr. 18	Sept. 19
*North Platte	31.1	36.6	30.4	51.1	62.4	69.1	72.6	72.3	60.2	48.4	27.2	36.2	49.8	100	—14	May 14	Sept. 19
Oakdale	24.3	28.8	27.7	50.7	63.7	69.0	72.1	70.8	58.6	45.8	20.8	30.7	46.9	99	—15	Apr. 18	Sept. 19
Odell (*c*)	31.0	34.5	35.2	60.2	67.5	73.7	76.9	75.2	66.7	51.3	33.7	38.4	53.7	96	— 6	Apr. 3	Sept. 27
*Omaha	27.3	32.6	31.6	56.8	66.9	72.0	74.6	73.9	61.6	51.5	29.9	35.2	51.2	96	— 8	Apr. 3	Sept. 20
O'Neill (*a*)	25.1	28.6	27.8	50.0	62.5	67.0	70.6	69.4	58.5	46.1	19.0	31.2	46.3	96	—12	Apr. 18	Sept. 19
Ord	30.7	33.6	30.0	52.8	61.6	71.4	74.6	73.7	58.9	47.9	25.0	33.6	49.5	101	—12	Apr. 18	Sept. 19
Palmer (*a*)	25.5	30.6	27.7	51.3	62.3	70.8	74.0	73.7	59.3	48.9	27.1	32.5	48.6	100	—10	Apr. 18	Sept. 21
Plattsmouth	29.9	34.6	.....	61.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potter (*a*)	28.0	[e]31.2	29.4	46.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ravenna	30.2	34.5	30.5	54.0	63.2	69.3	75.2	73.1	60.7	49.4	27.8	35.2	50.3	98	—10	Apr. 18	Sept. 27
Redcloud (*a*)	32.5	35.8	33.8	56.8	.....	76.4	80.0	76.2	60.1	51.0	.....	34.4	.....	103	— 8	Apr. 2	Oct. 6
Republican (*a*)	32.0	34.7	35.4	57.6	69.6	82.6	80.9	76.0	61.6	47.4	31.0	35.7	53.7	102	— 8	Apr. 3	Oct. 6
Rulo (*a*)	32.5	37.2	38.9	60.8	68.8	.....	76.8	77.3	64.0	54.4	.....	35.0	.....	.....	— 2	Apr. 3	Oct. 20
St. Libory	.....	.....	.....	54.6	65.9	71.1	74.2	74.2	62.0	50.0	27.6	35.5	.....	98	.....	Apr. 4	Oct. 6
St. Paul	30.4	35.4	32.6	.....	67.2	73.5	77.0	76.1	63.4	51.3	29.5	36.6	.....	99	— 8	.....	Oct. 11
Salem (*a*)	33.2	36.8	38.0	62.1	70.5	76.4	78.9	78.2	62.8	.....	.....	40.0	.....	100	3	Apr. 1	Sept. 20
Santee Agency	24.5	30.7	29.1	52.0	65.9	71.0	74.9	73.9	61.6	47.6	19.4	31.2	48.5	105	—13	Apr. 18	Sept. 19
Seneca (*a*)	29.8	36.7	32.2	50.0	66.4	72.8	75.2	72.4	57.6	48.8	22.7	36.8	50.1	99	— 7	Apr. 19	Sept. 19
Seward (*e*)	30.6	36.2	33.6	57.5	67.2	74.2	77.2	76.6	61.9	48.6	30.7	37.0	52.6	96	— 7	Apr. 3	Oct. 6
Springview	25.8	32.2	28.6	49.6	63.5	69.2	73.1	72.2	56.9	46.8	18.8	30.2	47.2	102	—13	Apr. 21	Sept. 19
Stanton (*a*)	24.8	28.5	28.9	50.8	63.6	69.2	72.0	70.8	60.3	46.4	23.6	30.9	47.5	96	—10	Apr. 18	Oct. 6
State Farm	30.4	.....	.....	57.8	63.5	69.6	71.9	.....	61.9	49.8	31.1	34.0	.....	.....	.....	.....	.....
Strang (*a*)	30.2	35.1	34.2	59.8	69.2	71.0	79.6	76.9	64.2	51.1	30.7	37.5	53.3	100	— 6	Apr. 3	Oct. 20
Superior (*c*)	29.9	34.2	33.2	58.5	67.4	74.0	77.2	75.6	63.2	50.6	31.1	35.6	52.5	102	—10	Apr. 18	Oct. 6
Sutton	29.3	31.2	29.6	54.2	63.2	69.2	73.1	72.1	60.0	[e]49.5	29.4	36.6	49.8	99	— 8	Apr. 18	Sept. 29
Tecumseh	28.8	33.6	34.4	59.2	66.4	[e]71.1	75.5	73.0	61.5	.....	.....	.....	.....	99	.....	Apr. 3	Sept. 22
Tekamah	26.6	30.4	30.8	54.8	66.4	71.2	72.6	71.7	59.4	47.8	25.6	32.3	49.1	98	— 9	Apr. 6	Sept. 20
Thedford (*a*)	24.7	31.6	30.3	48.3	63.3	71.1	72.1	68.9	56.9	45.9	21.7	32.6	47.3	100	—20	May 17	Sept. 19
Turlington	25.5	31.3	31.6	58.0	66.8	71.6	74.5	73.4	60.8	49.8	27.7	31.4	50.2	100	—13	Apr. 6	Sept. 29
Valentine	.....	.....	.....	47.3	62.2	68.0	71.8	69.8	57.4	45.8	18.5	34.0	.....	98	.....	May 15	Sept. 19
Wallace	.....	.....	26.8	.....	64.6	72.2	77.3	.....	62.8	45.3	.....	31.7	.....	.....	.....	Apr. 19	Sept. 19
Weeping Water (*a*)	24.6	28.9	32.7	55.6	64.0	69.5	71.6	70.7	57.8	46.4	27.7	32.0	48.4	98	—11	Apr. 6	Sept. 28
Whitman (*a*)	24.6	.....	23.6	43.8	.....	67.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 17	Sept. 19
Wilber (*a*)	31.9	35.8	35.5	59.6	66.3	71.0	74.8	75.0	63.4	51.8	33.1	38.2	53.0	98	— 2	Apr. 3	Oct. 18
Wilsonville (*a*)	31.7	35.2	33.8	53.6	64.8	74.8	79.3	77.9	62.6	50.1	32.1	34.4	52.5	104	—13	Apr. 17	Sept. 29
York (*a*)	35.5	34.0	35.2	58.8	67.8	76.6	76.8	75.6	62.2	50.4	29.5	35.3	53.1	102	—10	Apr. 3	Sept. 20
Nevada.																	
Austin	34.0	33.4	34.8	36.2	44.6	64.0	69.2	68.6	57.8	49.1	36.5	37.4	47.1	93	0	May 19	Oct. 12
Battle Mountain (*a*)	35.3	36.1	40.7	44.0	51.1	71.8	73.2	71.3	59.3	50.6	35.2	34.4	50.2	102	— 6	.....	.....
Belmont	32.9	32.2	34.2	.....	.....	64.6	67.4	64.3	57.4	51.7	.....	.....	.....	105	.....	.....	.....
Beowawe (*a*)	36.7	38.8	38.4	41.4	51.8	78.1	77.1	71.8	60.8	49.1	31.9	33.9	49.8	103	—15	.....	.....
Candelaria	40.8	43.2	42.8	[e]42.8	52.2	71.4	74.2	74.0	[e]66.9	59.2	43.2	43.4	54.5	99	8	.....	.....
Carlin (*a*)	22.4	22.9	32.2	38.2	41.9	62.0	67.5	63.0	53.5	42.8	32.0	29.6	42.2	104	—16	.....	.....
*Carson City	40.4	41.2	41.9	42.6	50.6	64.3	69.3	65.6	57.8	51.0	40.4	38.2	50.3	97	7	May 19†	Sept. 28†
Carson City[3]	37.9	39.4	40.9	39.7	48.5	63.5	69.3	65.6	57.7	51.0	40.4	38.0	49.3	97	7	.....	.....
Cloverdale (*a*)	32.4	39.4	42.1	41.8	53.7	72.0	73.1	72.4	64.8	55.3	39.0	35.1	51.8	94	13	.....	.....
Downeyville	41.2	43.2	46.0	47.6	56.8	74.2	78.4	76.8	.....	59.4	44.0	44.0	.....	107	5	.....	.....
Duckwater	.....	.....	.....	.....	51.4	.....	.....	72.2	64.8	[e]54.6	32.4	31.2	.....	.....	.....	.....	.....
Elko (*g*)	28.5	29.4	35.7	40.8	47.9	70.1	73.1	66.4	55.6	44.7	34.4	36.3	46.9	102	— 7	.....	.....
Ely	30.8	29.8	34.0	37.2	45.9	62.6	66.6	64.0	53.3	44.2	31.0	30.6	44.2	96	—16	May 19	Sept. 26
Empire Ranch	30.8	29.8	34.4	40.9	52.2	76.0	.....	.....	59.2	46.2	33.0	33.9	.....	.....	—15	.....	.....
Fenelon (*a*)	27.0	30.0	31.6	38.0	44.2	64.6	70.8	67.6	53.3	44.1	27.2	30.6	44.1	101	—18	.....	.....

[1] University of Nebraska. [2] C. W. Ernst. [3] Prof. Chas. W. Friend.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.			Killing frost.	
													Mean.	Extremes.		Last in spring.	First in autumn.
														Max.	*Min.*		
Nevada—Continued.																	
Golconda (a)	35.6	34.4	40.4	43.9	49.7	69.9	76.4	70.7	60.9	52.9	39.4	32.4	50.2	102	—10	....	....
Halleck (a)	26.0	30.8	35.5	39.0	45.2	65.4	71.0	62.2	52.6	40.2	25.2	29.5	43.5	105	—18	May 20	Sept. 8
Hamilton	34.0	41.6	28.0	[c]40.5	51.6	......	......	......	......	......	......	......	......	......	......	May 20	Oct. 29
Hawthorne (g)[1]	40.9	42.2	45.7	47.3	60.1	75.2	78.0	76.3	66.2	58.0	43.3	40.9	56.2	97	20	....	....
Hawthorne[2]	40.2	40.8	43.6	45.4	53.0	71.5	70.2	72.9	64.0	55.4	43.0	41.0	53.4	100	16	....	....
Hot Springs (a)	39.3	39.4	43.7	40.9	48.6	69.6	76.6	......	68.2	58.0	36.4	36.4	......	......	0	....	....
Humboldt (a)	36.7	35.1	40.3	43.6	55.7	74.3	76.8	74.1	63.8	52.0	40.2	35.6	52.3	97	— 4	....	....
Knickerbocker Mills	......	......	......	......	[c]45.8	64.8	68.9	67.6	59.8	53.6	38.8	39.6	......	92	......	....	....
Lewers Ranch	38.4	39.6	41.2	40.0	48.0	63.8	69.5	66.4	58.4	52.9	41.1	39.8	49.9	95	4	May 19	Oct. 28
Las Vegas	40.1	44.8	49.2	51.9	62.1	76.0	78.6	74.4	68.0	59.2	45.4	42.8	57.7	104	15	Apr. 15	Nov. 12
Lovelock (a)	42.8	44.8	47.7	49.2	58.4	76.3	82.6	76.9	65.1	60.4	39.4	36.5	55.8	105	8	....	....
Mill City (a)	32.0	34.3	40.2	48.2	52.0	70.9	77.0	70.7	58.9	52.2	36.8	36.7	50.8	105	— 5	....	....
Osceola	37.0	36.2	37.4	41.0	49.1	68.0	72.2	70.8	63.9	56.0	37.4	40.2	50.8	96	— 6	May 16	Oct. 28
Palisade (a)	30.6	35.0	43.1	40.5	48.2	70.5	80.0	69.8	64.8	56.3	36.0	33.2	50.7	105	— 5	....	....
Palmetto	33.8	35.0	37.0	37.8	48.0	64.2	67.5	64.8	57.4	50.8	37.6	35.8	47.4	95	— 6	May 19	Oct. 13
Reno (g)	36.9	41.3	45.0	44.8	53.0	76.4	74.7	70.6	63.4	51.8	42.9	39.7	53.4	102	7	May 28	Oct. 13
Reno, State University	36.9	37.9	39.8	37.2	47.2	64.6	70.8	66.9	58.9	52.4	38.8	37.3	50.9	99	14	....	....
St. Clair	36.8	37.4	42.0	43.2	53.0	69.8	71.5	69.1	59.7	52.0	38.6	35.9	50.8	97	2	Apr. 26	Nov. 4
St. Thomas	43.3	50.8	57.0	61.4	71.8	85.4	88.9	82.6	76.4	65.2	......	43.0	......	117	......	....	....
San Antonio	35.8	34.6	39.1	44.3	69.1	69.6	73.2	69.5	[c]61.0	......	36.2	......	......	103	......	....	....
Silverpeak	38.0	41.0	44.4	......	......	......	......	......	......	......	......	......	......	......	......	....	....
Sodaville	......	......	44.3	45.2	55.5	73.7	75.8	75.2	65.2	56.6	42.4	40.6	......	105	......	....	....
Stofiel	19.8	20.2	27.2	32.8	39.8	57.0	[c]65.8	......	[f]50.7	42.1	27.7	26.8	......	......	—26	June 11	Sept. 10
Sunnyside	29.7	33.0	40.3	41.1	39.7	68.9	65.0	......	......	54.8	......	......	......	......	......	....	....
Tecoma (a)	28.7	31.8	36.6	45.0	50.6	68.6	76.2	71.2	58.3	46.0	29.7	28.6	47.6	105	— 6	....	....
Toana (a)	29.0	30.0	34.6	40.5	49.8	67.8	72.3	70.4	57.4	47.0	30.6	31.6	46.8	100	—14	....	....
Tuscarora (a)	29.4	29.0	31.8	35.6	[d]41.8	......	......	......	52.7	47.4	30.0	32.9	......	......	—13	....	....
Tybo	32.8	33.0	37.6	39.6	49.4	67.4	69.5	67.4	58.7	49.8	34.8	33.2	47.8	103	— 3	May 27	Oct. 23
Verdi (a)	35.8	36.7	40.6	41.4	50.5	66.5	71.9	68.4	59.8	51.0	41.2	38.3	50.2	105	8	....	....
Wadsworth (a)	34.0	36.8	38.6	38.8	55.0	69.7	76.0	71.0	54.8	47.0	36.8	33.9	49.3	104	— 2	....	....
Wells	28.6	30.2	34.6	41.0	45.9	64.0	70.0	67.0	55.8	44.4	30.1	31.5	45.3	99	—23	....	....
*Winnemucca	35.6	36.6	39.1	40.6	48.6	67.0	73.4	69.0	59.2	51.1	36.6	37.0	49.5	98	— 4	May 13	Sept. 10
New Hampshire.																	
Alstead (a)	16.7	19.7	24.5	48.4	63.2	68.4	71.8	71.6	57.6	44.4	39.4	20.9	45.6	90	—24	May 20	Sept. 23
Berlin	[d]14.0	15.1	[c]20.8	40.2	[c]55.4	......	......	......	......	......	......	......	......	......	......	May 13	....
Berlin Mills	13.6	15.8	21.2	40.6	......	[f]59.8	......	......	52.2	41.6	31.8	14.0	......	......	—37	June 13	Sept. 20
Bethlehem	14.7	16.9	22.0	42.8	56.7	61.0	68.0	64.8	55.6	43.4	36.6	17.0	41.6	88	—26	May 2	Sept. 5
Brookline (a)	23.0	25.6	27.0	46.3	58.5	64.7	71.2	68.3	59.6	46.8	42.7	24.4	46.5	96	—16	May 8	Sept. 24
Concord	18.9	22.6	28.1	46.5	59.2	61.2	70.2	67.6	58.4	46.0	41.2	23.8	45.3	94	—21	May 2	....
Dublin	20.0	22.6	26.9	......	......	......	......	......	......	......	......	......	......	......	......	....	....
Durham	20.5	25.1	29.5	44.0	57.8	64.6	70.2	67.7	58.8	46.4	41.4	26.0	46.0	95	—15	May 2	Sept. 24
Grafton	15.9	18.2	23.6	43.6	55.0	61.2	68.4	66.0	54.8	43.8	36.9	21.0	42.4	93	—27	May 24	Sept. 2
Hanover	16.9	20.7	24.3	44.1	58.7	62.2	70.0	66.7	57.8	44.8	38.4	21.0	43.8	90	—24	May 20	Sept. 24
Keene	18.1	22.7	26.0	46.0	57.9	61.9	68.9	66.5	57.7	45.2	39.6	22.6	44.4	92	—19	May 20	Sept. 24
Lancaster	......	......	22.3	41.8	55.6	61.0	69.1	64.4	55.6	43.0	34.5	15.8	......	92	......	May 24	Sept. 5
Nashua	19.6	24.2	29.2	47.1	59.7	64.7	71.9	69.7	59.7	46.5	40.8	24.2	46.4	97	—15	May 20	Sept. 24
Newton	20.8	24.0	28.6	45.5	57.0	63.6	70.1	67.9	58.6	45.6	41.0	24.9	45.6	93	—16	May 8	Sept. 5
North Conway	18.0	19.2	26.0	43.8	57.3	62.5	68.2	66.6	57.0	44.8	37.1	21.0	43.4	96	—24	May 20	Sept. 23†
Peterboro	17.6	20.8	26.6	52.2	60.3	66.6	72.2	67.0	57.1	43.8	39.3	22.3	45.5	92	—25	Apr. 9†	Sept. 5†
Plymouth	15.3	17.6	21.9	42.5	55.8	61.8	68.8	67.1	56.7	43.6	35.9	19.8	42.2	95	—23	May 14	Sept. 24
Sanbornton	17.1	18.8	24.1	44.2	56.7	60.7	68.0	65.6	55.8	43.8	37.8	21.3	42.8	90	—21	May 20	Sept. 23
Stratford	16.4	17.6	23.2	45.0	59.0	63.3	68.5	67.1	57.4	45.1	37.1	18.8	43.2	99	—32	May 20	Sept. 5
West Milan	12.4	15.0	20.8	39.6	55.4	......	65.2	63.6	54.4	41.8	35.4	15.9	......	......	—42	May 24	Sept. 21
New Jersey.																	
Allaire	28.9	33.4	34.8	52.2	64.8	67.4	75.2	73.2	64.6	54.0	52.0	33.3	52.8	99	— 1	Apr. 27	Oct. 9
Asbury Park	28.9	33.8	34.4	52.0	65.6	68.8	73.1	73.0	64.4	52.0	47.3	29.1	51.9	96	— 5	Apr. 10	Oct. 9
*Atlantic City	......	......	......	......	......	......	......	......	......	......	50.2	34.8	......	......	......	....	....
Barnegat	33.0	34.4	36.3	53.2	65.8	67.7	75.4	74.4	66.2	[d]54.0	52.3	36.8	54.1	100	0	Apr. 11	Oct. 9
Bayonne	28.2	32.0	34.6	52.4	65.6	69.1	76.2	75.0	66.5	53.0	48.5	32.0	52.8	98	— 2	Apr. 11	Oct. 20
Beachhaven	30.8	......	35.2	49.8	[d]63.0	68.0	74.8	74.2	66.9	......	[e]49.1	[j]36.9	......	98	......	....	....
Belvidere	26.1	28.7	31.8	53.2	65.1	67.4	73.4	72.2	64.8	50.2	45.1	29.2	50.6	99	— 9	Apr. 24	Oct. 9
Beverly	30.2	33.7	35.7	55.4	67.4	69.7	77.2	75.8	66.8	53.0	49.4	31.4	53.8	100	— 2	Apr. 9	Oct. 9
Billingsport (a)	28.4	32.2	34.1	53.0	66.8	71.0	78.6	75.1	66.3	51.9	47.7	30.7	53.0	96	— 2	Apr. 9	Oct. 25
Blairstown	[c]39.6	30.4	30.2	51.0	62.8	66.4	72.6	71.6	62.5	47.8	44.0	29.5	49.9	96	— 6	Apr. 11	Oct. 9
Boonton	25.1	29.0	31.4	52.3	64.6	67.0	73.6	72.6	63.7	49.6	45.8	28.6	50.3	97	—10	Apr. 11	Oct. 8
Bridgeton	33.4	36.3	38.1	56.7	69.3	71.4	79.1	76.6	68.2	54.8	51.4	34.2	55.8	97	4	Apr. 9	Oct. 9
Camden	29.4	32.7	35.3	55.2	66.4	69.3	76.2	74.6	65.8	52.3	49.0	33.7	53.3	96	— 2	Apr. 9	Oct. 9
Cape May	33.4	36.3	37.6	51.1	65.3	68.4	74.6	73.2	67.9	54.6	52.1	36.4	54.2	93	7	Apr. 11	Oct. 26
Cape May C. H.	32.9	37.0	38.4	52.5	65.2	68.7	75.4	74.2	67.0	54.2	52.4	34.6	54.4	94	5	Apr. 11	Oct. 9
Charlotteburg	25.1	29.6	[c]28.8	[h]54.9	61.0	63.4	70.0	68.2	60.7	47.8	45.6	29.8	48.7	94	— 8	May 8	Sept. 24
Chester	24.4	27.6	30.2	50.6	63.7	65.4	71.1	70.4	61.4	48.0	44.8	28.2	48.8	91	—11	May 11	Oct. 9
College Farm	28.0	......	......	53.2	65.2	68.1	75.2	73.2	65.6	51.8	48.8	30.5	......	97	......	....	....
Deckertown	23.4	28.2	30.2	51.9	64.1	66.6	74.3	71.8	62.6	49.0	45.4	29.0	49.7	93	—11	May 11	Oct. 9
Dover	24.2	28.8	30.9	51.6	63.4	65.8	73.5	72.6	62.7	48.5	44.2	27.9	49.5	100	— 8	Apr. 23	Oct. 9
Egg Harbor City	29.4	32.8	34.6	52.6	66.3	68.6	75.4	74.0	[c]63.6	51.9	49.4	30.8	52.4	101	0	Apr. 11	Oct. 9
Elizabeth	27.4	30.8	33.4	53.0	65.8	68.4	75.6	74.2	65.2	51.6	47.4	30.0	51.9	99	—10	Apr. 11	Oct. 9
Englewood	25.4	29.6	30.9	49.2	62.8	66.2	73.7	72.8	64.0	49.8	45.2	28.4	49.8	97	—12	Apr. 23	Oct. 9
Franklin Furnace	23.6	27.8	29.5	50.8	63.5	65.8	72.2	69.0	62.0	49.2	43.9	26.8	48.7	92	—10	Apr. 11	Oct. 9
Freehold	27.8	31.8	33.1	51.8	64.8	67.4	74.4	72.5	63.9	51.6	48.8	31.4	51.6	94	— 4	Apr. 11	Oct. 9
Gillette	26.2	30.0	30.2	49.9	62.5	65.6	72.0	71.3	[j]60.9	48.5	......	27.9	......	95	—11	Apr. 30	Oct. 8
Hanover	26.1	30.9	32.3	51.1	63.6	66.2	73.0	70.3	62.0	50.2	47.2	28.8	50.1	93	— 9	Apr. 11	Oct. 9
Hightstown	28.7	32.3	34.6	54.6	66.2	69.2	76.5	74.1	65.5	52.0	48.1	31.0	52.7	97	— 4	Apr. 11	Oct. 8
Imlaystown	29.4	32.6	34.4	54.6	67.0	70.0	77.5	75.4	66.4	53.3	50.2	31.4	53.5	100	— 4	Apr. 11	Oct. 9
Lambertville	......	......	33.6	53.4	66.4	69.4	76.7	73.7	65.8	50.6	47.2	30.8	......	99	......	Apr. 11	Oct. 8
Linwood	......	......	......	......	[g]68.8	68.2	75.4	[i]74.6	[g]65.6	......	......	......	......	101	......	....	....

[1] Pacific Railway system.

[2] C. P. Mensel.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
New Jersey—Continued.																	
Millville	[a]31.4	34.8	36.8	55.2	67.8	70.4	77.6	76.2	66.0	.....	.....	.....	.....	103	.....	Apr. 11	.....
Moorestown	30.0	33.3	35.9	55.2	67.4	70.2	77.2	75.6	67.2	52.9	50.2	32.0	53.9	99	— 4	Apr. 9	Oct. 9
Newark[1]	28.6	31.0	.....	53.2	66.5	69.4	76.2	75.0	66.1	52.7	48.8	31.7	.....	98	— 4	.....	.....
Newark[2]	28.1	30.4	33.3	52.9	65.8	68.6	75.6	74.8	65.8	52.0	47.9	31.7	52.2	97	— 5	Apr. 9	Oct. 26
New Brunswick[3]	28.8	32.6	35.9	55.2	67.2	70.0	77.2	76.0	67.3	53.3	49.0	31.7	53.7	101	— 5	Apr. 11	Oct. 9
New Brunswick[4]	28.9	31.8	33.0	51.4	63.6	68.4	73.2	72.2	63.6	50.5	47.1	30.4	51.2	96	— 4	Apr. 11	Oct. 9
Newton	24.2	27.6	29.4	.....	63.8	66.0	.....	.....	.....	48.4	43.8	28.3	.....	.....	—12	.....	Oct. 9
Ocean City	30.0	34.5	35.2	48.2	63.6	68.9	73.8	74.6	67.6	53.9	51.0	35.5	53.1	94	2	Apr. 11	Oct. 25
Oceanic	31.0	33.7	35.8	54.1	67.1	70.8	77.1	76.6	67.0	55.2	50.5	34.5	54.4	97	2	Apr. 9	Oct. 25
Paterson	29.2	32.4	35.2	54.7	66.9	68.6	74.6	72.8	64.8	52.5	48.6	32.7	52.8	98	— 2	Apr. 11	Oct. 26
Perth Amboy	28.0	.....	.....	.....	.....	68.2	75.4	74.1	65.0	51.2	47.8	31.0	.....	97	.....	.....	Oct. 9
Plainfield	29.4	32.2	34.4	53.1	65.2	68.0	74.9	74.6	65.1	52.8	47.7	30.7	52.3	98	— 4	Apr. 11	Oct. 9
Readington (*f*)	31.9	34.4	35.7	56.0	*69.4	*73.0	78.9	78.8	69.0	54.7	52.1	36.4	55.9	102	— 2	Apr. 9	Oct. 26
Rivervale	25.2	31.0	31.8	50.8	63.6	65.8	72.5	72.3	62.0	50.0	44.3	27.8	49.8	98	— 8	Apr. 23	Oct. 9
Sergeantsville (*a*)	.....	.....	.....	.....	.....	61.8	.....	70.4	64.6	50.2	46.3	30.8	.....	.....	.....	.....	.....
Somerville	26.7	31.0	33.4	53.5	65.5	68.6	76.1	74.3	65.4	51.2	47.6	28.4	51.8	102	—14	Apr. 27	Oct. 8
South Orange	27.4	29.8	31.8	52.0	64.6	67.2	74.0	72.6	64.1	50.8	47.0	29.9	50.9	94	— 6	Apr. 11	Oct. 26
Toms River	28.8	33.4	34.8	52.0	65.8	68.6	76.0	74.3	65.2	52.7	49.9	30.3	52.6	105	— 2	Apr. 23	Oct. 9
Trenton	31.9	35.2	36.9	56.6	68.0	71.5	79.2	77.0	68.0	55.7	52.8	35.9	55.7	99	— 3	Apr. 9	Oct. 19
Vineland	30.4	34.4	36.8	55.0	67.4	70.0	77.0	75.1	66.7	52.1	50.0	30.9	53.8	102	— 5	Apr. 11	Oct. 9
Whiting	31.4	35.4	37.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Woodbine	30.1	35.9	38.6	54.8	66.1	67.1	73.6	71.6	63.8	50.0	48.3	30.0	52.5	95	1	Apr. 9	Sept. 24
New Mexico.																	
Albert	41.2	40.2	45.9	55.6	69.9	76.2	76.2	77.8	69.3	55.6	44.6	42.1	57.8	104	12	Apr. 18	Oct. 27
Albuquerque	36.1	39.0	49.4	54.7	67.2	77.6	76.3	75.0	68.2	54.3	42.8	37.1	56.5	100	14	Apr. 19	Oct. 30
Alma	39.1	40.4	49.7	52.2	62.6	73.3	75.5	73.3	68.4	54.8	46.2	40.1	56.3	101	8	May 14	Oct. 24
Aztec	32.4	33.6	41.3	49.2	58.7	72.0	73.9	72.4	64.4	51.4	36.2	31.5	51.4	101	— 6	May 13	Sept. 27
Bernalillo	31.2	36.7	43.9	51.5	61.4	71.4	72.6	70.4	64.1	50.6	40.0	.....	.....	102	.....	May 16	Sept. 23
Bluewater	.....	.....	.....	.....	54.8	.....	66.6	64.0	57.2	47.2	37.4	29.7	.....	.....	.....	May 24	Sept. 14
Buckmans	.....	.....	.....	.....	.....	.....	.....	60.4	53.6	41.6	27.6	23.6	.....	.....	.....	.....	Sept. 11
Chama	32.2	29.2	36.3	43.4	50.7	65.6	66.3	67.5	59.4	48.3	35.0	32.8	47.2	99	—14	June 3	Sept. 23
Clayton	.....	42.4	44.0	57.2	66.0	73.7	74.6	75.5	.....	61.2	45.2	45.5	.....	100	.....	Apr. 19	Oct. 28
Deming (*g*)	44.7	43.6	54.7	62.3	75.7	86.7	82.4	82.2	75.5	62.2	52.7	48.6	64.3	108	18	.....	.....
East Lasvegas	36.8	35.2	42.3	50.2	59.6	68.2	68.4	68.3	61.0	48.4	41.7	35.8	51.3	91	3	.....	.....
Eddy	47.2	46.5	55.2	*65.6	74.1	81.4	*78.4	79.9	73.8	62.9	56.0	46.4	64.0	111	16	Apr. 2	Nov. 7
Engle	40.1	40.5	50.8	56.6	68.8	78.0	76.2	75.4	70.2	56.5	46.0	37.6	58.1	101	10	May 8	Oct. 30
Espanola	31.3	34.5	44.5	50.8	60.2	71.7	72.0	72.2	65.5	51.9	39.4	32.9	52.2	98	— 3	May 17	Oct. 11
Fort Bayard	42.0	39.8	48.4	51.3	63.2	73.7	70.6	71.0	67.1	53.1	47.4	42.0	55.8	99	12	Apr. 28	Oct. 29
Fort Wingate	37.8	33.6	42.7	46.1	58.4	70.8	71.2	69.4	63.9	51.6	40.3	35.0	51.7	99	— 2	May 15	Oct. 1
Galisteo	35.6	38.0	44.8	53.6	63.2	74.2	73.9	74.8	66.0	51.2	39.8	33.9	54.1	101	8	May 14	Oct. 26
Gallinas Spring	38.4	37.4	45.5	55.6	70.4	77.1	75.2	75.4	65.4	53.0	43.0	39.2	56.3	105	5	Apr. 13	Oct. 25
Gila	42.4	44.0	52.8	57.2	67.2	79.5	78.9	77.7	72.4	58.6	49.0	41.5	60.2	109	12	May 10	Oct. 29
Hillsboro	41.6	41.1	52.6	57.2	69.2	78.4	76.0	74.6	67.0	54.4	47.5	41.9	58.5	107	12	May 2	Oct. 28
Labelle	.....	26.1	28.9	37.8	47.5	*54.6	56.6	56.1	50.9	36.6	30.0	28.0	.....	85	.....	Monthly.	
Las Cruces	41.3	42.0	50.8	56.3	67.1	76.7	76.2	75.8	70.7	59.0	49.7	42.7	59.0	104	9	Apr. 26	Oct. 30
Lordsburg (*g*)	42.0	46.0	56.7	61.7	71.5	87.9	80.4	78.1	71.5	59.3	49.6	43.2	62.3	98	14	.....	.....
Los Lunas	34.7	36.4	45.0	52.1	62.9	72.8	72.5	76.8	64.9	53.6	43.8	36.1	54.3	104	6	May 13	Oct. 28
Lower Penasco	41.3	39.2	49.0	58.0	67.3	74.5	70.7	70.0	65.8	51.5	49.2	44.0	56.7	106	10	May 13	Oct. 15
Monero	26.4	26.2	35.7	42.6	53.2	64.2	65.5	64.9	56.2	43.8	29.6	26.0	44.5	96	—12	May 23	Sept. 23
Ocate	34.7	32.9	39.4	46.5	57.5	65.4	66.0	65.8	58.6	47.4	38.4	34.9	49.0	95	— 2	May 15	Sept. 28
Olio	.....	.....	.....	52.6	.....	.....	77.6	.....	.....	.....	.....	31.6	.....	.....	.....	.....	.....
Puerto de Luna	41.2	41.0	48.4	60.6	74.2	80.2	79.2	78.9	69.7	57.0	45.6	42.2	59.9	108	9	Apr. 19	Oct. 30
Raton	35.4	31.6	36.6	50.5	57.8	67.8	69.1	.....	63.8	47.6	34.6	40.2	.....	.....	0	May 16	Sept. 28
Rincon	42.2	43.9	54.8	60.9	71.9	82.3	81.0	79.2	72.8	59.5	*52.0	43.6	61.0	114	11	May 19	Oct. 28
Roswell	43.3	44.2	54.1	61.7	74.3	81.0	78.8	78.6	70.8	58.8	48.4	43.8	61.5	110	10	Apr. 18	Oct. 29
San Marcial	39.0	40.6	52.4	57.7	67.9	76.0	76.0	75.3	70.4	57.0	48.9	40.3	58.5	102	10	May 9	Oct. 30
*Santa Fe	33.9	33.0	40.5	47.8	58.0	69.0	66.8	68.0	61.2	48.5	39.1	35.8	50.1	89	7	Apr. 28	Oct. 29
Shattucks Ranch	43.0	38.0	45.9	54.1	64.8	72.4	69.3	69.1	62.2	51.8	47.0	43.0	55.1	101	10	May 13	Oct. 16
Socorro	.....	.....	.....	.....	.....	78.0	76.1	73.8	67.8	.....	45.4	37.6	.....	104	.....	.....	Oct. 27
Springer	31.1	32.0	39.4	49.6	60.1	71.6	72.0	71.3	62.5	49.4	37.0	[d]34.3	50.9	104	— 2	May 17	Sept. 28
Sulphur Hot Springs	26.0	24.8	34.0	.....	48.1	57.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Taos	30.5	*32.2	40.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Valley Ranch	.....	35.1	40.2	48.6	56.5	67.5	65.7	68.0	60.8	49.0	38.3	38.6	.....	93	.....	May 14	Sept. 28
White Oaks	.....	.....	.....	.....	63.2	73.8	70.3	72.1	64.4	50.4	43.1	37.8	.....	99	.....	May 14	Oct. 24
New York.																	
Addison	24.8	26.2	25.4	50.0	62.4	64.0	70.0	68.4	59.7	46.0	44.3	28.8	47.5	95	—13	Apr. 23	Sept. 23
*Albany	20.2	24.8	27.1	50.2	63.6	67.7	74.2	72.6	62.2	48.4	44.0	26.2	48.4	95	—16	Apr. 23	Oct. 10
Alfred	21.5	22.4	21.9	48.2	61.0	62.1	67.4	66.0	57.5	43.7	41.1	25.5	44.9	91	—18	Apr. 23†	Sept. 23
Angelica	22.1	23.5	23.8	48.2	60.8	62.7	*68.2	65.2	56.9	43.0	41.6	25.7	45.1	90	—22	Apr. 9†	Sept. 23
Appleton	21.3	24.9	26.1	47.7	59.9	64.1	70.2	69.2	58.8	45.8	42.6	29.6	46.9	90	—12	Apr. 23†	Oct. 10
Arcade	21.4	21.8	21.4	47.8	60.9	63.1	68.1	65.2	56.9	42.9	41.2	25.8	44.7	90	—20	Apr. 23†	Sept. 23
Avon	21.8	*24.8	24.4	*50.4	63.1	67.0	72.0	68.8	58.8	45.3	41.2	27.8	47.1	95	—16	Apr. 23†	.....
Baldwinsville	19.5	23.1	24.1	49.9	63.4	67.6	72.6	71.1	60.3	47.5	42.6	26.3	47.3	95	—22	Apr. 9†	Oct. 9
Bedford	25.5	29.9	31.8	50.5	63.3	64.9	71.7	69.9	61.7	49.2	45.4	28.5	49.3	94	—12	May 1†	Sept. 24
Big Sandy (*h*)	16.6	18.4	21.6	45.8	57.4	63.4	69.4	60.5	58.9	45.2	42.0	23.7	43.6	88	—36	.....	.....
*Binghamton	.....	.....	.....	.....	.....	.....	.....	.....	.....	46.4	43.8	27.2	.....	.....	.....	.....	Oct. 10
Binghamton[5]	21.0	24.8	24.4	49.8	62.2	64.6	71.0	68.1	60.4	46.4	43.6	26.9	46.9	95	—19	Apr. 23†	Sept. 23
Bloomville	18.1	23.2	22.4	50.4	62.3	63.2	70.6	70.0	61.4	49.4	43.0	.....	.....	98	.....	Apr. 23†	Sept. 20
Bolivar	.....	.....	.....	47.0	61.0	62.2	67.0	66.0	56.4	44.0	*41.5	26.8	.....	90	.....	Apr. 23†	.....
Brentwood	*22.6	*23.0	32.4	47.8	61.2	*66.6	*73.6	71.9	62.2	50.4	46.2	28.6	49.3	95	— 9	May 8†	.....
Brookfield	18.1	23.2	24.8	52.4	59.2	62.9	72.2	69.8	56.7	47.8	.....	.....	.....	96	.....	Apr. 11†	.....
Brooklyn	28.2	31.0	33.6	53.0	65.8	68.8	75.5	74.2	65.6	52.9	48.7	31.5	52.4	94	— 3	Apr. 9†	Oct. 26
*Buffalo	24.8	24.8	25.3	46.5	58.5	65.8	70.2	68.6	60.2	47.4	42.6	30.2	47.1	86	— 9	Apr. 9†	Nov. 8†
Canton	13.2	15.4	19.6	44.8	58.2	62.6	68.8	66.7	56.2	42.8	*37.9	19.8	42.1	92	—43	May 13†	.....
Carmel	21.9	26.8	28.6	50.7	64.0	67.3	73.3	71.1	62.2	49.0	43.6	25.8	48.7	93	—10	.....	Oct. 9

[1] F. W. Ricord. [2] G. C. Sonn. [3] C. V. Myers. [4] Mrs. G. H. Cook. [5] Superintendent State Hospital.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
New York—Continued.																	
Catskill							72.8	71.6	62.2	49.0	44.2	26.6					
Charlotte (*h*)	25.5	25.8	27.8	45.9	58.4	60.3	68.0	67.0	57.3	44.4	40.3	28.2	45.7	89	—10		
Cooperstown	17.0	20.7	22.3	46.3	59.5	63.3	67.8	66.6	56.5	44.3	41.1	24.0	44.1	89	—23	Apr. 23†	Oct. 9
Cortland	20.0	22.2	23.2	47.6	60.2	63.4	69.2	67.6	59.3	44.8	42.8	26.2	45.5	93	—23	Apr. 24†	
Elka Park							67.2	[e]67.1	56.8								
Elmira	24.6	27.2	28.2	54.2	65.2	67.7	73.4	71.6	61.8	47.2	45.2	30.0	49.7	96	—10	Apr. 9†	
Fleming	22.8	24.6	24.8	50.4	62.6	66.4	71.7	70.4	60.8	46.5	44.0	27.4	47.7	93	—17	Apr. 9†	Oct. 10
Fort Niagara	24.4	24.8	26.4	47.6	60.0	65.6	72.8	71.8	60.8	47.6	44.0	31.0	48.1	93	— 5		
Friendship	23.2	25.2	24.4	49.5	62.0	64.1	68.2	65.6	58.2	43.6	42.2	27.4	46.1	93	—23	Apr. 23†	Sept. 23
Glens Falls	17.7	20.8	24.8	47.2	59.1	64.6		68.7	58.8	45.4	40.2	22.4			—16	Apr. 30†	Sept. 21
Gloversville	16.6	20.1	22.8	46.6	59.4	63.0	69.8	67.7	58.2	44.8	39.6	23.3	44.3	92	—25	Apr. 12†	Sept. 23
Hamilton	17.3	21.2	21.6	46.8	59.0											May 20†	
Honeymead Brook	20.6	25.2	26.4	48.9	62.2	64.3	70.8	68.6	59.7	46.6	41.8	24.2	46.6	91	—18	Apr. 23†	Sept. 21
Humphrey	24.0	24.2	24.9	49.0	62.0	62.9	67.5	65.6	57.4	44.2	41.6	28.2	46.0	90	—16	Apr. 23†	Sept. 23
Ithaca	22.8	25.3	25.2	50.4	62.4	65.3	70.9	69.9	60.6	46.7	44.7	27.7	47.7	94	—18	Apr. 9†	Oct. 10
Jamestown	25.6	25.8	26.6	50.8	63.0	64.4	69.0	66.9	58.8	45.8	42.8	[f]26.6	47.2	89	—15	Apr. 23†	Sept. 23
Lebanon Springs	18.8	24.6	25.7	46.1	59.0	62.6	70.2	68.0	58.3	45.2	40.6	23.6	45.2	93	—21	Apr. 24†	Sept. 20
Lockport				51.2	63.2	68.4	73.2	70.4	60.0	47.2	42.6	30.3		94		Apr. 9†	Sept. 23
Lowville	15.4	18.8	21.0	44.4	59.0	62.4	69.2	66.6	56.4	43.4	39.0	20.2	43.0	91	—32	May 20†	Sept. 23
Lyons	24.2	25.8	26.2	50.7	63.3	66.1	[f]71.4	70.0	60.3	47.4	43.8	29.0	48.2	98	—14	Apr. 9†	
Madison Barracks	16.1	19.7	23.1	46.2	59.2	63.0	69.1	[e]71.0	[e]58.4	46.3	41.2	22.2	44.6	91	—40		
Malone	12.2	15.3	19.6	43.0	58.4	62.0	67.6	65.6								May 20†	
Manhattan Beach							71.3	71.2	63.6	51.5	47.8	30.6					
Middletown	21.3	22.5	27.4	49.6	65.7	67.8	71.6									Apr. 10†	Oct. 9
Mohonk Lake	20.3	23.8	26.3	46.8	61.6	66.4	67.0	67.2	[e]60.8	[e]47.2	43.8	27.2	46.5	89	—14	Apr. 11†	
Mount Morris	24.9	26.6	26.7	50.6			73.3	[d]70.4	60.4	55.5						Apr. 24†	Oct. 8
New Lisbon	17.2	21.2	21.7	46.0	57.6	60.8	66.7	64.8	56.2	42.8	39.6	23.0	43.1	91	—26	May 20†	Sept. 2
*New York	27.6	30.2	32.1	50.4	63.8	66.5	73.4	73.0	64.8	51.9	48.0	32.1	51.2	94	— 6	Apr. 8†	Nov. 14
North Hammond (*a*)	15.3	17.2	21.6	47.1	61.2	66.7	70.7	70.0	58.8	45.2	41.1	22.8	44.8	92	—36	Apr. 23†	Oct. 8
North Lake									54.6	41.7	36.0	18.4					
Number Four	15.4	17.5	18.6	42.5	56.2	59.0	65.0	63.2	54.3	41.9	37.2	18.5	40.8	85	—31	May 20	Sept. 23
Ogdensburg	14.2	17.3	22.5	45.2	59.5	64.8	69.8	69.0	59.2	46.0	39.8	22.9	44.2	91	—28	Apr. 22†	
Oneonta	21.9	26.0	27.3	49.9	62.6	65.0	71.2	69.4	60.6	47.3	45.4	28.5	47.9	96	—17	Apr. 23†	
*Oswego	20.6	22.6	24.5	47.4	58.1	63.0	69.4	69.4	59.6	47.0	42.8	26.6	45.9	90	—20	Apr. 9†	Oct. 10
Oxford	20.1	23.7	24.6	47.2	60.0	63.8	69.6	67.4	58.2	43.8	40.1	24.0	45.2	95	—25	Apr. 23†	
Palermo	18.4	21.0	22.6	47.4	59.5	63.4	69.9	68.7	59.6	46.2	41.2	23.6	45.1	96	—30	Apr. 11†	Oct. 9
Perry City	20.7	22.8	22.0	48.9	61.1	64.5	70.1	66.8	57.0	43.6	41.0	25.4	45.3	93	—20	Apr. 23†	
Pittsford	[e]26.4	25.2	25.0	50.2	62.2	65.4	70.4	68.8	58.6	46.3	43.1	29.0	47.6	91	—12	Apr. 9†	
Plattsburg Barracks	14.4	16.0	21.5	43.3	58.4	64.1	69.0	67.4	57.1	43.7	38.9	19.2	42.8	95	—25		
Port Jervis	21.8	26.0	28.4	51.3	64.0	66.2	72.2	69.6	61.4	47.7	43.3	27.5	48.3	93	—11	Apr. 11†	
Potsdam	11.2	13.9	19.1	44.4	58.2	62.7	67.8	66.6	57.3	41.9	37.1	20.2	41.7	89	—31	Apr. 30†	
Poughkeepsie	21.0	27.2	28.4	50.2	62.6	64.5	72.5	72.4	60.7	48.2	43.2	23.2	47.8	96	—11	Apr. 23†	
*Rochester	22.8	24.6	25.4	50.4	63.2	66.4	71.5	69.7	59.8	47.2	42.6	28.8	47.7	92	—10	Apr. 9†	Oct. 19
Rome	20.6	21.8	24.2	48.5	60.4	65.2	70.2	67.8	58.9	45.2	39.1	22.2	45.3	96	—19	Apr. 22†	
Romulus	23.2	24.9	25.2	51.3	63.4	66.2	71.5	70.2	61.2	47.1	44.2	28.6	48.1	95	—17	Apr. 9†	
Saranac Lake	11.7	15.1	17.7	40.2	58.5	62.0	66.8	65.5	55.3	41.8	35.8	16.1	40.5	90	—38	May 19†	Sept. 23
Setauket	27.8	31.3	33.1	48.7	61.5	65.7	72.8	72.2	63.9	52.5	48.4	32.8	50.9	91	— 5	Apr. 10†	
South Canisteo	23.6	24.2	23.4	48.0	61.3	62.1	67.4	65.9	58.0	44.6	43.0	27.1	45.7	92	—17	Apr. 23†	Sept. 1
South Kortright	17.9	23.3	24.6	45.8	58.4	61.6	68.0	65.8	57.1	42.6	39.8	23.6	44.0	93	—30	May 7†	
Turin	14.2		19.5	42.7	57.6											Apr. 22†	
Varysburg	21.8	24.0	23.2	49.3	62.0	66.0	69.8	68.0	59.0	44.3				94		May 6†	Sept. 23
Victor	22.4	24.8	25.2	[k]45.2		66.2	[f]72.9	69.8	[f]59.7	44.6						Apr. 11†	
Wappingers Falls	22.4	28.2	31.2	52.8	65.8	67.6	74.4	73.6	60.6	50.0	45.4	25.6	49.8	96	—20	Apr. 10†	Oct. 9
Watertown			24.7	49.8	60.5	65.2	68.8	70.3	58.1	45.6	41.2	23.0		96		Apr. 23†	Sept. 23
Waverly	23.6	26.2	26.4	51.0	62.8	65.0	71.0	70.2	61.6	46.8	44.4	28.6	48.1	97	—17	Apr. 23†	Oct. 10
Wedgwood	22.0	22.6	23.9	49.3	62.5	66.0	71.0	70.3	60.8	45.1	42.2	26.4	46.8	96	—17	Apr. 10†	Oct. 10
Westfield	27.7	28.0	26.7	50.8	63.0	66.5	71.6	69.0	60.0	47.5	44.8	31.9	49.0	98	—12	Apr. 9†	
Westpoint	22.8	26.4	29.5	50.3	63.6	65.4	73.3	73.0	63.0	49.2	45.5	27.6	49.1	97	—11		
Willetspoint	26.5	30.4	31.3	48.8	63.3	66.4	73.2	73.0	64.8	51.6	47.1	31.6	50.7	95	— 4		
North Carolina.																	
*Asheville	31.1	37.9	43.7	60.3	68.6	68.6	72.4	74.4	66.6	54.2	50.8	38.6	55.6	92	4	Apr. 9	Oct. 8
Beaufort			52.2	62.4	72.8	76.1	79.2	78.6	74.7	62.6	61.5	47.2		91		Mar. 21	Nov. 14
Biltmore					68.5	68.8	72.4	73.2	66.4	53.4	50.5	38.2		94			Oct. 8
*Chapelhill	38.2	41.8	46.4	63.8	73.9	75.8	79.8	80.0	71.6	57.7	[e]55.0	39.0	60.3	102	7	Apr. 8	Oct. 19
*Charlotte	40.1	44.3	48.2	64.8	75.2	74.1	78.0	79.4	72.6	59.0	55.6	41.6	61.1	99	6	Mar. 21	Nov. 8
Edenton			48.8	61.7	71.4	74.4	79.5	[f]80.4	71.2	59.0	57.0	41.2		95	11	Apr. 8	Oct. 19
Experimental Farm		[b]44.0	48.0	64.8	[e]74.3	75.3	80.1	78.6	72.6	[e]58.2	[e]54.8	41.4		98	8	Apr. 8	Oct. 19
Falkland (*a*)	38.1	46.7	49.6	63.1	72.5	75.7	80.0	81.4	75.0	61.6				100		Apr. 8	
*Fayetteville	41.0	45.6	51.0	65.0	74.6	75.3	79.6	78.7	72.3	60.4	57.0	41.4	61.6	101	8	Mar. 13	Oct. 19
Flatrock				58.0	67.8	68.4	72.5	72.4	64.7	52.6	[e]48.8			91		Apr. 9	Oct. 19
*Goldsboro					75.4	77.2	81.0	80.7	72.8	58.8	56.8			105			Oct. 19
*Greensboro	38.4	43.5	47.8	62.4	72.1	72.6	77.2	80.0	72.6	58.7	56.9	41.8	60.3	101	7	Apr. 8	Oct. 19
*Hatteras	41.8	46.6	48.8	59.1	70.8	75.2	78.8	79.4	73.8	63.0	61.2	46.1	62.0	91	15	Mar. 14	Dec. 6
Henderson	38.4	42.4	46.6	62.9	73.6	74.5	79.5	79.6	71.8	57.9	54.4	39.6	60.1	104	7	Apr. 8	Oct. 19
Highlands	33.3	34.7	39.8	55.0	63.2	63.4	67.6	67.8	61.1	50.3	47.8	36.4	51.7	84	— 5	Apr. 9	Sept. 24
Highpoint	36.8	41.2	47.2	65.0	74.6											Apr. 8	
Horse Cove	36.5	38.9	43.1	59.8	68.8	68.7	72.6	73.9	67.3	55.1	50.8	40.4	56.3	99	0	Apr. 9	Oct. 19
Jacksonville					[f]73.6	76.8	81.0	79.8	73.6	60.4	58.6	42.8		99		Mar. 25	Oct. 19
Jefferson		36.8	39.5	57.3	67.8	67.3	72.4	72.4	61.7					93		Apr. 8	Sept. 24
*Kittyhawk	39.0	43.6	46.8	58.4	68.9	74.2	79.2	79.3	72.0	60.2	58.6	[d]44.0	60.4	95	11	Apr. 4	Dec. 31†
Lenoir	36.1	40.0	45.1	61.3	71.4	71.1	74.4	74.9	66.7	54.9	51.4	38.1	57.1	91	4	Apr. 8	Oct. 19
Linville	31.2	32.6	36.4	50.6	62.2	63.0	67.3	65.6	58.6	47.4	45.2	33.1	49.4	82	9	Apr. 11	Sept. 24
Littleton	37.2	41.8	46.0	61.4	[e]72.2	[e]74.6	78.5	78.3	69.2	56.4	[e]53.5	38.8	59.0	104	7	Apr. 8	Oct. 19
Louisburg	37.8	42.8	47.4	63.2	73.0	74.0	79.6	79.0	71.2	56.7	54.2	37.4	59.7	103	2	Apr. 8	Oct. 19
*Lumberton	43.0	46.7	50.6	66.1	76.2	77.5	82.4	80.6	73.5					101		Mar. 22	
Lynn (*b*)	37.2	41.2	45.8	61.0	69.8	71.6	73.9	73.6	66.8	55.8	51.0	38.5	57.2	95		Mar. 25	Oct. 20
Marion	38.2	44.4	48.8	64.3	72.7	71.5	75.1	75.6	69.2	57.8	54.8	42.1	59.5	98	9	Apr. 9	Oct. 19

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
North Carolina—Cont'd.																	
Mocksville	39.6	43.9	48.3	65.2	74.6	74.6	78.2	79.0	71.6	59.2	57.6	42.2	61.2	102	5	Apr. 8	Oct. 19
*Moncure	38.2	43.8	48.2	63.5	73.9	74.2	79.4	78.2	70.6	.....	.....	39.6	.....	100	.....	Apr. 5	Oct. 19
Monroe	.....	45.4	48.8	64.4	73.7	74.0	78.2	78.3	73.0	58.3	55.8	41.5	.....	100	.....	Apr. 9	Oct. 19
Morganton (a)	36.4	42.4	47.3	64.1	72.7	72.2	73.4	77.5	68.9	54.9	48.1	36.6	57.9	97	8	Apr. 9	Oct. 19
Mountairy	35.8	38.7	43.4	60.6	70.4	70.8	74.8	74.9	67.2	54.6	51.4	37.4	56.7	97	3	Apr. 8	Oct. 8
Mount Pleasant	39.4	44.4	48.4	64.0	74.2	73.8	78.5	79.1	72.5	58.4	55.5	40.0	60.7	98	5	Apr. 5	Oct. 19
*Newbern	43.9	48.4	53.2	65.3	74.6	77.2	80.6	80.7	74.2	62.8	63.1	48.5	64.4	98	11	Mar. 25	Dec. 3
*Oakridge	38.9	41.7	47.1	64.3	72.7	72.8	77.8	.....	69.0	56.8	53.6	38.9	.....	.....	3	Apr. 8	Oct. 19
Pittsboro	37.6	41.4	45.8	63.2	72.5	73.2	79.0	77.6	69.9	56.7	53.2	37.9	59.0	96	5	Apr. 7	Oct. 19
*Raleigh	39.1	43.8	48.2	63.6	74.0	74.6	79.6	78.7	71.8	58.8	55.3	40.4	60.7	99	8	Apr. 8	Nov. 14
Raleigh (a)	41.5	44.8	50.1	64.4	.....	.....	81.1	80.4	73.7	.....	56.5	.....	.....	.....	.....	.....	.....
Rockingham	42.9	46.8	52.5	67.0	76.1	76.8	81.0	80.6	75.0	62.5	57.6	41.7	63.4	103	8	Apr. 5	Oct. 19
Roxboro	36.6	41.6	45.5	62.4	71.9	72.2	78.0	[c]78.2	[c]69.9	56.3	54.2	38.2	58.8	100	4	Apr. 8	Oct. 19
Salem	.....	40.6	44.6	63.6	73.6	71.6	77.3	79.0	70.8	56.4	53.4	38.8	.....	101	5	Apr. 8	Oct. 19
Salisbury	37.8	41.5	45.8	63.8	75.6	74.2	78.6	80.3	71.6	56.0	55.9	40.9	60.1	102	5	Apr. 8	Oct. 19
Saxon	36.2	41.4	47.0	62.3	73.4	73.9	78.8	79.2	70.6	57.5	53.2	37.4	59.3	105	3	Apr. 8	Oct. 19
Selma	40.3	44.2	49.8	64.4	74.4	75.2	81.2	79.6	71.2	58.0	56.4	40.0	61.2	102	10	Apr. 8	Oct. 19
Settle	39.8	.....	.....	[c]65.8	73.4	73.5	78.4	80.2	71.8	57.1	53.0	38.2	.....	102	— 4	Apr. 8	Oct. 19
Skyuka	38.0	38.8	43.1	58.4	65.8	65.4	69.0	70.2	63.4	56.1	52.3	44.6	55.4	86	— 2	Apr. 9	Nov. 9
Sloan	42.9	46.6	52.1	64.5	74.6	76.1	80.0	79.0	73.2	60.3	58.5	43.4	62.6	99	11	Apr. 5	Oct. 19
Soapstone Mount	37.0	41.0	46.4	60.6	70.7	71.5	76.0	75.4	67.9	54.2	53.0	.....	.....	99	.....	Apr. 8	Oct. 19
Southern Pines[1]	44.4	.....	54.0	65.9	.....	.....	83.2	.....	74.8	60.5	59.6	43.8	.....	.....	.....	.....	Oct. 19
Southern Pines[2]	.....	.....	.....	.....	.....	.....	.....	.....	.....	59.4	58.6	42.2	.....	.....	.....	.....	.....
Southport	45.5	48.7	52.8	62.7	74.3	76.8	80.0	79.2	75.4	63.6	60.9	46.3	63.9	93	11	Mar. 21	Nov. 14
Springhope (a)	37.5	42.8	46.5	61.2	72.3	73.9	78.7	78.0	70.0	56.7	52.2	36.9	58.9	100	4	Apr. 8	Oct. 19
Tarboro	39.6	44.0	48.8	64.0	74.0	75.7	[c]80.6	79.6	71.9	58.2	55.6	39.8	61.0	105	6	Apr. 8	Oct. 19
Waynesville	36.0	38.0	44.2	58.3	67.4	67.9	70.8	72.0	64.4	53.0	50.0	37.7	55.0	90	— 6	Apr. 10	Oct. 19
Weldon	37.9	42.7	47.2	62.2	73.4	75.0	80.0	77.6	69.4	56.1	52.9	38.3	59.4	101	8	Apr. 8	Oct. 20
Wilkesboro	.....	.....	.....	[c]59.4	71.5	71.0	74.4	75.8	68.4	.....	50.0	.....	.....	97	.....	Apr. 8	.....
Willeyton	37.8	43.9	48.0	61.2	71.6	74.2	78.6	77.2	69.9	56.9	54.5	39.1	59.4	97	10	Apr. 9	Oct. 19
*Wilmington	44.2	48.7	52.2	63.7	74.4	76.0	79.8	79.0	74.2	61.7	60.2	45.8	63.3	98	12	Apr. 5	Dec. 1
North Dakota.																	
Amenia	5.9	14.4	[c]13.6	41.8	59.8	65.7	[c]68.3	65.4	[c]54.0	40.5	8.8	13.4	37.6	96	—34	Apr. 22	Sept. 11
Ashley	11.6	18.0	16.0	[c]42.0	58.0	66.8	.....	69.6	.....	.....	.....	.....	.....	.....	.....	Apr. 24	Sept. 19
*Bismarck	8.1	16.3	19.0	42.2	57.3	65.6	68.8	67.2	54.4	42.0	7.2	19.0	38.9	103	—23	May 1	Sept. 10
Bottineau	.....	.....	.....	.....	54.7	63.6	64.8	62.9	52.0	38.8	.....	.....	.....	92	.....	May 18	Sept. 10
Buxton	2.8	12.0	15.4	39.3	57.0	64.4	66.1	63.8	53.4	40.2	9.8	13.6	.....	90	.....	May 3	Sept. 11
Churchs Ferry	4.9	13.4	15.8	37.3	56.2	65.2	67.2	63.6	52.4	38.4	4.8	13.2	35.7	102	—30	May 18	Sept. 3
Coalharbor	10.2	18.1	15.6	39.4	54.8	64.9	67.6	66.3	52.5	40.4	5.4	17.2	36.9	100	—28	May 1	Sept. 10
Dickinson	8.2	17.2	17.8	40.6	52.7	61.3	66.6	66.2	51.7	38.8	8.2	21.7	37.8	102	—24	June 25	Aug. 6
Ellendale	6.8	14.5	17.0	.....	.....	.....	67.2	67.6	53.9	42.8	.....	[c]22.4	.....	.....	.....	.....	Sept. 2
Falconer	4.3	[c]10.6	17.5	40.4	56.4	64.8	68.2	65.1	51.6	38.9	6.8	18.0	40.4	106	—30	.....	.....
Fargo	4.9	15.8	12.4	42.0	58.8	67.6	67.7	65.2	53.8	[c]41.4	8.6	12.6	40.4	95	—33	Apr. 22	Aug. 31
Forman	12.8	24.9	15.4	.....	59.8	65.3	67.7	66.8	55.8	[c]44.8	10.8	15.2	.....	101	—35	May 23	Sept. 3
Fort Berthold	10.1	20.6	26.3	43.2	60.0	67.1	73.2	69.0	57.4	.....	.....	.....	.....	101	.....	.....	.....
Fort Yates	3.9	12.8	18.6	44.0	58.6	67.7	70.8	67.8	55.8	41.8	10.6	20.6	40.6	.....	.....	Apr. 22	Sept. 18
Gallatin	.....	.....	14.9	38.6	56.8	64.9	67.0	65.0	52.9	39.6	7.0	14.4	36.5	100	—42	May 19	Aug. 31
Glenullin	—0.4	10.2	18.2	42.7	55.6	65.4	.....	.....	.....	.....	5.6	26.0	.....	.....	.....	May 2	.....
Grafton	6.2	15.4	[c]11.4	37.8	56.2	65.2	65.8	63.4	51.8	38.6	7.8	12.1	35.0	96	—36	Apr. 25	Aug. 27
Grand Rapids	9.6	18.4	13.9	40.2	57.4	64.6	66.4	64.3	53.0	41.0	8.8	16.6	37.4	98	—34	.....	.....
Jamestown	4.0	11.9	17.6	41.4	58.6	66.6	69.2	67.3	55.1	43.0	10.4	17.4	39.6	94	—24	Apr. 21	Sept. 19
Kelso	1.6	.....	.....	[c]42.2	[c]60.8	[c]65.2	[c]69.0	.....	.....	.....	12.0	13.3	.....	.....	—33	Apr. 22	.....
Lakota	.....	.....	.....	.....	56.1	64.8	.....	63.0	.....	.....	.....	.....	.....	.....	.....	.....	Aug. 31
Langdon	.....	11.7	16.4	[c]41.4	59.0	.....	64.4	60.7	[c]49.3	.....	.....	.....	.....	.....	.....	.....	.....
Larimore	2.6	10.4	[c]13.8	.....	.....	.....	.....	[c]61.0	.....	.....	.....	.....	.....	.....	.....	May 21	Sept. 19
Lemert	2.8	12.1	15.7	38.5	55.8	.....	65.6	60.7	50.1	36.9	4.4	13.3	.....	93	—35	May 2	Aug. 16
McKinney	.....	.....	17.2	40.2	60.5	.....	.....	.....	53.4	40.0	10.2	16.2	.....	.....	.....	Apr. 23	Sept. 10
Mayville	[c]11.2	23.0	22.4	41.9	56.9	67.1	71.4	67.8	53.0	41.2	9.2	[c]27.4	41.0	107	—31	May 2	Sept. 2
Medora	—0.6	7.9	12.2	35.8	54.4	65.2	66.2	62.4	49.8	36.6	6.6	12.0	34.0	97	—39	May 18	Sept. 9
Milton	0.5	10.8	14.8	37.9	57.7	67.5	68.7	63.2	53.3	38.6	9.6	[c]18.5	36.8	103	—38	May 16	Sept. 11
Minto	7.5	15.4	15.6	40.6	56.6	65.4	68.3	66.3	53.4	39.9	6.6	16.2	37.6	104	—25	Apr. 24	Sept. 3
Napoleon	.....	20.2	18.2	42.4	55.2	65.5	71.0	68.8	56.3	39.2	15.5	30.6	.....	100	.....	May 14	Sept. 9
New England City	13.5	23.1	20.1	[c]44.8	53.0	63.5	[c]68.4	64.1	52.9	[c]41.6	10.4	27.2	40.2	95	—27	Apr. 23	Sept. 9
Oakdale	2.0	12.6	14.8	38.3	54.5	66.4	69.9	65.4	50.2	39.8	3.8	13.2	35.9	104	—31	Apr. 24	Aug. 26
Portal	5.9	13.4	13.0	41.5	58.8	[c]66.2	68.0	65.6	55.4	[c]46.0	11.5	16.2	38.5	96	—33	Apr. 21	Sept. 3
Power	1.6	11.0	14.2	34.0	52.8	63.4	65.8	62.5	48.6	39.4	6.0	19.0	34.9	92	—32	May 18	Sept. 2
St. John	.....	.....	17.0	39.4	57.2	67.0	67.2	64.4	53.3	39.3	5.9	13.4	.....	100	.....	May 22	Sept. 3
Sheyenne	[c]6.8	13.3	[c]15.5	40.8	56.1	65.5	68.1	.....	[c]51.1	[c]39.1	.....	.....	.....	.....	.....	Apr. 23	Sept. 10
Steele	.....	9.2	13.2	37.3	54.4	63.6	65.8	63.1	51.2	38.4	4.6	12.8	.....	98	.....	May 18	Sept. 3
Towner	3.8	13.1	16.0	40.0	57.8	65.5	68.0	63.7	53.6	40.9	10.5	14.6	37.3	90	—20	Apr. 20	Sept. 19
University	.....	.....	.....	.....	.....	.....	62.4	61.2	.....	[c]35.7	[c]9.6	[c]15.2	.....	.....	.....	.....	Aug. 16
Valley City	9.2	18.2	17.4	44.9	60.2	66.2	68.0	66.6	56.1	43.0	15.3	18.9	40.3	93	—29	.....	Sept. 11
Wahpeton	6.0	12.8	12.9	40.6	59.1	67.2	66.2	63.4	51.0	37.3	9.9	14.6	36.8	.....	.....	Apr. 17	Aug. 27
Wildrice (b)	6.3	15.0	18.0	40.8	53.8	64.6	67.6	64.9	52.8	41.2	6.6	19.6	37.6	94	—26	Apr. 24	Sept. 10
*Williston	1.3	10.5	13.8	38.2	54.6	[c]64.2	[c]66.5	63.2	52.0	40.0	[c]3.0	11.6	34.9	99	—40	Apr. 25	Aug. 16
Willow City	—2.4	7.7	11.4	35.0	54.6	62.7	63.0	61.3	49.8	36.3	5.6	12.6	33.1	91	—39	May 18	Aug. 31
Woodbridge	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ohio.																	
Akron	28.6	28.2	29.6	55.1	66.6	67.8	71.7	70.4	61.3	47.0	44.2	31.8	50.2	92	— 6	Apr. 9	Oct. 9
Annapolis	.....	30.4	31.0	54.8	.....	.....	71.0	70.2	61.6	46.8	44.0	31.6	.....	.....	.....	Apr. 9	Oct. 24
Ashland	27.4	27.4	29.1	54.6	65.9	68.2	70.9	69.0	59.4	45.8	41.9	30.4	49.2	92	— 8	Apr. 7	Oct. 9
Ashtabula	27.0	26.6	28.8	50.0	63.6	66.5	71.0	70.1	61.5	48.8	45.0	31.7	49.2	95	— 4	Apr. 9	Oct. 3
Athens	31.8	33.5	36.2	59.6	69.2	70.3	74.1	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 8	.....
Auburn	25.8	26.8	26.8	51.2	64.4	65.0	70.0	67.0	59.0	.....	40.2	27.0	.....	92	— 9	Apr. 23	Sept. 23
Baugorville	27.8	29.4	30.4	55.5	67.0	69.2	72.3	70.6	60.9	47.8	43.2	30.2	50.4	94	— 7	Apr. 8	Sept. 20

[1] S. S. Thomas.

[2] A. Rhodes.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Ohio—Continued.																	
Bellefontaine	26.2	27.8	29.8	54.4	66.8	68.4	75.2	72.5	62.9	51.4	45.4	32.2	51.1	95	— 7	Apr. 7	Sept. 20
Benton Ridge	27.1	29.5	30.9	57.0	68.2	69.7	73.2	72.9	61.8	49.2	44.4	31.2	51.3	98	—15	Apr. 22	Sept. 20
Berlin Heights	.....	.....	.....	54.6	66.9	68.4	73.2	72.2	61.0	47.6	[f]41.8	.....	.....	98	.....	Apr. 23	Oct. 9
Bethany	30.8	33.0	35.2	60.7	71.4	72.7	76.1	74.4	65.8	54.4	47.3	38.0	55.0	98	— 5	Apr. 10	Sept. 23
Bigprairie	29.1	28.4	29.6	55.6	66.3	67.4	71.7	69.0	60.5	46.4	43.4	30.8	49.9	94	— 4	Apr. 23	Oct. 9
Binola	28.1	28.6	30.5	57.6	71.0	72.0	75.6	74.4	64.0	49.4	46.5	33.6	52.6	96	—11	Apr. 8	Oct. 3
Bissells	25.8	26.2	28.2	52.8	65.4	68.9	.....	.....	.....	47.6	45.0	30.6	.....	.....	—13	Apr. 9	Sept. 22
Bladensburg	29.8	30.4	32.2	55.1	66.0	67.6	71.6	70.2	60.8	47.1	.....	30.6	.....	.....	— 5	Apr. 9	Sept. 20
Bloomingburg	31.6	32.4	34.0	59.2	68.5	68.8	72.7	71.4	62.6	49.7	46.3	35.9	52.8	94	— 5	Apr. 8	Sept. 23
Bowling Green	26.8	28.4	30.8	55.0	67.0	68.7	71.4	71.2	60.6	47.2	42.9	29.5	50.0	97	—13	Apr. 10	Oct. 8
Bucyrus	28.2	28.9	30.8	56.7	68.9	71.2	74.2	72.4	.....	.....	.....	.....	.....	.....	.....	Apr. 8	.....
Cambridge	29.7	30.8	32.0	54.9	67.2	67.6	71.6	70.2	61.4	46.7	45.0	31.4	50.7	92	— 3	Apr. 9	Sept. 23
Camp Dennison	33.0	34.2	36.7	61.4	70.6	72.8	76.4	75.2	65.2	51.6	47.4	36.7	55.1	95	— 2	Apr. 9	Sept. 23
Canal Dover	29.4	30.2	31.6	55.0	67.5	68.0	72.2	70.9	62.6	46.6	44.0	30.5	50.7	94	— 4	Apr. 9	Sept. 24
Canton	29.4	30.0	31.5	55.7	67.2	68.4	72.3	70.2	62.0	47.6	45.7	32.3	51.0	93	—10	Apr. 8	Oct. 9
Cardington	28.2	.....	31.7	54.8	66.2	.....	.....	.....	.....	47.9	.....	.....	.....	.....	.....	Apr. 8	Sept. 22
Carrollton	27.7	27.6	28.8	52.6	65.8	65.8	[e]69.9	69.6	60.4	47.8	45.0	31.8	49.4	94	— 7	Apr. 23	Sept. 23
Celina	31.4	33.3	35.4	58.9	69.0	70.7	73.6	72.8	63.9	53.2	46.5	37.5	53.9	94	— 8	Apr. 8	Oct. 19
Cherryfork	31.8	33.4	35.2	59.8	70.0	72.6	76.8	75.2	66.2	50.4	45.2	34.6	54.3	100	— 6	Apr. 8	Sept. 23
*Cincinnati	33.6	35.0	36.8	61.6	71.2	73.1	76.2	75.1	65.5	53.4	48.0	38.1	55.6	96	— 2	Apr. 4	Oct. 8
Circleville	32.0	33.6	35.9	60.2	69.6	70.2	74.4	73.4	65.2	51.6	46.8	36.2	54.1	94	— 2	Apr. 8	Sept. 20
Clarksville	31.4	32.6	34.2	59.3	69.2	70.4	74.8	73.4	63.8	50.7	46.4	35.6	53.5	93	— 4	Apr. 7	.....
*Cleveland	27.6	27.7	30.2	53.4	65.8	66.6	71.7	70.2	61.6	48.6	44.2	32.6	50.0	93	— 4	Apr. 8[1]	Oct. 4
Cleveland [1]	28.6	28.4	30.4	53.5	65.8	67.0	71.8	70.1	61.6	48.6	45.2	33.2	50.2	93	— 6	Apr. 8	Oct. 8
Clifton	[c]30.0	31.4	33.2	58.4	68.7	70.0	74.4	72.5	63.0	50.2	44.6	33.7	52.5	96	— 6	Apr. 8	Sept. 19
Coalton	31.6	32.8	34.6	58.2	67.4	72.2	73.7	71.9	63.8	.....	45.3	34.8	.....	96	— 9	Apr. 8	.....
Colebrook	26.3	27.8	28.2	54.5	68.0	69.4	73.2	69.7	60.4	46.8	43.9	29.0	49.8	93	— 8	Apr. 9	Oct. 9
*Columbus	30.8	31.8	33.7	58.6	69.7	70.8	74.4	72.9	63.2	50.4	45.2	34.6	53.0	95	— 3	Apr. 8[1]	Sept. 23
Dayton	32.0	33.8	35.6	60.0	71.2	72.0	76.5	74.4	64.4	51.0	46.8	36.2	54.5	96	— 5	Apr. 8	Oct. 19
Defiance	27.6	29.8	32.9	55.4	69.0	70.0	74.2	72.9	61.2	48.1	43.6	30.0	51.2	101	— 9	Apr. 8	Sept. 20
Delaware	.....	[a]30.4	[a]32.2	.....	.....	.....	.....	.....	62.2	49.8	45.4	33.6	.....	.....	.....	Apr. 8	Sept. 23
Demos	29.6	30.4	32.2	56.4	68.0	69.2	73.1	70.8	62.8	48.0	45.1	32.4	51.5	89	— 5	Apr. 9	Sept. 23
Dupont	27.0	28.6	31.2	56.0	66.8	70.2	72.7	71.4	57.5	47.6	43.2	32.1	50.4	94	— 9	Apr. 8	Sept. 21
Elyria	28.7	28.3	30.2	55.3	65.9	67.6	72.6	71.5	61.7	48.6	44.2	31.3	50.5	96	— 5	Apr. 8	Sept. 24
Fairport Harbor (*h*)	28.2	29.7	29.8	50.4	64.6	67.7	72.5	72.0	63.3	51.2	46.9	34.4	50.9	94	— 6	.....	.....
Fayetteville	31.2	32.5	34.4	59.8	69.6	71.7	75.0	73.1	63.9	50.2	45.4	35.2	53.5	93	— 4	Apr. 8	Sept. 23
Findlay	27.5	29.2	32.4	57.6	69.4	70.6	73.5	72.8	61.2	48.0	43.8	30.6	51.4	100	—10	Apr. 8	Sept. 23
Fostoria	26.6	27.6	31.6	56.0	74.0	71.9	73.8	74.2	60.2	47.8	43.7	30.4	51.5	98	— 9	Apr. 9	Sept. 23
Frankfort	32.3	33.7	35.0	59.8	68.4	69.0	72.8	71.9	62.8	49.2	46.8	35.0	53.1	93	— 2	Apr. 8	Sept. 20
Garrettsville	27.9	28.1	28.8	51.6	63.9	65.3	70.0	68.2	60.2	47.1	44.8	30.3	48.9	96	— 4	Apr. 23	Sept. 24
Granville	29.2	[c]29.5	32.2	57.8	67.6	[c]69.1	73.2	71.2	61.6	47.8	44.2	32.2	51.3	94	— 3	Apr. 9	Sept. 23
Gratiot	29.8	31.2	33.4	57.4	67.9	68.0	71.6	71.2	61.8	48.8	45.0	33.3	51.6	91	— 5	Apr. 8	Oct. 8
Greenfield	31.8	33.6	35.2	59.2	[c]70.2	71.2	75.2	73.6	64.8	50.8	47.9	[c]36.0	54.1	94	— 2	Apr. 8	Oct. 19
Greenhill	27.2	28.2	29.0	53.2	65.4	66.8	71.0	69.6	61.3	46.3	43.5	29.6	49.3	94	— 7	Apr. 9	Sept. 23
Greenville	28.3	30.8	32.6	57.1	67.2	68.0	71.8	70.4	60.8	48.6	43.8	32.8	51.0	89	— 7	Apr. 8	Sept. 23
Hackney	35.2	31.7	39.6	57.0	66.2	71.0	74.1	69.2	62.3	48.7	.....	.....	.....	96	.....	.....	.....
Hanging Rock	33.6	34.5	36.1	60.0	69.2	71.0	75.2	75.1	66.4	51.4	49.2	36.6	55.0	96	—13	Apr. 8	Sept. 20
Hedges	25.2	28.2	31.8	55.6	66.4	68.4	72.0	70.8	59.8	47.0	42.3	30.2	49.8	97	—14	Apr. 10	Sept. 20
Hillhouse	25.6	26.1	27.4	51.8	64.0	60.4	70.0	68.4	60.2	46.8	43.0	29.6	47.8	93	—16	Apr. 9	Oct. 22
Hillsboro	31.8	32.6	34.1	58.8	68.6	72.2	76.6	73.8	64.6	51.4	47.6	35.8	54.0	95	— 5	Apr. 8	Sept. 22
Hiram	26.0	25.0	28.8	53.0	65.5	67.2	70.8	68.8	60.2	46.5	43.2	30.0	48.8	92	— 8	Apr. 9	Oct. 3
Hudson	28.6	27.2	29.4	54.6	68.6	71.0	75.0	71.4	61.9	48.0	44.2	30.5	50.9	95	—12	Apr. 9	Sept. 23
Jacksonboro	30.8	31.1	35.1	59.9	70.8	71.8	74.8	75.0	64.8	51.8	44.4	35.2	53.8	97	—11	Apr. 8	Sept. 23
Kenton	28.2	29.2	31.8	57.4	68.2	69.4	73.6	71.6	62.3	49.3	44.2	32.6	51.4	94	— 8	Apr. 9	Sept. 23
Killbuck	28.9	30.1	31.2	55.8	67.2	67.8	71.1	69.8	60.7	46.2	43.8	31.1	50.3	94	— 4	Apr. 9	Sept. 19
Lancaster	30.0	31.4	32.7	57.2	68.3	67.8	72.5	70.2	61.2	48.3	44.4	33.8	51.5	92	— 2	Apr. 8	Sept. 23
Leipsic	26.0	28.5	31.0	55.2	66.4	69.4	72.8	70.3	59.9	46.4	41.5	28.8	49.7	97	—10	Apr. 8	Sept. 20
Logan	32.2	33.7	35.2	58.9	70.0	70.0	74.7	72.4	63.0	50.0	47.3	33.2	53.4	97	— 4	Apr. 8	Sept. 23
Lordstown	26.7	27.0	28.9	54.1	65.4	61.0	69.8	68.2	62.2	46.3	44.0	30.2	48.7	93	— 6	Apr. 9	Oct. 3
McArthur	30.9	33.0	34.5	58.2	68.0	68.9	72.8	72.9	64.2	50.1	45.8	34.6	52.8	95	— 5	Apr. 8	Sept. 23
McConnelsville	31.7	31.4	34.5	58.1	68.8	70.2	74.0	73.0	64.4	50.8	49.2	34.9	53.4	96	— 4	Apr. 5	Oct. 19
Marietta	33.6	33.4	36.2	[c]60.0	70.2	[c]69.7	73.6	.....	.....	50.8	47.8	35.8	.....	.....	— 2	Apr. 9	Oct. 22
Marion	29.6	30.3	32.2	57.3	68.2	69.3	73.2	72.4	62.0	49.6	44.7	31.8	51.7	97	— 7	Apr. 8	Sept. 23
Medina	27.4	27.8	30.2	54.4	66.4	67.8	71.6	70.6	61.6	47.6	44.2	30.7	51.7	95	—13	Apr. 9	Oct. 3
Milfordton	27.6	28.4	28.8	55.7	66.6	69.2	71.6	69.9	60.5	45.8	42.6	29.0	49.6	95	— 6	Apr. 8	Sept. 23
Milligan	31.6	33.0	34.6	58.2	68.2	70.2	76.2	74.4	65.4	52.8	46.1	33.4	53.7	97	— 6	Apr. 7	Oct. 19
Millport	30.2	31.7	34.0	58.9	70.9	71.9	.....	74.6	65.4	49.8	.....	.....	.....	.....	.....	Apr. 7	Oct. 24
Montpelier	24.1	26.4	29.6	53.6	65.6	68.9	71.8	70.8	59.4	45.9	40.1	28.6	48.7	96	—13	Apr. 8	Sept. 20
Napoleon	25.4	26.9	.....	53.4	67.0	70.0	72.4	70.8	59.4	47.0	42.4	29.2	.....	97	—11	Apr. 9	Sept. 20
New Alexandria	29.8	30.2	30.8	56.4	67.8	69.0	71.4	70.0	62.6	47.8	46.7	33.2	51.3	90	— 5	Apr. 8	Oct. 9
New Berlin	27.4	28.2	30.4	55.0	66.2	68.1	71.8	70.4	60.4	47.8	44.1	30.2	50.0	96	— 5	Apr. 9	Sept. 23
New Bremen	28.2	30.2	31.7	56.3	68.4	69.0	78.2	72.5	61.0	.....	43.0	32.4	.....	95	—10	Apr. 8	Sept. 23
New Comerstown	29.7	30.8	32.4	55.6	67.8	69.6	72.2	70.8	61.8	46.5	44.2	31.6	51.1	95	— 4	Apr. 9	Sept. 23
New Holland	30.4	32.0	33.8	58.8	69.5	70.2	74.8	73.4	64.2	50.0	45.1	34.6	53.1	96	— 2	Apr. 8	Sept. 20
New Paris	29.6	30.2	33.6	58.9	69.0	71.3	73.0	74.6	65.2	52.8	45.2	35.8	53.3	99	—10	Apr. 8	Sept. 23
North Lewisburg	28.2	29.9	31.0	57.0	69.6	69.4	74.0	72.6	62.2	49.4	44.4	32.4	51.7	98	— 8	Apr. 8	Sept. 23
North Royalton	27.3	27.0	29.1	53.4	66.4	67.4	72.6	71.2	63.0	48.4	43.9	30.9	50.1	95	—11	Apr. 9	Oct. 8
Norwalk	28.0	26.8	30.4	54.8	66.8	69.4	71.2	68.0	57.8	48.0	44.8	32.2	49.7	98	—10	Apr. 10	Oct. 8
Oberlin	27.5	27.2	[a]30.9	57.6	[a]67.3	70.6	72.6	70.3	.....	.....	45.6	31.7	.....	.....	—18	Apr. 23	.....
Ohio State University	31.1	32.2	33.9	57.8	67.8	68.8	73.2	71.8	62.2	48.7	44.7	33.1	52.1	94	— 4	Apr. 8	Sept. 23
Orangeville	26.7	27.3	28.0	52.6	64.9	67.4	71.2	68.2	60.0	45.1	42.6	28.9	48.6	94	— 6	Apr. 23	Sept. 24
Ottawa	27.2	30.2	32.6	56.7	67.5	70.1	74.4	73.2	62.0	50.4	45.4	33.2	51.9	102	— 9	Apr. 22	Sept. 20
Pataskala	29.4	31.0	32.4	57.6	68.6	68.5	72.7	72.2	62.8	49.4	45.1	33.3	51.8	95	— 4	Apr. 8	Sept. 23
Peoli	28.0	30.0	.....	56.4	70.4	70.0	74.0	71.4	63.7	.....	.....	.....	.....	96	.....	Apr. 9	.....
Philo	[a]28.4	30.8	33.0	59.3	69.6	70.0	73.2	71.9	63.7	48.9	45.2	33.8	52.3	95	— 4	Apr. 8	Oct. 8
Plattsburg	29.2	30.8	32.5	57.8	68.2	69.0	73.4	71.8	63.2	50.1	44.6	33.4	52.0	94	— 6	Apr. 8	Sept. 20
Pomeroy	32.6	32.9	34.8	59.8	70.4	72.4	75.7	74.0	65.8	50.3	47.7	35.3	54.3	100	—18	Apr. 8	Sept. 23
Portsmouth	36.2	37.1	39.1	63.1	73.6	73.6	77.1	75.4	66.0	54.2	49.7	39.1	57.0	100	0	Apr. 8	Sept. 23

[1] G. A. Hyde.

MONTHLY AND ANNUAL MEAN TEMPERATURE ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Ohio—Continued.																	
Ridgeville Corners	24.4	26.9	31.0	54.3	66.6	68.4	72.0	70.5	59.7	47.6	42.6	29.6	49.4	96	—11	Apr. 22	Sept. 20
Ripley	33.0	34.4	36.1	60.8	70.1	71.3	75.0	73.1	64.0	50.8	47.4	36.7	54.5	93	— 2	Apr. 8	Oct. 8
Rittman	26.9	27.4	28.8	52.3	64.3	65.7	68.8	67.6	59.1	45.2	42.6	30.7	48.3	93	— 8	Apr. 9	Oct. 4
Rockyridge	.....	28.8	30.8	55.0	68.2	70.0	73.2	73.4	62.4	48.8	43.6	30.4	.....	100	.....	Apr. 29	Sept. 23
Rosewood	27.0	29.8	31.6	56.0	67.1	[1]68.6	72.3	70.2	60.4	48.3	44.2	32.6	50.7	91	— 8	Apr. 8	Sept. 20
*Sandusky	27.8	28.2	30.3	53.8	66.2	69.2	73.5	72.2	62.2	49.4	44.2	32.4	50.8	95	— 4	Apr. 8	Oct. 19
Sharon Center	30.4	31.1	33.4	61.8	.....	72.8	75.1	.....	.....	.....	45.4	34.2	.....	.....	— 5	Apr. 7	Oct. 18
Shenandoah	27.2	27.4	29.6	54.6	65.9	67.6	71.7	70.1	60.0	46.2	42.5	30.4	49.4	97	— 7	Apr. 8	Sept. 23
Sidney	.....	.....	.....	.....	.....	.....	74.0	73.0	62.2	48.0	44.0	31.2	.....	.....	.....	.....	Sept. 20
Sinking Spring	32.4	32.4	34.8	60.6	68.8	70.1	74.6	73.4	64.0	51.4	46.2	36.0	53.7	93	— 2	Apr. 8	Sept. 22
Spring Valley	28.6	30.6	32.8	58.2	68.6	69.7	74.2	72.5	63.2	47.8	43.0	33.4	51.9	95	— 5	Apr. 9	Sept. 23
Sylvania	24.6	26.2	29.0	52.1	65.0	67.6	72.0	70.4	59.3	45.3	40.1	28.2	48.3	97	—11	Apr. 8	Sept. 19
Thurman	33.0	35.4	37.0	62.4	71.4	73.6	77.0	75.7	68.2	52.0	49.2	36.7	56.0	103	— 4	Apr. 8	Oct. 8
Tiffin	28.5	29.1	31.4	56.8	68.2	69.0	73.2	71.6	61.3	48.6	44.2	32.2	51.2	95	— 5	Apr. 8	Sept. 20
*Toledo	26.2	27.0	30.8	54.0	66.6	69.0	72.4	71.2	60.5	48.4	42.6	31.0	50.0	95	— 6	Apr. 8	Sept. 23
Upper Sandusky	28.6	29.0	32.0	57.0	67.6	68.2	73.3	71.0	.....	48.5	44.4	32.0	.....	94	— 6	Apr. 8	Sept. 20
Urbana	28.8	30.2	32.8	57.0	67.6	69.0	73.2	70.4	60.8	48.6	42.8	32.6	51.2	89	— 7	Apr. 8	Sept. 24
Vanceburg	34.6	35.0	37.6	60.6	70.2	72.9	75.9	74.6	65.5	52.2	47.4	36.4	55.2	95	— 7	Apr. 8	Sept. 20
Van Wert	26.6	29.0	31.4	56.5	67.4	69.1	72.6	71.3	60.4	48.2	42.1	31.4	50.5	94	— 9	Apr. 8	Oct. 7
Vermillion	26.9	27.2	29.4	53.8	65.3	66.1	71.4	69.7	60.1	46.9	43.7	31.9	49.4	93	— 7	Apr. 19	Sept. 20
Vickery	27.9	28.2	31.0	55.4	67.8	73.8	73.4	70.6	61.4	48.8	44.2	32.3	51.2	96	— 5	Apr. 8	Sept. 23
Walnut	.....	32.6	34.4	59.4	71.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 8	Sept. 23
Warren	27.8	28.4	29.2	53.6	65.6	67.9	71.4	69.0	60.8	46.4	44.2	30.6	49.6	96	— 1	Apr. 9	Oct. 3
Waraaw	28.4	30.3	29.2	55.1	66.5	68.6	73.6	72.6	63.9	.....	.....	29.6	.....	102	—11	Apr. 9	Sept. 20
Wauseon	25.2	27.4	30.7	54.2	66.4	69.6	72.4	71.6	60.8	47.5	42.4	29.9	49.8	97	—12	Apr. 10	Sept. 20
Waverly	33.2	34.8	36.3	61.3	71.0	73.4	77.2	75.3	66.8	51.6	47.5	36.4	55.4	99	— 1	Apr. 8	Oct. 8
Wellington	29.8	31.4	32.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westerville	31.2	32.2	33.6	57.1	67.4	69.0	72.9	70.6	61.5	49.0	45.4	34.0	52.0	91	— 3	Apr. 8	Sept. 23
Wooster	27.9	29.2	29.8	54.6	64.5	65.6	70.2	68.5	60.6	48.8	44.4	30.8	49.6	93	— 6	Apr. 8	Sept. 24
Youngstown	27.2	26.6	28.4	53.0	67.4	67.6	72.0	69.9	58.8	46.4	44.3	28.4	49.2	94	— 6	Apr. 9	Oct. 10
Oklahoma.																	
Alva	36.2	39.8	41.7	63.0	74.4	77.6	81.7	83.5	69.2	58.4	43.8	43.6	59.4	112	7	Apr. 3	Sept. 28
Anadarko	42.0	45.4	51.2	67.0	78.6	83.9	84.1	89.4	75.1	63.5	49.0	[1]43.5	64.4	111	7	Apr. 2	Nov. 7
Arapaho	38.7	41.3	46.4	65.4	76.2	77.6	80.8	84.2	71.6	58.7	44.6	42.8	60.7	108	6	Apr. 2	Oct. 30
Beaver	.....	39.9	44.6	66.2	73.0	81.1	80.6	83.0	[1]69.3	56.0	38.5	[1]35.6	.....	112	0	Apr. 19	Sept. 28
Buffalo	40.0	46.4	43.9	.....	.....	.....	.....	81.8	71.8	.....	.....	.....	.....	.....	.....	.....	.....
Burnett	40.6	44.2	48.4	66.2	73.6	76.2	81.0	84.0	72.6	59.0	48.4	43.8	61.5	107	7	Apr. 3	Oct. 11
Clifton	39.2	40.4	47.2	66.8	74.2	76.9	82.7	84.7	74.1	59.0	47.4	42.2	61.2	113	6	Apr. 3	Oct. 11
Enid	39.2	43.6	45.6	65.6	75.2	78.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 2	.....
Fort Reno	38.7	43.3	46.4	65.4	74.1	78.5	81.6	83.5	72.6	60.6	44.8	44.3	61.2	107	9	Apr. 4	Nov. 27
Fort Sill	41.2	45.9	49.2	65.9	75.9	80.9	83.2	85.1	73.7	61.5	48.7	45.3	63.0	109	10	Apr. 4	Nov. 7
Guthrie	40.6	42.0	48.3	66.4	74.7	75.2	80.3	83.4	73.2	60.9	46.7	41.2	61.1	105	10	Apr. 2	Nov. 7
Hennessey	42.5	47.4	[1]48.4	67.8	77.2	.....	.....	.....	[1]72.7	.....	.....	.....	.....	.....	.....	Apr. 2	Nov. 25
Keokuk Falls	36.9	41.0	44.2	68.4	70.5	78.2	80.4	84.2	.....	57.8	.....	44.4	.....	109	8	Mar. 24	Oct. 10
Mangum	43.6	48.2	50.0	66.6	77.0	81.6	81.1	84.0	74.2	61.8	49.3	48.0	63.8	105	11	Apr. 4	Nov. 5
Norman	41.2	46.0	48.4	68.4	77.0	78.7	84.8	86.2	74.2	61.0	47.6	44.9	63.2	112	12	Apr. 3	Nov. 7
*Oklahoma	39.4	43.4	46.4	66.1	73.3	76.2	80.7	83.2	71.9	59.2	46.6	45.0	61.0	104	11	Apr. 2	Oct. 11
Ponca	39.4	41.0	44.0	67.6	.....	.....	82.1	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 1	.....
Pondcreek	36.0	39.0	41.6	[1]60.2	[1]76.1	77.1	81.4	83.6	72.8	59.6	46.6	46.0	60.0	110	6	Apr. 4	Nov. 4
Sac and Fox Agency	42.6	43.8	48.8	65.6	72.6	75.4	80.1	84.0	71.0	57.4	47.9	44.3	61.1	108	7	Apr. 4	Sept. 29
Stillwater	39.6	43.6	46.4	66.3	73.9	74.8	80.0	82.7	72.0	59.2	46.4	43.4	60.7	106	11	Apr. 3	Oct. 11
Winnview	[1]39.6	[1]40.8	45.6	[1]67.1	76.2	79.4	81.4	84.9	70.7	57.2	45.7	44.4	61.1	107	8	Apr. 3	Nov. 7
Woodward	37.4	41.0	44.0	59.0	84.2	.....	86.0	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 2	.....
Oregon.																	
Albany	43.1	45.6	46.2	48.1	52.0	61.6	70.2	66.3	.....	.....	.....	.....	.....	.....	.....	Mar. 31	.....
Arlington	36.2	44.0	44.6	51.6	57.0	67.7	79.5	71.1	62.6	54.0	.....	37.7	.....	107	.....	Mar. 2	Oct. 28
Ashland	42.0	43.2	46.4	45.2	51.9	62.6	73.0	68.6	60.5	54.6	40.6	42.0	52.6	103	15	Apr. 1	Sept. 13
*Astoria	43.4	46.4	44.2	46.6	51.2	57.8	64.1	63.6	59.5	54.2	41.6	46.0	51.6	86	19	Mar. 2	Nov. 19
Aurora (*g*)	45.0	48.2	48.3	50.5	56.4	66.6	76.0	69.8	63.6	56.4	44.5	48.8	56.2	100	17	.....	.....
Aurora (near)	41.2	44.7	44.7	46.6	51.6	59.2	67.4	64.6	58.8	53.0	38.2	43.2	51.1	95	8	Apr. 3	Nov. 20
*Baker City	30.3	35.6	36.8	40.9	46.4	59.6	69.8	66.8	55.8	48.8	30.6	34.8	46.4	96	— 8	May 18	Sept. 12
Bandon	48.5	48.2	48.2	47.8	53.4	56.2	59.2	61.0	55.0	52.0	46.6	50.2	52.2	72	24	Apr. 16	Nov. 24
Bay City	.....	.....	.....	.....	.....	57.4	63.2	61.6	57.0	53.7	43.2	47.7	.....	90	.....	.....	Oct. 22
Beulah	28.8	35.4	38.0	40.4	48.2	63.0	71.5	.....	52.1	.....	.....	.....	.....	.....	.....	May 20	Sept. 9
Brownsville (*g*)	42.8	45.4	46.7	44.7	55.3	64.8	75.4	68.5	63.5	55.5	41.6	46.8	54.3	100	10	.....	.....
Burns	22.4	27.9	32.5	37.4	45.2	60.8	70.5	64.8	53.2	43.2	26.7	29.6	42.9	97	—26	May 2	Aug. 3
Cascade Locks	37.7	44.8	44.7	48.2	54.8	63.2	71.7	67.0	61.4	56.3	37.6	39.8	52.3	94	6	Apr. 3	Nov. 6
Comstock (*g*)	44.8	43.8	46.3	44.7	52.2	61.0	69.4	65.1	56.5	50.5	40.8	45.5	51.7	98	9	.....	.....
Corvallis	42.0	44.8	44.3	46.2	51.1	59.2	67.7	65.6	58.6	52.8	38.6	43.4	51.2	99	10	Apr. 17	Sept. 25
Corvallis (near)	41.6	44.8	45.4	46.8	52.4	61.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crook	31.6	35.8	35.7	37.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 30	.....
Dayville	40.0	43.6	43.2	46.0	52.2	64.1	72.4	67.5	58.8	51.8	37.2	44.2	51.8	101	— 4	Apr. 26	Sept. 26
Detroit	32.4	37.2	37.2	39.8	44.9	59.4	69.4	64.8	57.8	[1]50.0	.....	.....	.....	99	.....	May 17	Sept. 26
Eugene	44.1	45.1	45.9	47.1	52.0	59.8	69.7	65.4	60.2	54.4	40.2	45.2	52.4	97	12	Apr. 3	Sept. 26
Fife	33.6	38.0	34.7	35.8	42.4	56.4	[1]66.8	62.4	53.0	48.2	30.8	36.2	44.9	97	—15	May 20	Sept. 8
Forestgrove	39.6	43.7	43.5	46.1	51.8	60.1	.....	.....	60.0	53.4	37.5	42.6	.....	.....	7	Apr. 3	Sept. 24
Fort Klamath	.....	.....	.....	.....	.....	55.6	63.6	59.8	51.6	45.0	30.2	32.8	.....	92	.....	June 10	Aug. 4
Gardiner	46.8	47.9	47.4	47.0	51.6	57.6	64.2	61.9	59.0	53.8	45.8	46.7	52.6	90	21	Apr. 15	Nov. 24
Glenora	38.4	41.8	42.5	45.0	49.0	57.5	68.8	64.2	57.2	51.6	36.8	41.8	49.7	104	11	Apr. 4	Sept. 26
Government Camp	31.1	34.4	31.7	34.3	39.4	49.8	60.9	57.2	50.6	46.2	26.6	36.8	41.6	94	— 3	June 10	Sept. 8
Grants Pass (*s*)	42.0	44.8	46.8	46.0	53.0	63.9	73.4	69.2	60.6	54.2	42.2	42.8	53.2	105	15	May 13	Sept. 23
Happy Valley	32.5	36.2	.....	.....	45.2	59.6	67.1	62.6	51.8	47.0	30.0	36.8	.....	98	—31	.....	.....
Hood River (near)	33.2	39.5	41.8	46.0	52.2	61.6	72.1	67.3	59.5	52.0	31.2	37.9	49.5	96	— 6	Apr. 19	Sept. 13
Hubbard	40.8	44.2	43.4	46.4	51.4	61.2	66.8	64.1	58.2	51.6	36.9	.....	.....	95	.....	Apr. 20	Oct. 6
Jacksonville	40.0	42.3	46.0	44.7	52.0	62.8	73.2	68.8	60.2	53.2	39.8	40.8	52.0	100	15	Apr. 19	Sept. 13
Joseph	29.5	30.8	31.9	37.6	43.8	57.8	67.4	64.0	52.2	45.2	27.8	32.0	43.3	94	—17	May 19	Sept. 9

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Oregon—Continued.																	
Junction City (*g*)	44.6	48.1	46.1	48.6	53.3	63.4	71.5	66.9	61.0	55.9	44.0	47.0	54.2	99	15	.....	.....
Lafayette (*g*)	43.6	45.1	46.5	50.4	57.4	65.8	74.5	69.0	62.9	57.5	40.5	45.2	54.9	105	13	.....	.....
Lakeview	29.3	32.2	35.4	36.2	45.2	61.7	70.7	64.0	55.1	47.9	31.8	34.1	45.3	102	—14	June 5	Sept. 11
Langlois	50.4	51.0	51.0	50.0	55.7	60.7	67.0	65.8	61.6	57.0	50.9	53.8	56.2	90	26	Mar. 31	Nov. 27
Lone Rock	32.4	37.8	34.2	38.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lorella	32.9	38.8	37.7	39.4	50.1	66.6	73.9	67.8	59.6	.....	.....	.....	.....	101	.....	May 14	Sept. 12
McMinnville	40.6	44.8	44.5	46.2	51.6	60.3	70.2	65.7	59.4	53.6	38.3	43.6	51.6	103	14	Apr. 16	Sept. 26
Merlin (*g*)	39.1	42.2	.....	45.8	55.0	68.9	78.6	71.0	62.4	52.3	40.1	41.7	.....	108	10	.....	.....
Monmouth (*g*)	42.3	45.5	46.7	53.1	56.0	66.4	76.0	69.9	62.9	53.6	38.8	44.9	54.7	100	12	.....	.....
Mount Angel	42.1	45.8	46.4	47.0	52.6	63.2	72.5	68.0	62.1	54.3	39.3	44.3	53.1	106	10	Mar. 31	Nov. 6
Newberg	[c]41.4	45.3	45.8	46.8	51.6	[c]61.0	69.5	64.8	60.8	54.4	35.0	44.7	51.8	103	14	.....	.....
Newbridge	33.2	35.6	40.8	46.2	51.7	67.0	76.8	71.9	60.5	54.0	39.8	.....	.....	107	— 7	Apr. 19	Oct. 3
Newport	45.3	47.2	46.1	46.0	49.4	55.6	.....	59.0	56.4	52.8	42.4	48.4	.....	.....	19	Mar. 31	Nov. 27
Pendleton	39.6	43.5	43.2	47.9	54.2	65.0	75.8	69.9	58.9	51.6	35.2	39.7	52.0	109	—13	Apr. 3	Sept. 26
*Portland	42.8	46.2	45.5	47.0	52.2	61.2	70.1	66.3	61.0	55.9	38.6	43.9	52.6	93	11	Mar. 2	Nov. 19
Riddles (*g*)	41.1	43.4	43.7	44.6	50.5	61.2	70.2	66.6	57.0	50.2	42.4	43.9	51.2	110	14	.....	.....
*Roseburg	44.5	45.2	46.6	46.3	52.8	61.4	71.3	67.2	60.6	54.2	42.7	45.6	53.2	99	14	Apr. 19	Oct. 25
Salem	43.3	45.9	45.2	47.6	52.7	60.6	69.6	65.6	60.2	54.0	39.4	44.8	52.4	97	12	Apr. 15	Nov. 20
Sheridan (*g*)	43.2	46.1	49.3	49.5	55.9	62.8	72.4	69.1	62.7	55.4	40.7	45.8	54.4	97	10	.....	.....
Silver Lake	32.2	34.8	33.8	36.2	43.0	[c]56.9	66.6	67.2	51.2	45.3	27.1	.....	.....	100	.....	.....	.....
Silverton (*g*)	40.7	43.7	43.9	46.6	53.2	63.3	67.6	65.2	59.8	51.9	38.1	44.1	51.5	98	10	.....	.....
Siskiyou (*g*)	38.3	42.8	42.4	40.0	46.3	66.3	72.6	70.0	59.5	54.1	36.8	42.6	51.0	97	12	.....	.....
Sparta	28.6	32.3	34.8	39.6	45.0	59.0	70.2	67.3	55.6	48.3	27.7	34.2	45.2	94	—12	.....	.....
Springfield (*g*)	40.6	40.1	44.6	43.8	51.4	62.3	73.5	66.0	59.6	52.9	.....	45.4	.....	95	.....	.....	.....
Stafford	.....	.....	.....	[c]46.3	51.6	59.7	70.0	67.0	61.0	55.4	38.0	43.0	.....	99	.....	Apr. 14	Nov. 6
The Dalles	35.8	44.4	44.8	49.8	56.6	66.6	76.8	70.6	62.6	54.0	35.0	38.3	52.9	104	— 2	Apr. 1	Nov. 6
Toledo	42.4	45.4	43.6	44.2	48.9	.....	62.2	60.0	57.7	54.0	40.6	46.2	.....	.....	9	Apr. 3	Nov. 2
Vale	33.4	36.8	41.4	46.6	51.4	65.4	73.1	68.6	56.6	49.0	33.6	31.8	49.0	102	—10	May 18	Sept. 10
Vernonia	.....	.....	.....	.....	.....	.....	.....	.....	.....	52.2	37.1	42.4	.....	.....	.....	.....	.....
West Fork (*g*)	46.2	45.7	47.1	45.8	52.9	64.4	74.5	69.3	59.3	53.7	44.0	44.7	54.0	110	18	.....	.....
Weston	36.0	40.2	40.3	43.0	49.0	61.0	71.6	67.4	56.3	48.8	31.1	37.8	48.5	102	—15	Apr. 19	Sept. 13
Williams	41.6	43.2	46.6	45.4	52.4	61.6	71.0	66.3	57.8	52.1	41.6	42.0	51.8	101	13	May 17	Oct. 4
Pennsylvania.																	
Altoona	.....	.....	.....	.....	.....	68.9	74.7	72.1	64.7	50.7	50.3	36.6	.....	95	.....	Apr. 9†	Oct. 10†
Aqueduct	29.6	32.0	33.8	55.8	68.6	70.4	77.0	74.2	65.6	50.4	46.2	32.5	53.0	101	— 4	Apr. 9	Oct. 9
Blooming Grove	24.0	23.0	24.2	45.0	61.2	65.0	71.2	69.3	59.0	44.1	41.0	25.4	46.0	99	—20	May 1†	Sept. 2
Canonsburg	.....	.....	.....	.....	70.0	[a]70.0	73.4	72.6	66.1	[a]52.2	50.5	[c]36.8	.....	92	.....	.....	Oct. 8
Carlisle	29.1	31.1	32.4	54.6	66.4	68.8	[1]75.6	73.7	65.6	50.7	47.2	31.6	52.2	100	— 5	Apr. 9†	Oct. 9†
Cassandra	29.1	28.8	30.0	52.4	67.3	67.4	73.6	70.8	62.2	46.0	44.3	31.4	50.3	93	— 8	Apr. 23	Sept. 21
Centerhall	.....	.....	27.6	53.4	66.0	66.2	72.2	70.6	62.7	47.5	45.9	30.2	.....	93	.....	Apr. 8†	Oct. 9†
Chambersburg	28.4	31.6	31.8	53.6	65.4	67.8	73.2	71.4	63.6	48.2	45.6	31.0	51.0	95	— 8	Apr. 10†	Oct 10†
Coatesville	28.9	32.4	34.4	53.9	66.2	68.0	75.3	73.9	65.5	50.1	47.7	32.0	52.4	99	— 1	Apr. 9†	Sept. 24
Coopersburg	30.6	32.4	34.5	53.8	65.5	67.6	74.3	73.0	66.0	52.2	49.1	34.2	52.8	93	— 4	Apr. 9†	Oct. 9
Derry Station	.....	.....	.....	.....	.....	.....	.....	.....	.....	[d]49.0	46.6	32.4	.....	.....	.....	.....	.....
Drifton	[a]21.0	[a]24.5	.....	.....	.....	.....	70.8	68.2	60.5	.....	.....	.....	.....	.....	.....	.....	.....
Dyberry	19.2	22.8	24.0	47.8	59.8	62.8	69.2	66.2	59.3	45.7	40.7	25.0	45.2	95	—19	Apr. 24	Oct. 9
East Mauch Chunk	26.4	27.9	30.4	52.9	64.0	66.2	72.5	71.4	63.2	48.3	44.6	29.1	49.7	98	—10	Apr. 9	Oct. 9
Easton	26.6	29.9	31.0	53.6	66.0	68.6	74.8	72.5	64.2	49.6	45.8	30.1	51.1	96	— 8	Apr. 9†	Oct. 9
Edinboro (*a*)	24.5	24.2	24.4	50.7	62.2	64.9	69.5	67.1	58.2	45.0	41.4	28.3	46.7	90	— 4	Apr. 10†	Oct. 8†
Emporium	26.8	27.2	27.8	51.2	63.8	64.8	69.7	68.2	61.1	46.0	44.4	29.4	48.4	90	—10	Apr. 23	Sept. 23
*Erie	26.6	27.5	28.2	50.6	63.4	66.2	71.0	69.8	61.0	48.5	44.6	31.6	49.1	92	— 7	Apr. 9†	Oct. 5
Forks of Neshaminy (*a*)	31.6	36.2	37.8	56.1	[c]65.5	69.8	76.1	74.7	65.0	50.8	[c]49.8	30.3	53.6	92	— 2	Apr. 4†	Oct. 26†
Grampian	24.2	24.8	25.8	52.6	65.8	66.6	71.6	69.7	61.0	45.6	43.1	28.5	48.3	92	—12	Apr. 9†	Sept. 24
Hallstead	.....	.....	.....	.....	.....	.....	.....	.....	.....	45.6	42.8	27.0	.....	.....	.....	.....	.....
Hamburg	29.2	30.7	33.0	54.4	66.7	69.0	75.3	74.2	66.2	51.0	47.2	32.0	52.4	99	— 3	Apr. 9†	Oct. 9†
*Harrisburg	29.3	30.8	32.8	54.4	66.0	69.0	74.5	73.7	66.0	50.9	47.6	33.0	52.3	95	— 1	Apr. 8†	Oct. 9
Hollidaysburg	28.2	31.8	30.2	55.0	66.0	[c]66.8	72.0	[b]72.3	63.4	48.2	45.7	30.6	50.9	98	—11	Apr. 23	Oct. 9
Honesdale	.....	26.7	28.0	52.0	.....	.....	.....	71.6	.....	.....	.....	.....	.....	.....	.....	.....	.....
Huntingdon (*a*)	29.6	31.4	32.0	54.2	66.2	67.5	72.6	71.0	63.8	49.0	[f]47.6	31.2	51.3	96	— 4	.....	Sept. 23
Indiana	.....	.....	.....	.....	.....	69.6	.....	69.8	63.2	49.4	46.8	[b]38.0	.....	.....	.....	.....	Sept. 23
Irwin	.....	.....	.....	.....	.....	.....	.....	.....	71.6	54.0	49.6	37.0	.....	.....	.....	.....	Sept. 24
Johnstown	.....	.....	.....	54.6	67.8	68.6	73.2	.....	.....	48.8	45.3	32.1	.....	.....	.....	Apr. 12	Oct. 9
Kennett Square	30.3	33.2	34.1	53.6	66.2	68.3	75.2	73.6	65.4	51.6	49.4	32.5	52.8	97	— 1	Apr. 10†	Oct. 9†
Lancaster	[a]29.9	30.8	33.3	53.3	67.4	[a]70.4	74.7	71.0	63.1	53.0	52.4	30.6	53.0	93	0	Apr. 12†	Oct. 9†
Lebanon	28.4	30.6	32.2	53.7	65.0	67.4	73.8	73.1	65.4	50.7	46.3	31.0	51.5	96	—10	Apr. 23	Oct. 27
Leroy	21.8	22.8	24.2	49.8	62.9	64.8	70.4	69.2	60.8	45.8	43.2	25.6	46.8	93	—17	Apr. 23†	Oct. 9
Lewisburg	27.9	30.0	30.0	53.4	65.5	66.6	[c]72.8	71.2	63.8	48.0	45.2	29.6	50.3	95	—14	Apr. 23	Oct. 9
Lockhaven	27.6	30.3	32.4	55.4	67.6	68.6	74.4	[1]72.4	64.4	50.8	47.7	32.2	52.0	97	— 7	Apr. 9†	Oct. 9†
Lycippus	28.8	29.7	30.8	55.6	.....	70.0	72.6	71.2	.....	[c]48.4	48.0	32.3	.....	.....	— 5	Apr. 8†	Oct. 19†
*Philadelphia	31.1	33.6	35.8	55.2	67.2	70.4	77.6	76.6	67.8	53.6	50.4	34.7	54.5	97	— 2	Apr. 8†	Oct. 9
Philadelphia[1]	31.4	34.4	36.4	55.8	67.6	70.6	77.8	76.2	67.4	53.6	50.4	34.4	54.7	98	— 1	Apr. 9	Oct. 9
*Pittsburg	31.4	32.4	33.0	57.2	69.2	70.4	73.8	72.5	65.2	50.6	48.6	35.2	53.3	94	— 2	Apr. 8†	Oct. 9
Pottstown	29.4	32.5	34.3	55.4	67.1	70.0	76.6	74.6	66.0	51.6	48.4	32.2	53.2	98	— 3	Apr. 9†	Oct. 9
Quakertown	26.8	29.0	31.4	52.2	64.0	66.4	73.6	71.4	63.6	49.0	46.0	29.5	50.2	96	— 6	Apr. 9	Sept. 24
Reading (*b*)	28.4	30.2	31.4	52.9	65.2	69.5	76.3	73.6	63.4	48.8	45.2	29.8	51.2	.....	.....	.....	.....
Saegerstown	24.8	27.3	27.2	50.6	64.1	64.5	69.1	66.4	59.4	45.2	43.4	28.8	47.6	95	—16	Apr. 8	Sept. 24
St. Marys	.....	.....	.....	.....	.....	[d]63.6	68.4	67.0	60.0	44.6	41.6	27.5	.....	.....	.....	.....	Oct. 9
Salem Corners	22.3	24.3	26.4	50.4	63.2	65.6	71.0	70.6	62.0	46.4	44.4	27.6	47.8	96	—21	Apr. 10†	Sept.23†
Scranton	24.3	26.8	29.4	51.8	63.8	67.2	72.4	70.2	62.8	47.7	45.2	28.8	49.2	95	—14	Apr. 11	Oct. 9
Selinsgrove	26.9	28.4	30.6	53.0	68.0	66.8	71.8	71.8	63.6	48.6	46.5	27.6	50.3	98	—10	Apr. 23†	Oct. 9
Shinglehouse	25.9	26.1	25.6	48.3	61.6	62.6	67.0	66.3	59.0	45.2	42.4	29.0	46.6	93	—16	Apr. 17†	Sept. 23
Smethport	24.6	24.7	26.0	48.8	61.9	63.0	68.1	66.2	58.6	44.6	41.8	28.2	46.4	91	—16	Apr. 23†	Sept.23†
Somerset	27.2	28.2	30.8	51.4	62.3	63.4	67.7	67.8	.....	.....	44.4	28.5	.....	94	—11	Apr. 24†	.....
South Bethlehem (*a*)	28.8	32.5	36.7	57.8	.....	70.9	77.2	73.7	66.4	54.4	47.2	31.4	.....	98	— 8	Apr. 10†	Oct. 19
South Eaton	24.1	27.4	28.6	50.6	62.7	65.1	71.1	68.5	61.8	47.8	45.0	29.2	48.5	91	—13	Apr. 10	Sept. 23
State College	26.6	28.2	28.6	52.0	64.6	65.6	71.1	69.8	62.1	47.2	46.3	30.8	49.4	93	— 6	Apr. 9†	Oct. 9

[1] John Comly.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Pennsylvania—Cont'd.																	
Swarthmore	29.4	32.4	.....	55.7	67.3	71.8	.....	.....	65.4	51.8	.....	31.6	.....	.....	.....	Apr. 8†	.....
Towanda	23.7	25.8	26.7	51.0	63.6	65.6	71.8	69.0	61.2	46.6	45.1	28.1	48.2	94	—12	Apr. 23	Sept. 24
Uniontown	32.0	31.5	32.6	55.9	66.9	69.0	73.0	71.2	64.2	50.7	48.8	35.0	52.6	92	— 4	Apr. 8†	Oct. 9†
Wellsboro (a)	23.6	24.5	24.1	46.2	58.1	60.2	66.4	64.6	55.9	42.1	40.4	29.2	44.6	93	—14	Apr. 23†	Sept. 23
West Chester	29.2	32.2	34.0	54.2	66.4	68.9	75.4	74.2	65.9	51.5	48.7	32.6	52.8	95	— 3	Apr. 9†	Oct. 9
Westtown	.....	32.4	34.2	.....	65.6	.....	.....	.....	64.7	50.4	*48.8	.....	.....	.....	.....	.....	Oct. 9
White Haven	23.4	25.8	27.2	51.8	65.2	68.0	74.3	71.9	64.4	*45.9	43.6	26.9	49.0	100	—20	Apr. 10†	Oct. 9
Wilkesbarre	26.0	29.4	31.7	54.6	65.6	68.7	74.2	71.6	63.6	48.4	45.9	30.4	50.8	97	— 7	Apr. 23†	Oct. 9†
Williamsport	27.1	28.0	30.2	52.6	64.4	66.8	72.4	70.4	62.6	48.3	44.5	30.2	49.8	93	— 4	Apr. 9†	Sept. 24
York	29.5	32.6	33.4	54.8	66.0	68.1	74.6	73.2	65.4	50.3	47.6	31.6	52.3	97	— 6	Apr. 23	Sept. 24
Rhode Island.																	
*Block Island	28.4	31.8	32.6	40.7	54.5	61.9	68.6	69.0	62.4	52.3	48.2	34.3	49.0	86	— 4	Apr. 10†	Nov. 15
Bristol	25.4	29.3	32.0	46.7	58.1	66.2	70.9	69.9	61.5	49.6	46.5	30.5	48.9	88	9	Apr. 11	Oct. 26
Kingston	23.4	28.1	30.6	46.4	58.4	63.3	70.0	69.3	60.7	48.2	45.3	28.2	47.7	93	—11	May 2	Sept. 24
*Narragansett Pier	25.0	28.8	31.6	45.6	57.8	63.6	70.4	70.0	61.4	49.2	46.7	29.9	48.3	92	—12	Apr. 11	Oct. 19
Pawtucket	25.0	29.5	32.4	50.3	61.7	66.4	73.4	72.0	62.1	49.3	46.2	29.6	49.8	96	— 5	Apr. 9†	Oct. 19†
Providence[1]	25.1	29.6	33.2	50.6	63.0	68.4	75.2	73.8	62.8	49.8	47.0	30.3	50.7	98	— 9	Apr. 9†	Oct. 20†
Providence[2]	23.9	28.3	31.4	48.3	60.4	65.4	72.4	71.5	61.7	48.9	46.4	29.3	49.0	96	—12	Apr. 10	Oct. 20
South Carolina.																	
*Allendale	43.0	47.6	52.0	67.0	77.2	79.4	82.8	81.2	75.0	62.2	.....	.....	.....	102	.....	Mar. 21	.....
*Batesburg	.....	48.8	53.0	.....	75.6	77.2	80.0	78.6	75.0	62.2	57.4	47.5	.....	100	.....	Mar. 23	Oct. 19
*Blackville	42.7	47.6	52.4	68.2	75.4	79.6	83.3	81.9	76.0	63.8	59.6	44.1	64.6	102	12	Mar. 21	Dec. 1
Central	39.6	45.3	49.6	64.0	75.8	.....	.....	80.5	73.6	59.5	55.2	41.5	.....	.....	5	Mar. 21	Oct. 19
*Charleston	48.2	52.4	55.4	66.4	76.8	78.8	82.4	81.2	77.4	66.7	63.1	49.5	66.5	98	18	Mar. 24	Dec. 4
*Cheraw	42.1	44.4	50.8	65.8	77.2	77.4	81.2	79.3	72.8	59.2	58.0	39.2	62.3	102	8	Apr. 6	Oct. 19
Clemson College	39.0	39.5	47.0	64.0	76.4	78.0	80.6	81.3	74.5	60.8	55.7	41.4	61.5	100	7	.....	Oct. 19
*Columbia	43.6	47.8	52.4	68.2	77.6	78.6	81.6	81.2	76.4	63.3	59.3	44.0	64.5	104	10	Mar. 21	Oct. 19
*Florence	43.6	46.2	53.3	67.2	77.4	79.3	82.5	80.8	73.2	60.1	57.4	41.4	63.5	102	9	Mar. 21	Nov. 14
Georgetown	45.4	49.0	54.6	66.1	77.3	79.4	82.4	80.4	73.0	63.2	60.8	45.8	64.8	96	14	Mar. 21	Nov. 30
Gillisonville	46.4	50.7	56.5	69.0	78.3	79.7	82.2	81.7	76.6	65.3	61.0	46.8	66.2	105	11	Mar. 21	Nov. 14
Greenville	43.0	45.8	49.4	63.9	71.9	73.2	76.2	78.0	71.2	59.2	55.6	40.4	60.7	96	8	Mar. 25	Oct. 20
*Greenwood	38.3	43.6	.....	67.6	76.2	79.0	78.6	79.8	73.3	.....	58.6	42.0	.....	100	12	.....	.....
Holland	39.4	45.0	49.6	65.8	75.6	76.8	79.3	80.5	.....	59.7	.....	.....	.....	.....	.....	Apr. 5	Oct. 18
*Kingstree	46.8	49.6	54.7	68.0	77.7	79.3	82.0	81.3	74.8	61.5	59.2	42.6	64.8	101	12	Apr. 5	Nov. 14
Little Mountain	44.9	49.8	54.4	68.7	77.8	78.0	81.0	82.0	76.7	64.9	61.3	47.1	65.6	105	10	Mar. 17	Dec. 1
Longshore	42.0	47.8	51.8	66.4	75.6	76.0	78.6	79.3	73.8	61.5	58.2	43.2	62.9	97	10	Mar. 21	Dec. 1
Pinopolis (a)	45.4	49.9	54.4	65.2	74.0	76.4	79.8	78.0	73.6	62.0	58.7	44.8	63.5	93	18	Mar. 21	Dec. 2
Port Royal	48.6	53.0	56.5	68.2	78.5	80.5	83.8	82.2	76.4	67.3	63.5	49.0	67.5	100	20	Mar. 21	Dec. 3
*St. George	43.6	49.0	53.8	67.2	76.6	78.0	81.3	80.5	75.2	62.8	59.6	44.4	64.3	98	9	.....	Nov. 14
*St. Matthews	43.4	48.5	51.5	68.3	77.4	77.8	81.4	80.6	75.6	63.7	60.4	44.3	64.4	100	12	.....	Nov. 14
Santuck	40.5	45.6	50.2	65.2	75.5	75.6	79.0	79.2	73.1	59.2	56.0	40.2	61.6	99	8	Apr. 9	Oct. 19
Shaws Fork (a)	47.8	51.8	55.3	70.2	78.4	80.1	83.0	82.8	79.9	66.6	61.9	46.1	67.0	105	21	Mar. 21	Oct. 19
Society Hill	43.0	47.5	52.3	66.6	75.3	75.8	79.9	78.6	73.4	60.8	57.2	42.7	62.8	96	10	Mar. 21	Nov. 14
*Spartanburg	40.4	43.4	51.6	66.2	77.4	77.1	80.4	82.1	75.0	60.6	57.0	42.4	62.8	103	12	Apr. 3	Oct. 19
Statesburg	44.2	49.4	53.8	67.3	76.7	77.2	80.6	79.7	76.2	62.8	59.3	44.7	64.3	98	12	Mar. 21	Dec. 2
Trenton	45.4	50.1	53.5	69.1	77.8	78.6	80.8	81.9	*79.6	64.6	62.2	46.3	65.8	98	14	Mar. 21	Dec. 2
Trial	46.4	50.0	54.4	66.5	75.6	77.0	80.6	79.7	75.4	64.2	62.3	46.8	64.9	101	12	Apr. 5	Nov. 15
Walhalla	.....	.....	.....	.....	.....	.....	77.6	78.5	71.2	59.2	.....	41.8	.....	.....	.....	.....	.....
Winnsboro	.....	.....	53.0	67.2	77.0	76.8	79.4	79.9	73.0	59.7	58.3	42.9	.....	100	.....	Apr. 3	Dec. 1
*Yemassee	47.2	49.2	55.5	68.4	77.8	79.8	83.2	81.9	76.4	64.6	60.4	45.7	65.8	104	16	Mar. 21	Dec. 2
Yorkville	42.8	46.8	51.4	66.2	76.6	75.7	79.2	80.0	74.4	61.3	58.5	43.9	63.1	99	9	Mar. 2	Dec. 1
South Dakota.																	
Aberdeen	11.3	20.2	17.8	43.2	56.6	66.4	72.6	70.2	56.4	46.2	9.6	15.9	40.5	105	—28	Apr. 30	Sept. 10
Alexandria	18.0	23.6	21.4	47.5	61.2	67.0	*72.6	71.6	58.4	46.5	16.7	23.1	44.0	106	—20	Apr. 26	Sept. 19
Armour	.....	.....	.....	49.7	63.2	69.2	72.9	71.6	58.0	46.2	11.6	27.2	.....	102	.....	Apr. 4	Sept. 19
Ashcroft	18.8	28.0	25.6	44.0	55.3	65.1	68.2	67.4	54.4	42.8	16.0	33.5	43.3	99	—29	May 16	Sept. 18
Brookings	16.0	24.5	21.6	45.5	60.0	65.0	69.8	.....	55.1	39.6	17.3	22.0	.....	.....	—21	.....	Sept. 3
Canton	.....	.....	.....	48.7	59.8	64.4	68.4	68.4	56.6	.....	20.0	27.4	.....	100	.....	Apr. 20	Oct. 19
Castlewood	12.8	19.4	19.8	44.8	.....	65.0	*67.0	68.0	.....	*42.7	*12.2	19.2	.....	.....	—24	Apr. 21	Sept. 6
Chamberlain	.....	.....	.....	.....	.....	.....	.....	73.8	60.7	47.0	16.0	28.9	.....	.....	.....	.....	Sept. 19
Clark	13.7	20.2	20.1	44.7	59.4	*67.6	67.7	67.2	56.8	.....	.....	.....	.....	98	.....	.....	.....
Cross	26.8	31.1	25.8	41.5	52.9	60.4	64.8	64.3	51.8	43.6	*28.0	*36.2	43.9	94	—21	June 12	Sept. 19
Faulkton	12.6	22.4	17.7	44.2	60.7	66.5	70.2	68.6	56.0	42.3	10.2	20.2	41.0	98	—26	Apr. 21	Sept. 19
Flandreau	16.6	23.9	23.0	48.4	61.8	65.6	68.6	69.8	57.0	44.6	18.0	23.3	43.4	103	—21	Apr. 21	Sept. 19
Forestburg	17.2	24.0	23.8	48.6	63.2	67.8	72.6	71.6	58.9	45.0	15.8	27.7	44.7	105	—18	.....	.....
Forest City	.....	24.1	21.0	48.6	63.4	70.2	74.6	71.7	58.4	45.8	15.6	23.7	.....	108	.....	.....	.....
Fort Meade	26.4	35.6	25.6	46.3	58.8	.....	73.6	73.6	58.0	48.4	.....	41.2	.....	.....	—20	Apr. 21	Oct. 6
Gary	14.6	18.0	18.7	45.0	60.8	68.6	69.6	69.9	57.2	44.4	15.3	23.5	42.1	102	—19	Apr. 20	Sept. 18
Goodyville (a)	11.4	23.6	19.2	42.8	59.5	67.8	70.6	68.4	55.0	*40.9	10.4	22.3	41.0	98	—21	Apr. 21	Sept. 3
Greenwood	26.4	30.9	30.6	45.2	*62.4	70.7	75.4	73.0	61.2	*47.8	21.0	33.1	48.1	105	—11	.....	.....
Highmore	16.8	28.5	20.3	45.6	61.8	68.1	69.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hotch City	19.6	27.7	24.0	47.6	62.4	69.6	68.6	72.2	58.2	45.2	14.7	23.5	44.4	104	—19	Apr. 17	Sept. 21
Howard	17.8	22.7	.....	.....	59.9	64.7	*70.7	69.8	58.2	44.0	16.0	22.3	.....	102	.....	.....	.....
*Huron	16.8	24.8	21.2	47.3	61.3	66.2	70.0	70.2	57.2	43.8	13.6	21.3	42.8	101	—17	Apr. 21†	Sept. 19
Ipswich (a)	14.4	20.6	15.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kimball	20.1	27.7	25.1	48.2	62.4	.....	72.8	.....	58.6	45.9	14.6	24.6	.....	.....	—19	Apr. 21	Sept. 22
Leslie	19.8	27.5	26.1	48.6	63.4	71.4	74.6	74.0	58.7	45.2	15.1	28.3	46.1	106	—28	Apr. 19	Sept. 19
Mellette	.....	.....	.....	.....	59.8	67.3	74.2	72.2	60.7	42.6	12.2	19.0	.....	101	.....	.....	.....
Menno	.....	.....	.....	.....	64.2	69.0	73.8	74.2	60.7	46.4	17.4	27.9	.....	104	.....	Apr. 22	Sept. 19
Millbank	.....	17.2	16.6	44.1	60.6	66.4	68.6	69.2	57.5	.....	15.6	21.6	.....	102	.....	Apr. 15	Sept. 22
Mitchell	20.6	26.2	25.8	48.6	62.0	66.9	71.2	71.2	56.2	45.7	16.8	25.1	44.7	102	—18	Apr. 27	Sept. 19
Northville (a)	13.0	19.4	*18.6	43.9	59.8	*65.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[1] City engineer.

[2] Ladd observatory.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
South Dakota—Cont'd.																	
Nowlin	19.0	28.5	25.1	46.6	62.2	70.8	73.0	73.8	58.2	44.8	16.4	32.5	45.9	109	—22	Apr. 1	Oct. 10
Oelrichs	28.7	34.7	32.8	48.7	60.0	68.7	73.0	72.2	55.0	47.5	25.1	35.4	48.5	105	—24	.....	.....
Parker	20.5	21.6	26.1	50.5	62.4	68.0	71.2	71.2	58.0	43.9	18.1	26.2	45.1	99	—15	Apr. 3	.....
Parkston	[c]17.0	[c]25.4	25.6	.....	.....	.....	[c]65.1	67.8	56.9	45.0	15.2	27.9	.....	.....	—18	Apr. 18	Sept. 18
*Pierre	18.5	27.7	24.6	48.0	63.6	70.6	73.5	73.6	59.6	46.5	15.0	29.4	45.9	103	—16	Apr. 21	Sept. 19
Plankinton	18.8	25.4	25.4	48.9	62.9	69.9	72.8	71.4	58.0	.....	13.3	22.7	.....	105	—17	Apr. 28	Sept. 18
*Rapid City	25.0	33.0	26.1	45.8	57.8	67.5	71.8	70.6	56.7	47.2	20.9	37.8	46.7	100	—14	May 15	Sept. 19
Rosebud	21.6	30.5	27.9	47.4	.....	.....	73.6	70.6	[b]58.3	[b]43.1	20.6	34.3	.....	.....	—23	.....	.....
St. Lawrence	.....	.....	.....	.....	.....	.....	71.6	71.6	59.4	45.0	13.4	23.5	.....	.....	.....	.....	Sept. 19
Shiloh	.....	.....	25.3	46.6	61.9	69.4	71.2	70.7	55.8	.....	.....	19.6	.....	105	.....	.....	.....
Sioux Falls	18.9	24.3	24.6	48.2	61.6	66.8	71.5	71.2	57.5	44.5	18.2	25.9	44.4	102	—18	Apr. 21	Sept. 19
Spearfish	.....	.....	.....	.....	.....	.....	.....	.....	.....	46.5	21.2	30.5	.....	.....	.....	.....	.....
Tyndall	27.0	.....	33.6	53.4	64.4	69.4	74.4	71.8	58.0	48.2	19.2	30.1	.....	105	.....	Apr. 5	Oct. 20
Vermilion	23.9	29.8	29.9	.....	.....	.....	.....	.....	.....	.....	.....	31.3	.....	.....	.....	.....	.....
Watertown	13.2	22.0	22.6	46.0	59.0	[c]62.3	65.6	[c]65.9	52.6	40.7	4.4	19.6	39.5	96	—27	.....	.....
Webster	11.2	18.4	15.8	42.0	56.7	.....	.....	64.8	55.0	41.2	8.8	17.0	.....	.....	—32	Apr. 21	Sept. 3
Wentworth	16.8	23.3	21.8	47.2	60.7	65.8	69.2	69.0	56.6	44.0	16.2	22.6	42.8	99	—16	Apr. 8	Sept. 19
Wessington Springs	19.2	26.8	23.2	48.3	61.4	68.2	71.3	70.6	60.4	.....	.....	.....	.....	97	.....	.....	.....
*Yankton	23.9	28.8	27.7	51.0	64.4	69.4	72.7	72.2	60.6	47.8	19.8	30.4	47.4	100	—10	.....	.....
Tennessee.																	
Andersonville (a)	39.3	39.0	44.0	63.7	76.6	75.0	78.4	75.4	67.2	56.2	50.6	39.1	58.7	95	2	Apr. 1	Oct. 19
*Arlington	.....	.....	.....	.....	76.1	77.2	81.2	80.8	70.9	58.4	.....	.....	.....	102	.....	.....	Oct. 18
Ashwood (a)	40.8	42.7	47.0	64.8	73.9	74.7	79.1	79.9	71.8	59.3	53.3	43.6	60.9	98	10	Apr. 2	Oct. 18
Benton (near)	43.4	43.0	47.6	[c]67.8	73.4	74.5	78.6	79.7	71.7	58.4	53.4	40.6	61.0	99	7	Apr. 3	Oct. 19
*Bolivar	40.7	43.3	47.8	66.7	73.2	75.0	79.1	80.2	69.8	58.2	51.7	[c]42.0	60.6	102	12	Apr. 3	Oct. 18
Bristol	35.0	35.0	39.7	59.4	70.0	[c]72.2	73.6	73.5	66.2	52.9	48.2	34.2	55.0	92	— 3	Apr. 8	Oct. 18
*Brownsville	.....	.....	.....	[c]70.0	76.4	78.4	81.2	79.4	71.8	59.0	.....	.....	.....	101	.....	.....	.....
Byrdstown	37.8	39.3	42.9	.....	71.8	.....	.....	75.7	69.2	55.0	.....	40.2	.....	.....	2	.....	Oct. 18
Cagle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.1	39.3	.....	.....	.....	.....	Nov. 8
*Chattanooga	41.6	43.7	48.1	65.0	74.5	75.0	78.5	80.4	73.1	60.3	54.2	43.7	61.5	98	8	Mar. 21	Oct. 19
Clarksville	38.2	39.9	43.3	64.8	71.6	73.3	.....	.....	69.6	57.8	51.2	42.0	.....	.....	8	Apr. 4	Oct. 18
Cookeville	.....	40.7	44.2	66.6	75.2	.....	.....	.....	.....	.....	53.2	.....	.....	.....	.....	Apr. 7	.....
*Covington	42.9	45.4	[d]46.5	.....	76.4	78.0	85.8	81.4	72.2	[f]60.2	.....	.....	.....	105	.....	.....	Oct. 18
Decatur	39.8	41.8	46.4	[c]63.0	72.8	74.6	77.7	74.6	71.2	[d]56.8	52.0	40.1	59.2	98	6	Apr. 7	Oct. 19
*Dyersburg	40.0	40.6	46.2	67.4	75.4	77.6	81.7	81.6	70.3	59.0	51.1	43.8	61.2	103	11	Mar. 25	Oct. 18
Elizabethton	38.0	37.2	42.1	62.0	72.3	73.3	76.0	77.0	71.0	56.6	51.7	37.6	57.9	98	—7	Apr. 9	Oct. 19
Elk Valley	.....	.....	.....	.....	69.4	71.2	73.5	73.9	67.5	54.9	49.8	37.8	.....	89	.....	.....	Oct. 10
Fairmount (a)	37.1	38.6	[c]42.9	[c]61.1	69.5	70.0	73.1	75.4	69.2	56.2	49.9	[c]39.1	56.8	89	4	Apr. 4	Oct. 19
Florence	39.7	41.4	45.0	64.2	72.3	73.7	77.6	77.8	71.2	57.4	52.2	41.8	59.5	95	10	Apr. 7	Oct. 25
Franklin	38.4	40.3	44.0	63.8	71.4	.....	.....	.....	.....	.....	.....	41.1	.....	.....	.....	Apr. 7	.....
Greeneville	37.8	39.8	43.4	61.6	70.6	70.6	73.7	74.8	68.5	56.2	51.7	37.9	57.2	93	—1	Apr. 7	Oct. 19
Harriman	38.6	36.8	.....	64.0	72.4	.....	.....	.....	.....	.....	[c]51.5	38.7	.....	.....	0	Apr. 7	Oct. 19
Hohenwald (c)	34.8	35.6	43.1	60.0	69.1	70.6	75.6	73.0	65.5	56.2	50.8	40.4	56.2	97	8	Apr. 7	Oct. 18
Jackson	39.4	41.8	46.9	67.2	74.4	75.2	80.4	79.6	70.5	58.4	51.2	42.2	60.6	99	12	Apr. 3	Oct. 18
*Johnsonville	39.4	42.4	46.6	66.3	73.5	75.2	80.2	79.4	69.8	.....	.....	41.8	.....	102	9	Apr. 4	Oct. 18
Jonesboro	37.4	38.3	42.8	61.7	72.2	71.0	73.8	74.0	66.7	53.2	49.2	35.2	56.3	90	0	Apr. 8	Oct. 19
*Knoxville	40.4	41.2	45.4	63.8	73.2	73.7	76.4	78.2	71.2	58.2	52.6	40.6	59.6	96	5	Mar. 24	Oct. 19
Liberty	40.0	43.2	46.4	64.7	72.6	73.8	77.6	77.8	72.0	58.4	53.0	41.3	60.1	96	8	Apr. 4	Oct. 18
Lynnville (a)	41.4	40.1	46.2	63.7	72.4	72.6	76.7	77.7	69.6	56.7	51.4	42.5	59.2	96	10	Apr. 3	Oct. 18
McKenzie (a)	38.6	.....	45.0	67.4	74.4	74.3	79.2	.....	72.0	58.6	50.6	42.5	.....	.....	9	Mar. 24	Oct. 18
McMinnville	39.4	40.3	46.4	63.0	73.0	74.2	77.4	77.2	70.0	58.0	53.2	42.0	69.5	96	10	Apr. 4	Oct. 18
*Memphis	41.8	44.8	48.9	69.0	76.4	77.0	82.4	82.3	72.7	62.0	53.2	46.8	63.1	101	14	Mar. 24	Nov. 8
*Milan	.....	.....	.....	67.2	75.5	76.1	80.8	80.8	72.4	59.0	.....	.....	.....	101	.....	Apr. 3	Oct. 18
Moline	.....	.....	[d]47.4	64.3	73.4	74.7	78.8	79.8	71.8	58.2	50.2	42.2	.....	101	.....	Apr. 3	Oct. 18
*Nashville	39.6	41.8	45.4	65.1	73.5	74.5	79.1	79.3	71.7	59.0	51.8	42.9	60.3	99	9	Apr. 4	Oct. 18
Newport (c)	36.2	38.8	43.1	62.0	71.1	74.3	77.6	77.7	70.7	56.6	51.8	38.7	58.2	95	3	Apr. 5	Oct. 19
Nunnelly (a)	39.6	42.0	47.0	66.3	73.5	73.4	78.6	77.9	69.4	57.6	52.3	42.3	60.0	97	9	Mar. 24	Oct. 18
Palmetto	41.5	44.0	48.0	65.5	73.7	74.4	78.2	80.3	73.0	60.2	54.9	44.9	61.6	99	10	Apr. 7	Oct. 18
Pope	.....	.....	.....	.....	74.5	73.9	79.0	78.6	70.7	58.3	52.2	41.9	.....	101	.....	.....	Oct. 18
Riddleton	38.8	39.9	45.2	67.0	72.6	74.0	77.0	79.6	70.3	57.9	51.6	39.8	59.5	96	7	Apr. 2	Oct. 18
*Rogersville (a)	38.0	38.3	43.1	62.0	70.0	70.4	73.7	74.6	68.2	55.7	50.5	37.2	56.8	93	1	Apr. 7	Oct. 15
Rugby (a)	36.2	37.1	[d]42.3	62.7	69.6	70.8	74.3	74.4	68.8	[b]54.4	49.3	36.6	56.4	96	0	Apr. 7	Oct. 15
St. Joseph	40.6	44.0	48.2	65.6	73.0	73.9	79.5	79.7	72.4	59.4	53.3	42.9	61.0	103	9	Apr. 7	Oct. 18
Savannah	.....	44.4	50.0	70.2	77.1	77.2	81.6	82.7	.....	.....	.....	.....	.....	.....	.....	Mar. 24	.....
Sewanee	38.9	40.0	45.0	63.0	69.2	69.6	73.7	76.0	69.0	56.1	48.9	41.0	57.5	89	3	Apr. 3	Oct. 17
Springdale (a)	39.6	.....	.....	65.9	71.3	75.8	77.6	78.8	70.8	54.7	52.0	.....	.....	97	.....	Apr. 6	Oct. 9
Tellico Plains	.....	.....	.....	.....	.....	74.0	77.8	79.4	72.3	57.8	53.0	41.3	.....	98	.....	.....	Oct. 19
Trenton	37.6	39.4	45.1	66.4	73.2	74.0	79.0	78.4	68.5	57.4	50.6	41.8	59.3	98	11	Apr. 3	Oct. 18
Tullahoma	38.8	40.8	46.5	62.8	70.4	70.4	75.8	76.6	68.6	55.8	50.8	38.8	58.0	95	5	Apr. 3	Oct. 18
Union City	38.2	41.0	44.6	[d]65.4	73.6	75.8	79.8	78.2	69.2	57.5	50.0	41.8	59.6	98	9	.....	.....
Waynesboro (a)	39.8	40.7	46.7	63.0	70.2	71.8	79.0	77.2	69.5	57.7	53.3	42.5	59.3	99	11	Apr. 4	Oct. 17
Texas.																	
*Abilene	45.4	50.2	54.6	68.5	78.8	83.1	82.8	84.0	74.8	62.2	53.0	49.4	65.6	105	16	Apr. 2	Nov. 8
Albany (a)	45.7	47.2	49.8	63.1	74.4	78.8	78.2	79.1	68.3	57.4	48.2	42.2	61.0	95	10	Apr. 2	Nov. 30
Alice	58.2	.....	.....	.....	.....	.....	.....	.....	79.8	73.7	[c]62.8	.....	.....	.....	.....	.....	Nov. 30
*Amarillo	39.6	40.2	43.0	59.8	69.4	76.0	74.5	77.0	66.4	54.2	42.8	43.3	57.2	99	8	Apr. 2[1]	Nov. 4
Angleton	55.8	59.1	64.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Jan. 5	.....
Aurora (a)	44.9	49.6	55.9	69.8	78.0	82.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Austin[1]	55.4	54.5	57.2	69.8	.....	.....	84.6	85.6	79.6	.....	.....	.....	.....	.....	.....	Feb. 15	.....
Austin (c)[2]	49.8	51.6	54.9	65.4	76.2	82.1	82.4	83.9	77.6	65.2	57.4	51.5	66.5	102	23	.....	.....
*Ballinger	46.4	49.6	53.9	67.4	77.0	82.2	81.4	82.7	73.2	60.2	53.4	47.0	64.5	107	15	Apr. 3	Nov. 8
*Beeville	55.4	58.2	62.8	73.0	81.5	85.5	84.6	85.4	80.7	70.2	64.3	55.4	71.4	106	24	Feb. 15	Dec. 1
Blanco	.....	.....	.....	.....	.....	.....	.....	.....	.....	66.2	57.6	53.0	.....	.....	.....	.....	Nov. 27
Boerne (a)	52.4	51.7	58.5	67.2	77.1	83.8	82.6	83.8	76.5	64.0	58.2	52.0	67.8	102	23	Feb. 14	Nov. 28
Brady	48.2	.....	.....	66.8	77.8	83.2	83.2	83.2	[c]75.8	.....	.....	49.2	.....	105	.....	Apr. 2	.....

[1] E. Krueger. [2] Q. C. Smith.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Texas—Continued.																	
Brazoria	54.8	57.7	62.9	70.4	78.1	82.5	82.6	82.4	78.7	70.2	66.4	56.7	70.3	97	27	Jan. 5	Dec. 2
*Brenham	50.7	54.6	60.0	70.4	79.4	84.2	85.4	85.7	79.4	68.6	62.2	53.8	69.6	102	24	Jan. 6	Nov. 28
Brighton	.....	.....	.....	72.7	79.2	82.1	83.4	83.1	80.0	[1]71.1	.....	.....	.....	98	.....	.....	Nov. 30
Brownwood	47.5	49.5	58.0	66.2	77.9	81.9	84.9	86.4	74.8	62.4	[2]58.6	47.9	66.3	107	18	Apr. 2	Nov. 8
Burnet (*a*)	48.4	50.8	56.1	68.0	78.2	83.6	83.4	84.1	76.3	65.6	56.8	51.2	66.9	102	18	Mar. 16	Nov. 28
Camp Eagle Pass	54.8	57.3	63.4	75.1	82.8	89.2	86.8	87.9	.....	73.5	65.0	55.1	.....	110	18	Mar. 18	Nov. 5
Chillicothe	41.4	46.2	51.4	65.6	75.2	80.2	.....	.....	75.2	.....	.....	.....	.....	.....	.....	Apr. 2	.....
Coleman (*c*)	45.3	48.8	52.8	65.0	75.6	80.9	80.3	80.5	71.7	61.1	52.2	48.2	63.5	.....	16	Mar. 16	Nov. 8
College Station	47.0	54.0	58.4	68.5	76.9	82.3	83.7	84.3	80.0	67.0	59.5	53.8	68.0	101	21	Mar. 16	Nov. 8
*Columbia	52.2	56.4	62.0	70.6	77.4	81.2	81.2	84.4	77.0	67.6	64.7	53.6	69.0	96	24	Feb. 15	Dec. 2
*Corpus Christi	56.7	58.8	63.4	70.8	77.9	80.6	81.8	82.0	78.7	70.8	64.8	57.6	70.3	94	30	.....	Nov. 30
*Corsicana	45.6	50.2	54.9	.....	75.0	84.1	86.0	85.7	78.8	64.9	55.6	47.9	.....	106	9	Mar. 20	Nov. 8
*Cuero	52.2	56.8	61.6	72.0	80.6	84.9	85.5	85.0	80.0	69.1	62.0	54.3	70.3	101	25	Feb. 15	Nov. 8
*Dallas	43.4	49.2	53.3	68.2	77.0	81.8	83.1	84.4	76.9	63.1	54.0	47.4	65.2	105	12	Apr. 3	Nov. 8
Danevang	.....	55.0	61.7	70.9	78.8	83.3	84.3	83.4	78.8	70.2	63.4	52.8	.....	101	.....	Feb. 16	Dec. 1
Dean	37.6	.....	.....	.....	.....	77.7	75.5	76.6	67.8	.....	.....	.....	.....	104	.....	.....	.....
Dublin	44.8	48.6	53.6	67.7	77.0	83.6	83.6	83.6	73.8	61.8	53.4	47.2	65.0	104	16	Mar. 19	Nov. 8
Duval (*a*)	51.7	55.6	60.6	70.8	81.8	87.6	86.4	88.2	80.8	69.5	62.4	56.9	71.0	108	25	Feb. 8	Nov. 28
*El Paso	47.0	47.6	58.6	64.0	75.0	81.6	79.5	79.6	74.1	62.4	55.2	47.1	64.3	103	14	Mar. 19†	Nov. 5
Estelle	45.0	49.4	54.8	68.1	77.5	82.7	84.1	85.6	77.1	63.9	54.8	48.5	65.9	106	12	Apr. 2	Nov. 5
Forestburg	48.5	47.6	53.0	66.8	76.1	81.6	83.6	85.1	74.4	61.6	52.6	49.8	65.1	106	12	Apr. 2	Nov. 8
Fort Brown	62.4	62.8	68.4	74.2	81.8	84.0	84.4	85.2	80.7	72.4	68.0	.....	.....	101	.....	None	Nov. 29
Fort Clark	47.6	48.8	.....	.....	.....	87.1	80.2	86.3	79.4	65.7	61.8	54.4	.....	100	24	Feb. 25	Nov. 8
Fort McIntosh	55.4	57.7	66.2	75.9	83.0	86.7	85.8	86.6	79.6	69.6	62.4	53.2	71.8	104	27	Feb. 15	Nov. 29
Fort Ringgold	58.2	60.0	69.4	77.6	84.2	86.2	86.8	86.4	82.0	71.6	68.0	55.1	73.8	107	22	Feb. 16	Nov. 30
Fort Worth	[1]47.0	[2]52.4	[2]56.4	.....	.....	[2]85.4	[2]87.0	[2]84.6	[1]77.0	[2]64.4	[2]56.2	[2]50.6	.....	.....	15	Mar. 20	Nov. 27
Fredericksburg (*a*)	[2]49.0	50.6	56.6	[2]66.7	[2]77.3	[2]83.8	[2]81.7	[2]80.1	[2]77.5	[2]62.9	57.4	[2]49.4	66.1	99	20	Mar. 20	Nov. 8
Gainesville	[2]45.2	[2]47.6	.....	67.2	77.0	82.3	83.8	85.8	77.1	63.5	53.3	47.0	.....	106	14	Apr. 2	Nov. 5
*Galveston	53.2	57.1	60.9	69.0	78.4	82.3	83.6	84.0	80.2	71.4	65.2	56.7	70.2	94	32	Jan. 4†	Nov. 30
Georgetown (*a*)	48.4	51.2	56.2	66.8	75.9	[2]82.0	84.7	82.9	76.4	[2]63.3	[2]53.6	49.6	65.9	101	16	Mar. 20	Nov. 8
Graham	42.8	48.0	53.6	.....	[2]81.2	84.6	86.7	85.8	75.9	.....	[2]53.0	45.4	.....	106	9	.....	Nov. 13
Grapevine	45.6	49.9	54.9	66.8	[1]78.4	82.2	84.0	84.4	75.0	62.8	[2]53.2	48.5	65.5	106	14	Apr. 2	Nov. 8
Hale Center	45.4	46.2	48.6	63.1	73.2	79.0	76.1	77.2	70.0	58.5	51.0	48.8	61.4	102	13	Apr. 2	Oct. 30
Halletteville	52.9	56.0	61.3	71.5	80.6	84.6	84.8	85.3	79.8	67.2	62.7	54.3	70.1	104	22	Feb. 15	Nov. 28
Happy	39.8	40.0	43.9	59.3	70.5	78.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hartley	35.2	36.2	39.7	60.4	66.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haskell	42.8	45.8	49.8	70.1	80.2	86.5	82.4	83.4	71.0	.....	49.2	45.2	.....	108	13	Apr. 2	Nov. 7
*Hearne	.....	.....	.....	.....	78.0	84.6	84.8	86.1	78.6	.....	.....	.....	.....	105	.....	.....	.....
*Henrietta	.....	.....	.....	.....	80.2	86.0	87.0	88.2	77.4	64.4	53.3	47.3	.....	111	.....	.....	Nov. 27
*Houston	51.6	55.8	61.0	70.3	78.6	83.2	.....	84.8	78.6	69.2	65.0	53.7	.....	.....	28	Feb. 15	Dec. 2
*Huntsville	48.4	52.6	58.1	69.5	78.4	83.9	84.2	84.8	78.3	66.3	61.2	49.8	68.0	102	22	Mar. 20	Nov. 8
*Kerrville	48.6	49.3	55.7	[1]61.2	74.4	81.2	81.4	82.2	74.4	62.3	56.6	47.4	64.6	102	14	Mar. 21	Nov. 5
*Lampasas	49.8	52.8	57.5	66.2	77.1	83.6	83.6	83.6	76.4	61.6	58.6	50.9	66.8	105	15	Apr. 2	Nov. 5
Leakey	53.4	.....	60.9	68.8	77.4	82.6	.....	.....	.....	[1]66.1	.....	.....	.....	.....	.....	Mar. 20	.....
Llano (*e*)	50.0	52.2	57.5	69.7	82.2	88.4	86.6	86.0	78.6	66.3	58.0	51.6	68.9	105	22	Mar. 16	Nov. 8
*Longview	44.8	48.8	55.8	70.0	79.2	83.1	86.5	86.0	79.1	65.8	60.5	50.1	67.4	107	18	Mar. 21	Nov. 8
*Lufkin	.....	.....	.....	.....	[2]80.2	84.1	86.4	86.7	81.6	67.9	.....	.....	.....	108	.....	.....	.....
*Luling	52.2	55.2	60.1	70.5	80.4	84.5	84.8	85.5	79.6	68.2	62.8	53.6	69.8	102	23	Feb. 14	Nov. 28
Mann	46.6	53.6	55.4	69.0	73.2	83.6	[1]84.8	87.9	[1]77.6	.....	.....	53.4	.....	107	17	Apr. 2	Nov. 8
Marathon	.....	.....	.....	.....	.....	.....	80.4	76.6	71.0	61.4	.....	.....	.....	.....	.....	.....	.....
Marshall	54.7	52.9	52.2	.....	.....	.....	.....	85.6	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mesquitville (*a*)	47.1	48.0	52.6	[2]68.2	77.8	84.6	83.2	81.4	[1]75.9	60.1	52.0	48.8	65.0	108	13	Apr. 2	Nov. 3
Midland	45.2	48.6	57.8	68.8	78.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 2	.....
Mount Blanco (*a*)	40.2	42.9	46.7	63.5	75.6	81.2	77.5	80.0	71.2	56.0	46.8	43.6	60.4	104	9	Apr. 2	Oct. 30
New Braunfels	51.1	54.4	[2]56.6	68.9	78.6	83.4	83.6	84.2	77.7	65.2	60.2	53.3	68.1	99	23	Mar. 20	Nov. 28
*Orange	49.0	53.3	58.8	70.0	77.6	.....	77.6	81.0	77.6	67.2	61.8	48.4	.....	95	24	Mar. 20	Dec. 1
*Palestine	47.9	52.8	57.5	68.3	76.6	81.6	83.4	84.3	79.2	66.4	59.2	53.0	67.5	104	20	Mar. 20	Nov. 8
*Paris	42.6	48.2	51.8	68.0	75.8	81.6	84.7	86.1	79.6	64.8	55.2	50.7	65.8	108	15	Apr. 3	Nov. 8
Point Isabel	.....	.....	70.1	75.7	82.8	85.6	85.2	84.4	82.3	76.9	71.3	62.0	.....	94	.....	.....	Nov. 30
Rheinland (*a*)	44.1	47.2	51.2	67.3	80.2	81.6	84.4	86.3	76.8	62.8	52.4	47.8	65.4	110	14	Apr. 2	Nov. 7
Roby	[1]44.2	[2]48.6	51.7	66.8	76.5	80.0	80.7	83.3	[2]75.9	.....	.....	.....	.....	.....	.....	Apr. 3	Nov. 6
Rockport (*a*)	55.4	58.3	62.9	71.8	79.8	84.9	86.3	89.2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Roundrock	.....	.....	.....	.....	.....	88.4	.....	90.6	84.6	70.6	59.6	.....	.....	.....	.....	.....	Nov. 8
Runge	55.4	59.4	61.7	71.8	80.2	84.9	84.0	85.6	80.0	70.2	65.4	58.5	71.4	104	23	Mar. 3	Nov. 28
*San Antonio	54.0	56.7	60.9	70.3	78.8	84.0	83.8	84.8	78.7	68.2	62.0	56.5	69.9	100	27	Feb. 15	Dec. 2
San Antonio[1]	54.5	56.7	61.4	71.0	79.6	85.0	85.2	86.1	80.0	68.9	63.4	56.6	70.7	102	25	Feb. 14	Nov. 28
Sanderson	.....	.....	.....	.....	.....	.....	.....	.....	73.4	61.8	57.0	48.8	.....	.....	.....	.....	Nov. 28
*San Marcos	.....	.....	.....	.....	79.3	84.9	84.4	84.2	78.4	66.6	60.4	51.4	.....	102	.....	.....	Nov. 28
Sierra Blanca	48.8	50.8	58.5	64.3	76.8	80.6	75.8	76.6	71.0	58.1	54.8	47.1	63.6	104	7	Apr. 12	Nov. 28
Stafford	51.5	55.0	61.8	70.5	79.6	84.0	.....	.....	77.6	67.5	62.7	54.4	.....	.....	25	Feb. 15	Nov. 30
Sulphur Springs	46.2	51.8	59.5	66.9	.....	.....	.....	87.4	80.8	66.1	57.0	51.1	.....	.....	14	Apr. 1	Nov. 7
Temple[3]	48.6	51.5	54.7	67.9	77.4	83.5	84.4	85.6	77.9	66.0	.....	51.2	.....	102	18	Mar. 16	.....
*Temple[3]	.....	.....	.....	.....	79.0	85.0	85.8	86.2	78.6	.....	.....	.....	.....	103	.....	.....	.....
Tulia	.....	.....	.....	.....	.....	.....	76.2	78.0	67.9	55.6	44.8	43.0	.....	.....	.....	Apr. 18	Oct. 30
Twohig	61.0	62.2	68.4	.....	82.8	[2]86.6	86.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tyler	43.5	47.8	53.5	67.9	78.2	81.4	84.3	83.2	75.6	64.0	.....	49.1	.....	103	16	Mar. 20	Nov. 8
*Waco	49.0	52.5	56.4	69.3	79.7	85.2	87.4	87.0	79.3	65.8	57.2	49.4	68.2	103	20	Feb. 7	Nov. 8
*Weatherford	44.1	49.2	53.4	67.6	77.4	83.1	84.8	85.1	76.0	64.4	53.7	49.6	65.7	105	15	Mar. 19	Nov. 8
Utah.																	
Blue Creek (*g*)	31.6	33.8	37.7	39.5	50.3	79.8	78.8	77.1	65.5	52.6	32.6	30.1	50.7	102	0	.....	.....
Castlegate	28.8	31.6	36.5	45.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cisco	31.0	34.4	43.2	51.6	62.7	77.2	81.2	75.8	66.0	54.2	38.8	31.0	53.9	109	0	May 10	Oct. 22
Corinne (*g*)	29.1	36.3	43.1	54.0	60.9	83.7	84.8	78.4	68.7	58.4	37.5	31.3	55.4	100	−6	.....	.....
Deseret	31.2	32.9	[2]41.0	[2]46.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fillmore	33.9	37.6	43.0	47.6	54.8	73.1	74.8	74.4	64.9	54.2	38.2	34.4	52.6	108	−11	May 19	Sept. 26
Fort Duchesne	11.9	15.8	35.1	43.7	53.4	67.2	70.4	69.2	59.6	48.0	30.3	22.4	43.9	100	−17	.....	.....

[1] G. A. Duerler, jr. [2] W. G. Jones. [3] Cotton region observer.

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Utah—Continued.																	
Giles	29.2	32.6	43.8	49.6	62.4	76.0	79.7	75.6	65.5	52.0	35.4	25.8	52.3	107	— 5	May 16	Oct. 10
Grover	31.2	31.1	36.6	41.1	50.5	63.8	66.2	65.4	58.6	48.4	33.0	30.2	46.3	96	—11	May 20	Sept. 11
Heber	23.6	22.0	31.6	40.8	48.9	64.6	65.9	64.0	54.7	.....	[j]30.8	28.4	.....	94	—14	June 11	Sept. 10
Kelton (*g*)	28.9	27.9	38.7	49.1	61.3	75.4	76.5	74.9	58.4	48.1	39.1	32.6	50.9	96	3	.....	.....
Koosharem	29.8	27.4	33.9	38.4	48.1	.....	64.4	63.0	55.6	.....	.....	28.2	.....	.....	.....	May 22	Sept. 11
Levan	30.2	31.7	38.0	43.8	51.8	68.0	70.6	69.4	60.8	49.9	34.8	31.9	48.4	98	—10	May 16	Sept. 27
Loa	28.3	26.2	33.0	38.6	48.4	63.5	67.0	64.3	55.5	43.4	29.0	25.9	43.6	96	—18	June 11	Sept. 10
Logan	27.9	33.2	35.4	43.6	47.9	66.0	71.2	70.3	60.7	[c]53.0	34.1	29.1	47.7	97	—11	May 18	Oct. 10
Mammoth	.....	32.5	32.3	42.0	49.2	68.6	71.1	71.3	61.8	52.0	33.5	30.4	.....	97	.....	May 19	Oct. 27
Manti	29.6	33.2	40.4	46.8	55.7	69.2	71.3	71.4	61.8	51.7	33.8	33.3	49.9	106	— 8	May 20	Sept. 11
Moab	33.6	36.8	47.0	56.8	64.8	73.8	79.7	75.0	66.0	53.6	39.4	30.2	54.7	100	6	May 16	Oct. 24
Mount Pleasant (*a*)	30.9	30.6	36.9	43.9	51.1	.....	71.2	71.4	65.1	55.5	33.1	33.0	.....	.....	0	May 14	Sept. 10
Ogden (*g*)	31.0	34.7	39.0	48.8	54.6	74.5	76.1	77.3	64.9	54.2	36.6	33.4	52.1	97	— 2	.....	.....
Pahreah	36.2	37.2	48.1	50.3	59.0	71.8	.....	70.2	64.4	53.8	.....	.....	.....	.....	.....	May 10	Oct. 28
Park City	.....	.....	26.0	32.0	38.2	58.6	63.2	63.0	52.8	43.4	27.1	33.0	.....	87	.....	May 20	Sept. 9
Parowan	33.6	33.4	40.2	44.5	53.5	68.5	70.9	69.7	60.7	51.1	35.2	34.8	49.7	98	— 7	May 18	Sept. 27
Promontory (*g*)	25.5	32.5	37.3	47.2	57.8	73.6	75.5	79.8	65.5	53.6	30.5	29.1	50.7	108	—12	.....	Nov. 3
St. George	38.6	40.9	47.3	52.4	62.8	78.5	79.4	77.0	69.5	59.4	40.7	38.8	57.1	112	4	May 15	Sept. 27
*Salt Lake City	34.0	36.8	40.2	46.4	51.4	70.0	74.2	73.7	64.0	54.4	37.2	36.2	51.5	97	— 2	May 15	Oct. 29
Scipio	31.4	32.0	[c]38.7	39.9	47.4	67.3	66.9	69.2	61.5	48.8	32.2	31.2	47.2	97	—12	June 10	Sept. 26
Snowville	27.8	31.3	34.1	42.1	46.3	63.2	69.4	67.3	58.0	48.0	30.0	32.2	45.8	95	—12	May 21	Sept. 26
Soldier Summit	20.4	20.6	27.0	35.6	43.8	58.6	62.2	61.9	51.6	41.0	20.6	22.0	38.8	95	—20	June 26	Sept. 9
Terrace (*g*)	27.5	33.0	33.8	44.9	53.7	80.5	81.7	78.7	67.8	54.6	30.1	29.8	51.3	106	11	.....	.....
Thistle	25.8	29.4	40.8	46.0	53.2	68.6	71.6	66.8	59.4	48.3	25.8	30.5	47.2	97	—11	May 20	Sept. 27
Tooele	.....	.....	39.0	44.8	49.2	68.0	73.1	72.0	62.6	52.5	35.8	36.2	.....	96	.....	May 19	Oct. 28
Vernal	20.9	24.1	[j]34.2	45.8	55.4	71.2	71.4	69.3	58.4	48.1	32.1	.....	.....	95	— 2	May 20	Oct. 10
Vermont.																	
Brattleboro	20.2	24.0	28.1	48.6	61.5	64.7	72.0	70.8	59.4	46.8	41.9	24.8	46.9	92	—17	.....	Sept. 24
Burlington	18.4	20.3	25.5	47.1	61.4	67.2	73.5	70.2	60.6	47.2	42.0	23.4	46.4	94	—20	Apr. 10†	Oct. 10†
Chelsea	13.8	16.6	20.7	42.0	56.4	59.8	66.8	63.7	54.8	42.2	36.8	17.2	40.9	87	—27	May 20	Sept. 5
Cornwall	16.2	18.8	22.5	47.2	59.6	64.0	70.5	68.2	58.6	46.1	41.0	23.6	44.7	94	—22	Apr. 23†	Sept. 24
Enosburg Falls	16.0	18.9	23.6	44.6	58.1	62.0	69.6	64.5	58.2	43.8	39.0	19.6	43.2	89	—32	May 18	Sept. 23†
Hartland	15.8	19.0	24.8	44.8	57.0	60.5	67.3	64.8	56.2	43.8	38.0	20.0	42.7	92	—27	May 20	Sept. 24
Jacksonville	15.5	16.6	20.3	42.9	57.1	59.7	65.6	63.2	55.3	43.0	37.9	19.9	41.4	91	—27	May 20	Aug. 20
*Northfield	13.2	15.5	19.9	42.1	56.2	59.9	67.0	64.0	54.9	42.5	37.1	17.9	40.8	91	—30	May 24†	Sept. 5
Norwich	21.3	23.6	23.2	43.5	57.4	60.5	67.4	65.4	56.0	43.6	37.6	19.4	43.2	92	—26	May 20	Sept. 23
St. Johnsbury	15.5	16.7	22.3	43.4	58.1	61.8	68.9	65.8	56.3	43.7	37.0	16.2	42.1	89	—31	May 20	Sept. 23
Strafford (*a*)	16.0	19.2	22.1	44.3	57.7	61.1	67.4	65.3	55.4	42.7	36.0	18.6	42.2	88	—22	May 21	Sept. 23
Vernon	19.0	23.0	28.3	48.8	62.1	66.9	73.1	71.8	59.7	46.5	41.7	23.0	47.0	95	—23	.....	Sept. 23
Wells	17.4	19.8	24.0	43.7	59.4	64.0	70.0	67.1	57.5	44.4	39.4	21.4	44.6	90	—26	Apr. 26†	Sept. 23
Woodstock	15.1	18.4	24.6	44.2	59.4	63.2	70.2	67.1	57.0	43.9	37.8	19.6	43.4	93	—36	May 20	Sept. 12
Virginia.																	
Alexandria	37.6	37.0	37.9	57.2	68.1	.....	.....	78.5	67.5	54.1	49.7	34.9	.....	.....	2	.....	.....
Alleghany	.....	.....	23.6	58.6	68.0	67.3	71.9	72.4	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ashland	35.4	37.6	40.0	57.3	69.2	72.1	77.2	75.6	67.4	55.0	53.1	39.7	56.6	98	4	Apr. 9	Sept. 24
Avon	35.8	37.8	42.6	61.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barboursville	.....	.....	.....	.....	.....	.....	.....	.....	68.0	53.2	[f]52.0	35.6	.....	.....	.....	.....	.....
Bedford City	35.3	39.4	42.7	59.6	70.0	.....	.....	.....	.....	61.3	.....	.....	.....	.....	.....	Apr. 8	Sept. 5
Bigstone Gap	33.6	33.6	38.6	57.2	67.0	68.8	71.6	71.4	64.4	51.1	46.6	33.8	53.1	92	—10	Apr. 4	Sept. 24
Birdsneat (*a*)	36.5	39.5	.....	57.8	70.9	74.9	79.9	78.7	71.2	58.4	55.4	39.4	.....	.....	14	May 8	Oct. 19
Blacksburg	31.9	34.4	38.5	56.2	66.1	67.3	70.5	70.3	62.3	50.4	47.0	35.0	52.5	92	— 4	Apr. 9	Sept. 24
Buckingham	33.8	[c]37.1	.....	56.2	70.2	71.0	76.8	76.4	67.8	53.6	49.0	34.8	.....	100	0	Apr. 9	Sept. 23
Burkes Garden	.....	.....	.....	54.2	67.0	65.0	69.6	67.2	60.4	.....	44.2	30.6	.....	91	.....	Apr. 23	Sept. 24
Callaville	36.7	41.0	45.0	60.8	71.2	72.9	72.2	76.9	69.2	56.3	52.8	38.4	58.8	97	6	Apr. 5	Oct. 19
*Cape Henry	37.4	41.6	46.0	58.1	69.8	73.8	79.3	78.8	72.0	59.4	56.8	41.7	59.6	100	10	Mar. 24	Nov. 14
Charlottesville	35.8	39.7	43.1	60.0	70.9	.....	.....	.....	.....	55.8	.....	38.7	.....	.....	.....	Apr. 8	Oct. 9
Clifton Forge	.....	.....	.....	.....	.....	.....	.....	[d]74.4	66.6	48.5	44.6	31.0	.....	.....	.....	.....	Oct. 19
Dale Enterprise	31.4	33.6	35.9	55.1	67.2	68.0	72.5	71.3	63.9	50.8	47.8	34.2	52.6	96	— 1	Apr. 11	Sept. 24
Fredericksburg	35.2	37.6	41.6	58.4	69.8	72.3	78.0	77.2	68.2	55.4	51.6	36.0	56.8	91	8	Apr. 18	Oct. 9
Grahams Forge	.....	[f]34.2	40.1	58.4	67.1	67.7	72.0	72.2	.....	.....	[d]46.8	[b]36.4	.....	.....	.....	Apr. 9	Oct. 22
Hampton	38.0	42.4	45.2	58.7	71.4	74.5	79.4	79.7	71.9	59.6	56.4	41.2	59.9	96	13	Apr. 9	Oct. 19
Hot Springs	.....	34.6	38.2	57.2	66.2	63.9	68.3	67.6	62.4	50.2	47.2	33.6	.....	88	.....	Apr. 9	Sept. 24
Irwin	35.2	38.6	42.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lexington	34.4	37.6	40.9	59.2	70.1	70.6	74.7	74.1	66.8	54.3	50.9	36.6	55.9	94	5	Apr. 8	Sept. 24
*Lynchburg	36.2	39.2	42.3	60.2	70.8	71.8	76.9	76.8	68.7	55.7	52.2	39.0	57.6	98	6	Apr. 8†	Oct. 19
Manassas	33.4	36.8	40.0	57.6	69.2	71.6	77.4	75.4	68.4	53.8	51.0	35.6	55.8	98	6	Apr. 9	Sept. 24
Marion	[k]32.4	[d]37.4	[e]40.4	[f]57.4	[c]69.1	69.5	[f]73.3	[j]72.5	.....	[b]50.6	[d]49.0	[c]35.0	.....	91	— 1	Apr. 4	Sept. 24
Monterey	29.0	28.3	32.5	54.2	64.8	66.3	.....	66.8	[j]63.2	.....	.....	.....	.....	.....	.....	Apr. 23	Sept. 7
*Norfolk	38.8	42.8	46.1	59.9	71.6	73.8	79.2	79.2	71.0	59.0	56.8	41.2	60.0	98	11	Apr. 4	Nov. 14
Nottoway	36.4	41.9	45.6	59.4	.....	.....	.....	79.1	71.1	57.2	54.8	39.5	.....	.....	3	Apr. 11	Oct. 19
Petersburg	37.0	40.0	44.4	58.5	73.9	74.0	78.4	78.2	71.3	57.9	55.8	39.1	59.0	99	9	Apr. 9	Oct. 8
Quantico	.....	.....	.....	.....	67.4	71.6	77.6	76.2	67.2	58.4	49.5	33.2	.....	100	.....	Apr. 4	Oct. 19
Richmond (near)	38.2	41.4	45.2	61.6	72.8	73.1	78.8	79.8	70.6	58.3	55.3	40.0	59.6	103	7	Apr. 9	Oct. 18
Rockymount	37.4	41.0	45.2	62.2	72.5	72.2	75.8	76.0	68.8	57.0	54.6	40.6	58.6	95	4	Apr. 8	Oct. 19
Rural Retreat	.....	.....	.....	55.5	67.0	66.5	71.7	70.2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem	36.2	40.5	43.0	60.5	70.2	70.4	76.4	76.4	70.6	57.7	55.5	42.2	58.3	97	4	Apr. 10	Oct. 25
Saltville	35.1	37.1	41.3	58.8	68.4	69.6	72.8	73.2	66.2	52.8	48.6	35.9	55.0	92	— 1	Apr. 8	Oct. 8
Smithville	35.6	39.6	43.4	59.9	71.1	72.3	77.6	70.0	.....	56.4	53.4	37.4	.....	98	5	Apr. 8	Oct. 19
Spottsville	35.5	40.6	44.0	59.6	71.2	73.8	79.0	77.9	69.0	55.2	52.2	36.4	57.9	100	3	Apr. 9	Oct. 19
Stanardsville	32.7	36.6	39.9	57.9	67.9	69.1	74.3	74.1	66.8	53.5	50.3	36.9	55.0	97	4	Apr. 9	Oct. 8
Stanleyton	.....	.....	.....	.....	.....	.....	76.5	73.6	.....	.....	.....	36.8	.....	.....	.....	.....	.....
Staunton	33.6	36.4	35.9	58.0	69.1	69.6	74.8	73.6	66.5	53.8	52.4	38.2	55.4	99	3	Apr. 8	Oct. 8
Stephens City	31.6	34.4	39.2	57.2	69.2	70.5	75.6	74.4	67.6	52.6	49.3	35.2	54.5	97	2	Apr. 9	Oct. 9
Sunbeam	36.8	41.2	45.0	60.9	72.3	77.8	79.7	77.4	69.8	54.8	53.4	36.4	58.8	96	9	Apr. 5	Oct. 19
Warsaw	34.4	38.6	[c]42.3	59.2	70.5	73.6	78.2	77.0	[c]67.6	55.6	52.2	36.3	57.1	98	7	Apr. 9	Oct. 18

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
Virginia—Continued.																	
Westbrook Farm	35.8	39.0	43.4	59.4	71.8	73.6	78.9	77.4	69.5	55.0	52.4	38.0	57.8	99	8	Apr. 8	.....
Wytheville	32.4	34.4	.....	58.0	66.8	67.6	.....	70.2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington.																	
Aberdeen	41.1	42.9	43.3	46.6	52.0	58.0	64.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Blaine	34.4	39.7	38.4	44.2	50.1	56.9	62.0	58.7	52.4	47.2	30.5	39.7	46.2	89	— 3	Apr. 29	Sept. 27
Cascade Tunnel	.....	33.1	31.8	37.5	43.9	.....	65.2	68.5	40.3	36.0	*24.4	31.6	.....	.....	.....	.....	.....
Centerville	35.0	42.4	42.2	45.6	51.2	61.8	72.3	67.9	59.0	51.2	29.8	36.6	49.6	104	—24	Apr. 19	Sept. 10
Chehalis	39.2	42.6	*42.5	46.6	54.0	62.6	68.8	67.4	59.5	53.4	36.7	44.9	51.5	101	5	Apr. 19	Nov. 4
Colfax	34.2	38.8	37.9	44.8	49.0	60.2	[b]69.6	64.4	54.0	48.4	30.8	39.0	47.6	100	—10	May 17	.....
Connell	.....	44.5	42.0	47.6	63.3	69.8	75.4	71.8	61.3	[c]55.2	33.0	.....	.....	112	.....	June 20	.....
Coupeville	40.6	43.4	41.4	45.7	50.9	56.4	61.2	60.2	53.8	49.4	37.0	43.4	48.6	88	11	.....	Nov. 16
*East Clallam	38.9	42.0	40.5	43.4	48.7	53.4	58.4	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 23†	.....
Eastsound	40.0	43.2	40.6	46.6	51.8	58.0	63.6	61.2	.....	[c]49.8	38.4	[d]45.0	.....	80	14	Apr. 3	Nov. 16
Ellensburg	23.5	34.3	38.2	44.8	52.9	61.4	71.4	.....	56.0	46.4	23.8	30.4	.....	.....	—29	May 4	.....
Ellensburg (near)	24.2	35.1	38.3	44.9	52.1	63.3	75.0	68.8	58.2	48.4	27.0	31.0	47.2	103	—24	Apr. 17	.....
*Fort Canby	42.8	45.7	43.8	45.6	49.7	56.4	61.2	60.6	57.2	53.2	41.0	45.6	50.2	89	20	Mar. 4	Nov. 16
Fort Simcoe	32.6	40.8	41.9	*47.5	53.4	67.8	78.2	72.0	61.8	55.0	32.4	36.7	51.7	112	—10	May 7	Nov. 2
Fort Spokane	27.6	35.8	37.9	45.2	49.5	60.8	72.3	68.2	.....	47.6	27.2	33.4	.....	107	—25	May 15	Oct. 7
Grandmound	39.8	43.2	41.4	45.6	51.9	59.2	67.6	64.6	56.3	51.4	34.6	43.1	49.9	97	— 5	Apr. 20	Nov. 5
Hunters	25.3	30.4	30.6	38.1	44.8	54.8	64.2	.....	50.4	42.4	22.4	30.5	.....	.....	—18	June 11	Sept. 10
Kennewick	40.2	47.8	46.8	52.0	59.4	71.0	78.3	72.8	63.8	55.7	36.3	36.7	55.1	107	—12	Apr. 16	Nov. 6
Lakeside	28.1	35.4	38.4	47.8	53.4	66.0	74.9	70.8	60.2	50.6	27.6	34.7	49.0	97	— 3	Apr. 15	Nov. 5
Lapush	43.0	45.2	43.6	45.6	50.0	55.6	.....	.....	53.4	51.4	37.2	44.8	.....	.....	14	.....	.....
Loomis	.....	.....	.....	.....	.....	.....	.....	71.4	59.0	48.8	*24.8	32.7	.....	.....	.....	.....	Oct. 7
Madrone (*a*)	40.8	44.0	42.3	46.3	52.4	58.8	63.6	62.2	54.4	51.4	37.8	44.0	49.8	89	8	Apr. 19	Nov. 5
Mayfield	38.0	43.1	.....	.....	.....	.....	.....	64.6	57.8	*49.8	36.3	42.1	.....	.....	8	May 3	Nov. 5
Montecristo	33.3	33.6	31.4	35.5	40.3	50.6	64.0	62.7	54.4	48.2	30.8	.....	.....	91	.....	May 16	Sept. 8
Moxee Valley	31.4	39.6	40.3	48.6	55.2	65.9	77.0	70.6	59.4	50.1	29.7	34.4	50.2	106	—22	May 17	Sept. 26
*Neahbay	42.0	44.4	42.0	44.8	49.8	54.5	60.2	59.4	.....	.....	.....	.....	.....	.....	.....	Apr. 23	.....
New Whatcom	39.8	44.1	43.6	47.2	53.4	60.2	65.8	62.4	56.4	51.4	34.2	43.8	50.2	85	4	Apr. 19	Nov. 6
Olga	40.0	43.8	42.2	44.6	49.9	56.8	61.0	58.8	50.0	52.1	36.5	40.9	48.0	81	14	May 8	Nov. 16
Olympia	41.1	44.0	43.6	46.3	*54.4	59.4	66.5	63.6	56.6	52.0	37.6	44.5	50.8	95	4	Apr. 16	Nov. 5
Pine Hill	34.4	42.1	41.6	46.0	52.8	62.6	72.8	65.5	59.7	51.4	33.3	37.3	50.0	100	— 9	Apr. 19	Nov. 17
Pomeroy	38.9	44.2	43.6	48.2	53.7	68.9	80.6	74.2	63.3	55.4	34.9	41.6	54.0	104	— 7	May 19	Oct. 12
*Port Angeles	39.0	42.0	39.6	43.8	49.0	53.8	58.9	58.5	52.6	48.0	36.9	42.6	47.1	83	12	Apr. 17	Oct. 27
*Port Crescent	37.2	41.2	39.3	.....	50.0	55.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 17†	.....
Pullman	32.2	37.0	36.2	43.0	47.7	60.2	70.8	66.6	56.4	48.6	29.8	38.0	47.2	98	—12	May 17	Oct. 11
*Pysht	37.3	41.3	40.1	44.6	50.7	56.4	62.4	60.2	.....	47.6	38.4	43.4	.....	85	20	May 15†	Oct. 27
Queets	.....	.....	49.2	[d]46.3	49.2	55.6	61.8	62.4	55.2	51.0	37.6	.....	.....	90	.....	Apr. 16	Nov. 6
Rosalia	31.0	37.4	36.1	42.8	47.5	59.3	69.1	66.1	55.8	47.8	29.6	37.6	46.7	99	— 6	.....	Sept. 26
*Seattle	41.8	44.8	43.1	47.0	52.4	60.2	67.2	63.9	56.7	52.8	38.4	44.5	51.1	93	15	Mar. 31	Nov. 17
Sedro	.....	.....	.....	.....	.....	.....	.....	[e]63.6	55.0	52.6	36.5	45.3	.....	.....	.....	.....	Sept. 27
Shoalwater Bay (*h*)	42.4	44.4	43.6	45.7	50.7	57.1	61.8	.....	57.8	55.2	43.0	50.0	.....	.....	21	.....	.....
Silvercreek	38.8	41.4	40.4	42.7	48.4	56.0	64.4	62.3	54.9	49.5	35.8	41.1	48.0	95	9	May 29	Nov. 16
Snohomish	40.7	45.2	42.4	47.0	53.2	59.5	[f]64.2	63.4	56.4	52.6	38.1	43.4	50.5	92	7	Apr. 17	Nov. 6
Southbend	42.8	45.9	42.6	45.7	51.7	59.8	65.8	.....	.....	.....	43.4	43.4	.....	.....	16	Apr. 20	Nov. 5
*Spokane	30.8	38.9	38.2	45.2	50.4	62.9	73.2	68.6	58.4	49.8	30.6	35.8	48.6	100	—13	Apr. 20	Oct. 27
Stampede	.....	.....	.....	.....	43.0	53.8	66.2	62.4	55.3	48.6	.....	.....	.....	96	.....	June 14	Oct. 31†
Stillaguamish	37.2	40.6	39.0	44.5	.....	57.1	62.8	61.6	54.2	.....	34.1	42.2	.....	.....	2	Apr. 20	Nov. 16
Sunnyside	32.6	41.4	41.9	48.8	56.4	66.6	77.2	72.0	61.4	51.2	30.2	36.1	51.3	105	—23	May 17	Oct. 6
Tacoma	40.6	42.8	42.0	45.2	51.0	59.5	66.2	62.4	54.8	51.0	36.4	42.2	49.5	95	8	Apr. 20	Nov. 6
*Tatoosh Island	41.6	44.2	42.2	44.6	48.4	53.0	57.0	57.4	52.0	50.2	39.7	45.4	48.0	72	24	Mar. 5	Nov. 16
Union City	39.3	44.0	43.3	45.6	52.0	61.8	70.8	65.0	56.6	49.0	37.6	42.4	50.6	97	9	Apr. 19	Nov. 5
Vashon	36.8	38.2	42.0	46.4	51.6	59.0	64.6	62.2	55.4	51.6	38.4	43.4	49.1	88	11	Apr. 17	Nov. 17
*Walla Walla	39.1	44.5	44.1	48.9	54.4	67.8	79.1	74.2	62.6	54.2	33.8	39.2	53.5	106	— 9	Apr. 16	Nov. 6
Waterville	23.8	30.4	33.3	41.4	48.1	60.8	67.3	67.6	53.9	46.6	23.5	28.0	43.7	101	—21	May 17	Sept. 12
Wenatchee Lake	25.9	31.8	32.2	40.2	47.5	57.0	67.2	60.6	53.2	44.8	24.8	30.5	42.8	92	—11	May 4	Sept. 26
West Ferndale	38.6	42.6	42.4	47.2	53.4	60.4	66.2	63.3	62.6	52.2	34.2	43.2	50.5	95	11	Apr. 14	Nov. 17
West Virginia.																	
Beckley	.....	.....	.....	50.6	60.5	67.3	74.4	72.4	63.0	.....	.....	.....	.....	96	.....	Apr. 10	.....
Beverly	32.7	32.2	36.5	57.6	68.4	69.3	73.2	72.8	65.3	48.3	46.1	34.4	53.1	94	—10	Apr. 8	Oct. 9
Bloomery	28.7	29.8	30.8	51.2	62.3	64.9	70.5	68.4	62.2	48.6	45.8	31.2	49.5	95	—10	Apr. 8	Oct. 18
Bluefield	34.2	33.5	39.5	58.9	68.8	.....	.....	72.8	65.4	52.4	47.5	36.2	.....	.....	— 7	Apr. 8	Oct. 18
Buckhannon	32.1	32.7	[e]34.2	56.6	69.0	65.9	71.7	69.9	62.8	.....	.....	.....	.....	90	.....	Apr. 5	Sept. 24
Burlington	29.6	33.9	33.9	55.2	66.0	68.2	73.0	71.2	63.6	49.0	49.0	33.3	52.2	93	— 3	Apr. 8	Oct. 7
Creston	.....	33.7	35.8	.....	.....	.....	.....	.....	.....	49.4	52.9	.....	.....	.....	.....	.....	.....
Elkhorn	36.7	37.2	41.3	59.2	68.8	68.9	72.7	71.6	65.4	51.2	51.7	38.2	55.2	90	— 7	Apr. 8	Oct. 19
Ella	30.4	31.5	32.4	57.3	.....	69.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 4	.....
Glenville	31.7	34.7	35.6	58.2	67.9	69.4	72.3	72.0	65.2	49.9	47.4	35.2	53.3	91	— 6	Apr. 8	Oct. 9
Grafton	30.8	31.3	33.4	59.2	68.2	69.2	72.3	71.8	65.4	50.3	46.8	34.0	52.7	94	— 5	Apr. 8	Sept. 24
Green Sulphur	31.1	32.2	39.4	57.0	69.2	70.8	74.2	74.2	67.2	53.2	50.4	33.9	54.4	93	0	Apr. 11	Oct. 19
Hewett	35.4	37.0	39.4	61.8	71.2	71.8	76.0	75.1	68.8	55.4	49.0	35.8	56.4	97	— 6	Apr. 8	Oct. 8
Hinton	35.6	36.9	40.6	59.6	[f]71.1	71.2	70.0	74.2	67.2	53.1	49.1	35.7	55.4	94	0	Apr. 8	Oct. 19
Marlinton	29.1	31.1	34.8	53.0	66.1	69.7	71.0	68.7	61.4	47.4	44.4	31.4	50.7	89	— 3	Apr. 11	Oct. 8
Martinsburg	31.2	32.8	32.0	56.2	66.4	69.8	74.5	73.6	66.2	52.4	47.9	33.4	53.0	96	— 1	Apr. 10	Oct. 9
Monaroh	.....	.....	.....	.....	.....	69.0	72.6	.....	.....	.....	.....	38.2	.....	.....	.....	.....	.....
Morgantown	31.0	32.4	33.4	56.6	68.2	70.0	73.6	.....	65.9	51.6	45.5	35.0	.....	.....	— 4	Apr. 8	Oct. 2
New Martinsville	32.6	31.7	35.8	59.2	69.2	69.8	74.0	74.2	65.6	51.3	50.0	36.6	54.2	95	0	Apr. 8	Oct. 22
Nuttallburg	32.1	32.4	31.3	56.4	66.3	67.2	70.9	69.0	63.5	53.2	.....	*38.9	.....	90	— 5	Apr. 8	Sept. 24
Oldfields	31.0	34.2	34.4	58.3	67.4	69.4	74.1	[d]72.5	65.0	49.8	47.8	33.6	53.1	96	— 6	Apr. 9	Sept. 24
*Parkersburg	33.3	34.2	35.2	59.7	70.2	71.0	74.6	73.6	65.9	51.4	48.7	36.8	54.6	97	0	Apr. 8†	Oct. 9
Pennsboro	33.1	33.4	34.8	58.7	69.0	68.2	74.1	75.2	65.1	51.5	48.2	35.2	53.9	96	— 5	Apr. 8†	Sept. 23
Philippi	.....	.....	37.1	.....	71.0	71.2	75.2	74.4	69.0	54.8	53.4	34.8	.....	95	.....	.....	Oct. 21
Point Pleasant	34.2	35.3	37.4	61.4	71.7	72.8	76.1	75.4	67.0	52.0	48.1	37.0	55.7	95	0	Apr. 8	Oct. 19
Powellton	32.8	35.5	36.8	60.0	69.1	70.0	73.5	.....	65.6	52.2	49.8	36.2	.....	.....	— 5	Apr. 8	Oct. 8

MONTHLY AND ANNUAL MEAN TEMPERATURE, ETC., 1896—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual. Mean.	Annual. Extremes. Max.	Annual. Extremes. Min.	Killing frost. Last in spring.	Killing frost. First in autumn.
West Virginia—Cont'd.																	
Sandyville	32.8	33.3	35.2	59.2	68.8	70.8	74.7	72.3	.....	.....	.....	.....	.....	.....	.....	Apr. 8	.....
Spencer	32.0	33.4	37.4	64.0	70.8	71.3	.....	.....	.....	.....	.....	36.8	.....	.....	—15	Apr. 8	.....
Tannery (*a*)	29.9	30.7	32.1	.....	63.1	65.0	67.5	66.8	60.0	.....	45.8	33.2	.....	93	0	.....	Oct. 9
Weston (*a*)	33.7	33.9	36.2	59.5	70.0	71.9	75.9	74.7	65.5	50.1	46.9	35.8	54.5	95	— 4	Apr. 8	Oct. 9
Wheeling	34.2	34.5	36.4	60.4	70.9	72.4	75.0	74.4	66.5	51.6	49.5	37.2	55.3	96	1	Apr. 8	Oct. 25
White Sulphur Springs	30.6	33.9	37.8	56.8	66.4	68.0	71.6	71.5	64.2	50.0	47.6	33.8	52.7	95	— 3	Apr. 9	Oct. 6
Wisconsin.																	
Amherst	16.4	19.5	24.2	46.6	63.8	66.1	69.6	67.6	53.4	43.0	25.4	22.6	43.2	94	—17	Apr. 10	Sept. 22
Antigo	15.4	16.8	22.4	45.6	60.2	64.9	65.9	63.7	51.3	39.0	24.6	.....	.....	93	.....	Apr. 22	Aug. 24
Apollonia (*a*)	16.4	19.8	24.6	46.4	65.3	70.0	72.1	71.0	57.7	45.5	24.3	21.3	44.5	98	—25	Apr. 22	Sept. 2
Bayfield	15.4	18.7	21.6	43.0	53.2	63.0	68.6	71.6	57.8	44.2	18.0	23.8	41.6	96	—16	Apr. 18	Sept. 28
Beloit	24.2	24.4	28.4	54.6	66.8	69.1	72.4	71.8	59.4	46.1	34.8	.....	.....	94	.....	Apr. 7	Sept. 20
Boscobel	20.6	24.0	28.6	52.8	65.0	68.0	70.8	69.6	56.8	46.6	31.7	28.8	46.9	96	—12	Apr. 7	Sept. 20
Butternut	13.4	15.3	20.6	42.4	61.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 1	.....
Centralia	18.6	19.4	24.6	48.0	64.0	68.2	70.6	69.8	55.8	44.7	27.8	25.3	44.7	98	—20	Apr. 10	Sept. 20
Chilton	19.6	21.5	28.1	49.8	63.0	70.0	.....	.....	56.4	44.9	32.4	25.2	.....	.....	—16	Apr. 21	Sept. 22
Citypoint	.....	.....	.....	51.2	63.4	69.0	69.2	67.2	52.7	.....	.....	.....	.....	96	.....	Apr. 10	Sept. 18
Crandon	*8.8	13.9	19.9	43.2	63.4	.....	.....	.....	53.2	40.1	24.2	20.4	.....	.....	—30	Apr. 10	Sept. 2
Delavan	23.2	22.2	37.7	52.2	.....	67.4	72.0	70.4	58.3	45.4	33.6	28.3	.....	96	—15	Apr. 22	Sept. 22
Depere	18.4	20.2	25.2	48.1	62.8	66.6	69.8	69.7	56.0	.....	.....	.....	.....	94	.....	Apr. 7	Sept. 27
Dodgeville	.....	.....	.....	.....	.....	.....	.....	67.6	54.4	.....	.....	25.8	.....	.....	.....	.....	Sept. 19
Easton	.....	.....	.....	.....	.....	.....	70.4	70.1	55.4	42.8	27.6	23.6	.....	.....	.....	.....	Sept. 23
Eau Claire	13.4	17.8	25.2	47.0	56.7	71.3	70.1	69.7	56.9	44.6	28.4	24.4	43.8	98	—24	Apr. 9	Sept. 20
Florence	15.0	14.7	18.8	41.6	56.9	62.6	66.0	64.2	52.0	40.1	26.8	21.1	40.0	91	—26	May 20	Aug. 19
Fond du Lac	19.2	20.8	25.0	48.7	64.0	66.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 10	.....
Grantsburg	14.9	12.5	21.2	38.6	60.0	67.6	68.4	64.4	52.0	.....	23.8	20.0	.....	98	—24	Apr. 23	Sept. 27
Gratiot	.....	.....	.....	.....	.....	.....	.....	71.8	58.1	45.8	31.7	28.4	.....	.....	.....	.....	Sept. 19
*Greenbay	19.0	21.2	25.2	47.7	62.9	67.4	69.7	69.9	56.4	45.1	29.4	25.8	45.0	95	—15	Apr. 22	Oct. 7
Harvey	22.2	24.4	28.6	52.1	65.8	67.7	71.6	70.7	57.0	45.3	33.0	27.6	47.2	96	—13	Apr. 22	Sept. 20
Hayward	10.5	14.3	19.0	44.0	60.3	.....	*67.2	65.6	52.8	41.2	19.9	*16.6	.....	.....	—39	Apr. 22	Aug. 24
Hillsboro	19.2	21.8	25.8	49.4	63.1	66.0	68.9	68.0	54.6	42.2	28.7	25.6	44.4	98	—13	Apr. 22	Sept. 22
Koepenick (*a*)	14.6	14.1	18.4	48.9	60.6	67.9	65.8	63.7	55.2	42.0	25.9	22.2	41.6	90	—26	Apr. 22	Sept. 20
*La Crosse	19.6	23.4	27.0	50.8	65.8	69.2	71.3	70.2	55.5	46.0	27.4	26.6	46.1	99	—16	Apr. 22	Oct. 7
Lancaster	19.2	21.8	27.0	51.5	65.3	67.8	71.6	70.6	55.9	44.8	28.8	27.1	47.0	97	—14	Apr. 7	Sept. 20
Lincoln (*b*)	23.8	23.8	27.6	48.0	63.0	69.0	73.2	70.8	58.1	46.2	30.4	27.8	46.8	.....	.....	.....	.....
Madison	21.6	22.7	27.2	51.8	65.4	68.8	72.1	71.0	57.6	46.2	31.8	27.1	46.9	92	—13	Apr. 7	Sept. 20
Manitowoc	22.4	23.2	27.0	44.8	57.8	64.0	68.0	69.2	55.3	44.2	32.0	27.8	44.6	94	—13	Apr. 7	Oct. 17
Meadow Valley	17.2	19.8	25.4	49.1	63.6	66.6	67.8	67.8	54.6	43.8	26.4	23.4	43.8	96	—19	Apr. 22	Sept. 20
Medford	14.1	16.4	25.1	44.8	61.4	66.3	68.7	68.0	54.0	40.8	22.6	21.0	41.9	100	—31	Apr. 22	Sept. 20
*Milwaukee	24.6	24.8	28.7	48.0	62.1	65.4	70.6	71.6	58.2	46.8	35.8	30.4	47.2	98	—12	Apr. 8	Oct. 18
Neilleville	15.4	17.8	24.1	47.4	63.2	66.0	68.2	68.4	54.0	42.8	25.8	22.9	43.0	96	—25	Apr. 22	Sept. 20
New Holstein	16.3	22.2	26.2	.....	63.4	66.2	69.4	70.0	56.7	.....	33.5	23.2	.....	97	—19	.....	Sept. 20
New London	.....	.....	23.9	47.9	63.4	66.4	69.0	68.5	55.6	44.3	27.6	24.8	.....	91	.....	Apr. 22	Sept. 27
Oconomowoc	22.7	23.0	26.8	52.2	65.4	67.7	71.4	70.1	*58.2	.....	.....	.....	.....	95	.....	Apr. 22	Sept. 27
Oconto	20.2	22.4	26.0	46.4	61.0	65.6	69.0	69.1	55.6	44.0	30.4	25.8	44.6	95	—14	Apr. 2	Sept. 20
Osceola	12.9	17.6	24.2	44.9	63.0	66.2	69.5	67.5	56.0	44.2	19.5	20.3	42.2	102	—23	Apr. 10	Sept. 20
Oshkosh	21.6	21.0	26.7	48.8	64.6	66.4	.....	71.4	57.1	45.0	28.6	26.0	.....	.....	—17	Apr. 7	Sept. 20
Pepin	15.6	20.6	25.2	48.3	62.8	67.4	69.6	*66.1	55.6	43.0	21.8	23.0	43.3	99	—27	Apr. 7	Sept. 20
Pine River	20.5	21.2	25.6	.....	64.6	67.3	69.8	70.8	56.6	45.0	28.8	24.5	.....	95	—17	Apr. 21	Sept. 20
Portage	.....	.....	27.5	51.2	65.3	69.0	71.1	69.4	56.0	44.9	29.0	25.2	.....	97	.....	Apr. 7	Sept. 20
Port Washington	25.2	25.4	29.8	46.2	59.8	65.8	69.7	68.7	57.0	46.0	34.8	30.0	46.5	100	—15	Apr. 6	Sept. 19
Prairie du Chien	20.7	22.9	27.2	51.4	63.3	66.8	70.2	69.6	54.6	.....	33.7	31.1	.....	102	—19	Apr. 8	Sept. 20
Racine (*h*)	25.0	24.0	.....	.....	62.1	66.3	71.2	72.2	59.8	47.5	36.7	30.8	.....	97	.....	.....	Oct. 7
Royalton	18.2	20.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sharon	23.0	21.8	26.8	51.7	64.0	66.3	70.2	68.8	56.1	43.2	.....	27.4	.....	97	—16	Apr. 7	Sept. 19
Shawano	19.6	20.8	24.5	46.1	61.2	65.6	68.2	67.8	54.0	42.8	28.8	25.8	43.8	93	—17	Apr. 22	Sept. 22
Spooner	11.4	14.0	21.4	42.8	59.8	64.7	67.4	67.5	51.8	.....	23.8	17.4	.....	99	—32	Apr. 22	Aug. 18
Stevens Point	17.6	19.8	25.3	48.8	63 7	67.5	68.5	69.0	55.6	43.8	27.1	23.0	44.1	97	—19	Apr. 22	Sept. 20
Sturgeon Bay Canal (*h*)	21.8	20.1	.....	.....	.....	63.4	65.4	65.8	54.4	43.5	31.8	26.6	.....	92	.....	.....	.....
Valley Junction	18.6	22.2	26.4	49.2	63.4	65.9	67.8	67.2	54.6	43.5	27.4	24.0	44.2	97	—19	Apr. 22	Sept. 20
Viroqua	19.6	22.2	26.6	50.2	63.6	67.7	70.3	69.2	56.3	45.6	28.4	26.1	45.5	97	—17	Apr. 22	Sept. 20
Watertown	23.0	22.8	27.6	50.9	65.7	68.4	72.3	70.7	57.3	45.0	32.3	27.0	46.9	95	—16	Apr. 8	Sept. 20
Waukesha	23.6	23.5	28.2	49.8	64.2	67.3	71.2	69.8	58.2	46.0	33.1	28.5	46.9	97	—11	Apr. 7	Sept. 24
Waupaca	.....	20.4	.....	45.6	64.1	68.4	71.0	70.0	56.6	43.6	28.0	23.2	.....	96	—21	Apr. 22	Sept. 23
Wausau	15.7	18.0	23.2	46.8	62.9	67.2	68.7	67.4	54.1	42.0	25.6	21.8	42.8	94	—20	Apr. 22	Sept. 22
Westbend	21.6	22.4	26.4	49.7	63.5	66.5	69.6	69.8	55.8	43.1	33.6	29.2	45.9	98	—12	Apr. 7	Sept. 28
Westfield	19.2	20.4	26.4	49.4	64.9	68.2	70.4	69.8	56.5	43.8	28.3	25.2	45.2	94	—17	Apr. 7	Sept. 20
Whitehall	15.4	19.2	25.9	48.4	62.7	65.5	.....	.....	.....	.....	.....	25.0	.....	.....	.....	Apr. 22	.....
Wyoming.																	
Bighorn Ranch	26.4	29.8	25.2	34.8	41.8	58.2	61.6	58.4	47.6	41.8	21.5	33.4	40.0	84	—27	June 25	Sept. 10
*Cheyenne	32.2	30.6	29.4	41.6	51.8	62.8	66.6	66.2	55.0	46.0	30.0	36.4	45.7	90	—12	May 16	Sept. 26
Embar	.....	26.3	23.3	31.8	39 6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fort Laramie	30.0	29.0	30.4	46.4	57.7	67.0	*74.9	72.1	*62.6	46.9	27.8	35.0	48.3	101	—20	June 15	Sept. 27
Fort Washakie	26.0	29.2	28.8	39.1	47.6	61.8	66.9	64.6	54.0	44.0	25.1	28.0	42.9	96	—30	.....	Sept. 27
Fort Yellowstone	25.6	25.2	24.9	34.2	.....	56.3	62.4	60.4	49.2	41.5	18.4	27.6	.....	.....	.....	June 25	Sept. 25
*Lander	24.6	29.2	28.4	39.4	48.9	63.2	68.0	64.8	53.8	43.5	25.0	27.4	43.0	95	—31	May 15	Sept. 26
Laramie	27.6	22.7	26.2	37.4	47.2	58.9	62.3	62.0	52.4	41.9	27.2	31.4	41.4	84	—21	June 15	Sept. 27
Lusk	25.0	28.5	26.5	42.4	54.4	66.0	70.7	69.2	54.0	43.1	22.0	33.4	44.6	102	—24	May 20	Sept. 18
Sheridan	18.0	30.2	27.6	41.8	49.4	63.8	68.2	65.4	53.4	44.6	19.6	31.4	43.0	98	—25	June 14	.....
Sundance	23.0	26.0	24.3	40.0	51.8	62.6	67.2	66.6	51.9	43.0	18.1	31.0	42.1	95	—22	June 15	Sept. 19
Wheatland	35.9	36.6	31.9	45.2	59.2	.....	70.9	69.0	59.0	50.8	28.6	32.8	.....	.....	—15	June 15	.....

PART V.

MONTHLY AND ANNUAL PRECIPITATION, 1896—ALL STATIONS.

The precipitation values given in the following tables have been taken largely from the records of voluntary (unpaid) observers. The paid stations of the Weather Bureau are indicated by an asterisk (*). Probably two-thirds of the voluntary observers have standard rain gauges, the remainder having gauges similar in pattern to the standard, or, in a few cases, improvised gauges of their own construction.

The bracketed values have been obtained by a comparison of the date for adjacent stations, and are to be considered only as an approximation to the true amount.

When two or more observers reside in the same city the reports of all are given. The discrepancies between the amounts recorded by the separate observers are often considerable; in general, they are due to differences in exposure, although at times one observer may make the last measurement of the month at 6 o'clock a. m., whereas another observer may defer it to 9 p. m., thus causing a difference in the amounts recorded on the last day of the month.

The small Roman letters in the body of the table indicate the number of days missing from the records for the months in which they appear; thus "c" indicates three days missing, "d" four days, etc.

The elevation of each station above sea level, where known, is given in the second column of the table. The altitudes have been compiled from a variety of sources, but the greatest number has been taken from railroad surveys; the altitudes refer therefore to the height of the track at the local station rather than the point at which rainfall or temperature observations are made. It has not been possible to obtain the latter, except in a very few cases.

Blank page retained for pagination

Monthly and Annual Precipitation (in Inches and Hundredths) for 1896.

[Compiled from the reports of observers of all classes.]

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Alabama.	*Feet.*													
Alco	.....	4.65	12.68	6.32	3.09	4.05	8.12	10.02	5.30	0.86	5.95	4.99	2.33	68.36
Ashville	685	4.42	3.78	4.48	4.21	2.35	3.14	2.22	1.20	1.89	1.09	4.78	1.11	34.67
Bermuda	.....	7.36	8.40	5.89	2.46	6.32	6.40	5.60	3.44	0.44	2.98	2.19	2.88	54.36
*Birmingham	608	3.40	4.39	4.41	4.87	3.19	4.29	3.35	2.26	0.68	1.28	3.80	1.07	36.99
Brewton	85	4.40	13.40	5.90	.....	3.20	11.00	9.35	1.85	1.40	5.00	3.40	2.25	.....
Bridgeport	660	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.73	7.84	1.29	.....
Carrollton	.....	4.38	5.90	2.60	6.78	4.88	5.02	4.59	4.82	2.31	1.94	.....	2.47	.....
Citronelle	352	3.48	6.05	5.08	2.63	2.78	6.17	4.45	5.27	3.27	5.11	4.34	2.47	51.10
*Claiborne	.....	.....	6.67	3.37	2.40	2.80	.....	.....	.....	.....	.....	.....	.....	.....
Clanton	590	6.42	4.53	6.11	4.92	5.87	6.67	4.01	1.60	0.62	1.76	3.22	2.32	48.05
Collirene	.....	7.30	6.45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Cordova	.....	3.30	5.49	4.00	4.53	5.09	3.21	3.92	3.56	1.92	1.64	3.82	1.39	41.87
Daphne	.....	1.77	4.95	10.05	1.80	3.95	13.15	9.38	9.22	2.04	5.78	3.62	2.62	68.33
*Decatur	573	1.82	6.74	4.81	4.20	4.09	3.07	2.26	1.30	3.94	1.06	7.60	1.69	42.58
*Demopolis	.....	4.59	4.78	5.91	7.10	4.89	6.43	1.95	0.60	2.42	2.02	3.67	0.70	47.06
Elba	204	3.44	8.38	5.24	.....	2.35	5.09	7.18	1.59	1.93	2.19	7.67	1.85	.....
*Eufaula[1]	200	3.47	5.62	3.99	2.32	3.08	3.71	10.25	1.86	1.99	2.68	3.96	3.38	46.31
*Eufaula[2]	200	3.34	5.54	4.27	2.42	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Evergreen	.....	4.67	8.24	5.86	3.21	3.96	8.49	8.85	3.41	1.41	3.40	2.84	3.01	57.35
*Florence[2]	563	2.04	8.75	5.48	3.80	3.06	4.08	2.70	3.49	1.78	2.08	5.75	1.42	44.43
Florence[3]	563	2.28	8.20	6.51	4.16	2.98	4.17	3.78	2.65	1.78	1.83	6.27	1.45	46.06
*Fort Deposit	520	3.94	7.10	5.06	2.49	4.38	3.92	5.75	2.16	0.17	3.33	2.69	0.80	41.79
*Gadsden	621	5.00	4.80	3.90	2.68	4.26	3.01	.....	.....	.....	.....	4.31	0.57	.....
*Goodwater	826	5.93	4.36	6.39	2.83	3.89	3.36	4.57	0.69	3.05	1.05	3.14	0.50	39.76
Greensboro	220	4.44	4.66	4.36	5.64	3.07	6.15	2.39	2.35	0.35	2.55	2.92	0.98	39.86
Hamilton	.....	.....	.....	.....	3.05	4.44	4.01	3.28	0.28	1.71	4.37	.....	0.81	.....
Healing Springs	.....	8.71	6.52	5.08	2.65	6.13	8.06	4.21	2.42	1.79	2.32	2.09	4.77	54.75
Highland Home	.....	3.63	5.79	4.91	[a]3.93	2.70	4.11	6.73	0.84	0.50	3.21	5.32	2.00	43.67
Jasper	310	2.81	4.70	4.80	.....	.....	.....	3.69	[b]3.80	.....	.....	.....	.....	.....
*Livingston	100	3.84	4.00	5.86	5.88	1.25	4.14	2.69	1.30	1.25	.....	4.42	0.35	.....
Lock No. 4	510	4.50	4.80	4.25	2.44	3.25	4.77	5.85	1.90	1.04	1.71	2.61	0.87	37.99
Madison Station	573	1.86	6.85	4.64	4.51	3.93	4.48	3.41	0.59	3.71	1.29	3.84	1.29	40.40
Maple Grove	.....	5.55	.....	.....	3.07	.....	.....	[c]3.72	.....	.....	.....	.....	.....	.....
*Marion	263	4.60	5.50	4.20	4.20	2.87	5.59	5.26	3.24	0.92	2.00	3.15	2.00	43.53
*Mobile	57	4.16	7.70	7.59	2.20	1.96	7.18	12.30	4.05	2.52	4.31	2.86	3.56	60.39
*Montgomery	221	6.10	6.03	4.58	4.17	3.12	6.10	6.46	2.31	1.16	1.02	2.64	2.13	45.82
Mount Willing	.....	5.45	6.65	5.83	3.57	1.82	4.52	5.65	2.55	0.74	4.34	3.46	1.95	46.53
Newbern	.....	4.14	5.17	4.52	6.80	3.41	6.10	2.07	1.06	0.63	2.18	3.80	1.40	41.28
Newburg	.....	2.61	10.80	5.90	.....	2.44	2.90	3.26	[a]3.21	2.83	.....	[a]6.85	0.60	.....
Newton	.....	6.39	5.58	.....	2.00	1.30	3.04	12.57	2.29	3.80	2.51	7.04	2.96	.....
Oneonto	.....	[a]1.84	.....	6.89	3.13	4.57	4.42	9.53	[f]2.81	1.09	[f]0.82	.....	.....	.....
*Opelika	817	6.53	3.87	2.48	1.29	1.63	1.94	5.54	1.39	1.94	1.02	5.10	1.30	34.03
Oxanna	650	4.13	3.76	3.50	2.64	2.72	4.10	4.25	0.98	2.49	1.53	3.80	0.66	34.56
*Pineapple	.....	3.40	2.93	3.85	3.16	2.77	5.53	4.47	2.98	0.00	2.66	0.54	2.15	34.44
Pushmataha	.....	4.67	6.66	5.44	11.30	3.02	8.34	1.20	1.86	1.84	3.19	3.17	1.50	52.19
Rock Mills	.....	.....	.....	.....	.....	.....	4.30	7.58	0.70	3.95	0.90	3.54	2.20	.....
Scottsboro	652	3.48	3.41	.....	5.72	4.16	2.26	4.89	0.40	3.19	0.96	[d]6.10	1.30	.....
*Selma	147	6.51	5.01	6.26	3.63	1.28	5.06	3.90	2.10	0.42	1.28	1.02	2.14	38.61
*Sturdevant	497	.....	2.36	4.23	1.24	3.13	.....	.....	.....	.....	.....	.....	.....	.....
*Tallassee	.....	.....	6.40	5.55	2.72	[a]4.39	.....	.....	.....	.....	.....	.....	1.30	.....
*Thomasville	.....	.....	.....	.....	.....	4.55	3.57	3.62	4.28	0.40	.....	.....	.....	.....
*Tuscaloosa	230	4.11	4.11	5.19	4.74	3.52	6.99	4.00	1.20	0.62	1.73	2.77	1.11	40.09
*Tuscumbia	488	2.11	7.34	5.86	3.78	3.00	4.80	2.78	1.81	1.76	.....	.....	.....	.....
Union	.....	4.00	4.31	5.43	5.19	1.18	8.49	3.03	0.66	0.76	1.76	3.56	0.37	38.74
*Union Springs	216	5.33	7.76	6.26	2.41	4.98	8.43	9.01	2.83	1.10	2.99	6.26	2.95	60.31
Uniontown	273	5.73	5.26	5.07	5.62	2.95	10.19	1.05	2.50	0.83	1.95	2.09	1.87	45.11
Valleyhead	1,031	3.95	5.18	5.81	2.91	4.75	2.68	6.12	2.06	1.95	1.25	6.09	0.77	43.52
*Warrior	450	4.93	5.93	5.59	2.44	3.24	.....	.....	.....	.....	.....	.....	1.40	.....
*Wetumpka	205	6.49	5.46	5.54	3.33	4.26	6.74	5.69	4.51	1.62	1.13	3.02	1.78	49.57
*Wilsonville	452	.....	4.22	3.81	2.85	2.45	5.26	1.18	2.78	2.32	1.10	3.63	1.36	.....
Alaska.														
Coal Harbor	.....	1.01	6.08	4.80	1.22	2.74	2.15	3.93	6.79	11.51	5.13	2.59	3.78	51.73
Holy Cross Mission	.....	0.01	1.07	1.34	1.67	0.20	1.93	2.63	3.90	1.74	.....	.....	.....	.....
Juneau	.....	.....	.....	.....	.....	.....	.....	.....	.....	14.08	9.70	0.58	10.59	.....
Killisnoo	.....	7.50	8.25	2.30	0.65	0.80	3.25	2.05	3.40	8.95	10.55	1.30	8.25	57.25
Nulato	.....	T.	1.05	2.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Point Hope	.....	0.05	0.04	0.57	0.49	0.00	0.83	1.49	.....	.....	.....	.....	.....	.....
Arizona.														
Antelope Valley	.....	.....	0.00	1.00	0.00	0.00	.....	4.32	.....	.....	.....	.....	.....	.....
Arizona Canal Company dam	.....	.....	.....	.....	0.00	0.00	0.00	3.24	2.13	.....	.....	.....	.....	.....
Benson	3,523	0.10	0.00	0.12	0.00	0.00	0.00	2.55	0.60	4.45	8.80	0.16	0.00	16.78

[1] Cotton region observer. [2] River observer. [3] Richard Smith.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Arizona—Continued.	*Feet.*													
Bisbee		0.55	1.04	0.27	0.23	0.00	0.45	4.29	3.10	2.35	7.82	0.40	0.36	20.86
Buckeye		0.60	0.00	0.30	0.00	0.00	0.00	4.10	0.60	1.00	2.00	0.60	0.30	9.50
Calabasas	3,445	0.60	0.37	0.00	0.00	0.00	0.85	5.92	2.57	3.89	2.53	0.53		
Casa Grande	1,396	0.65	0.00	0.10	0.00	0.00	0.00		0.88	1.15	1.85	0.00	0.70	
Dragoon		0.35	1.19	0.00	0.10	0.00	0.71	2.70	0.75	4.33	5.10	0.80	0.00	16.03
Dragoon Summit		0.39	0.02	0.49	0.09	0.00	0.49	2.04	0.87	3.11	4.45	0.40	0.05	12.40
Dudleyville		0.51	0.32	0.65	0.04	T.	0.03	2.40	2.66	2.03	5.95	0.39	0.47	15.45
Eagle Pass	800	0.46	0.13	0.57	0.24	0.00	0.42	3.76	3.21	1.77	2.27	0.82	0.57	14.22
Farley's Camp		0.97	0.00	0.09	0.00	0.00	0.00	2.89	2.60	1.15	3.15	2.60	1.00	14.45
Fort Apache		0.16	0.33	0.86	0.34	0.00	0.52	4.31	4.36	1.34	2.42	0.77	0.68	16.09
Fort Grant		0.29	0.50	0.34	0.00	0.00	0.90	1.88	2.68	2.91	4.89	0.46	0.24	15.09
Fort Huachuca		0.33	0.18	0.55	0.04	0.00	1.81	3.73	6.05	3.70	3.86	0.62	0.40	14.27
Fort Mohave				0.17	0.00	T.	0.00	0.15					1.41	
Gilabend	737	1.20	T.	1.10	T.	0.00	0.00	2.45	2.58	1.06	1.42	T.	0.40	10.21
Gisela		0.59	0.20	1.29	[f]0.17		T.							
Glendale			0.00		0.00	0.00	0.00				0.45	0.75	0.63	
Holbrook	5,069	0.15	0.23	0.17	0.17	T.	0.06	2.36	0.63	1.33	1.51	0.02	0.38	7.01
Ingleside			0.10	0.38	0.06	0.00	0.00	2.19	0.07	0.70	0.97	0.58	0.70	
Lochiel						0.20	0.52	6.35	2.93	2.72			0.20	
Maricopa	1,186	0.68	0.00	0.22	0.00	0.00	0.03	1.18	0.27	0.30	0.41	3.60	0.00	6.69
Mesa				0.46	0.03	0.00	0.00	3.40	0.26	0.37	2.17	0.85	0.75	
Mount Huachuca		0.74	0.36	0.46	0.05	T.	0.54	6.77	2.07	2.83	4.82	1.33	0.42	20.39
Natural Bridge		0.52	T.	1.00	0.42	0.00	0.00	2.32	4.40	1.75	4.20	2.70	0.62	17.93
Oracle		1.23	0.27	1.44	0.37	0.00	0.65	2.48	3.95	2.39	4.78	0.65	1.41	19.62
Oro		0.31	0.45	0.00	0.00	0.00	1.18	2.26	2.21	1.52	4.30	0.34	0.42	12.99
Oro Blanco		1.11	0.39	0.70	0.05	T.	0.56	5.79	5.82	1.88	0.95	0.56	0.37	18.18
Pantano	3,536	0.70	0.05	0.24	3.00	0.00	0.07	1.33	2.80	1.81	4.20	0.30	0.08	14.58
Parker			[i]0.00	0.50	0.00	[f]T.	0.00	T.	1.02		1.81	0.17	[e]0.52	
Payson					0.40	0.00	0.00	4.22	2.16	2.68	4.62	1.80	1.15	
Peoria		0.85	T.	0.34	0.08	T.	0.00	3.14	1.80	0.50	1.60	1.01	0.73	10.05
Phœnix[1]		0.48	0.00	0.28	0.00	0.00	0.00	3.66	1.05	0.45	1.15	0.95	0.60	8.62
*Phœnix	1,106	0.46	0.05	0.39	0.05	T.	T.	4.25	1.77	1.18	1.02	0.64	0.67	10.48
Pinal Ranch		1.10	0.18	1.05	0.50	T.	0.24	4.04	2.90	3.47	3.42	2.35	1.13	20.38
Reymert		2.00	0.00	0.00	0.00	0.00	0.06	2.67	1.58	1.68	3.16	1.21	0.91	13.27
St. Helena Ranch								6.26	5.10	4.42				
San Carlos	2,456	0.43	0.04	0.50	T.	0.00	T.	3.78	0.88	2.67	4.56	0.67	0.35	13.88
San Simon	3,609	0.00	0.93	0.18	0.00	0.00	0.00	0.57	0.45	0.00	1.96	0.10	0.17	4.36
Showlow		0.50	0.55	0.90	0.42	T.	0.47	1.44	2.11	3.12	4.03	0.60	0.45	14.59
Signal		0.16	0.00	0.80	0.00	T.	0.00	2.36	0.83	0.43	2.80	0.26	1.71	9.35
Sulphur Spring Valley		0.18	0.26	0.17	T.	0.00	0.17	3.07	1.85	4.62	3.59	0.28	0.32	14.51
Texas Hill		0.00	0.00	0.75	0.00	0.00	0.00	1.15	1.20	1.17	0.00	0.00	0.45	4.72
Tucson	2,390	0.53	0.08	0.27	0.12	T.	0.19	3.45	1.25	1.13	3.31	0.30	0.76	11.39
Walnut Grove							0.06	0.13	0.06	0.38	2.83			
Walnut Ranch		0.76	1.05	0.49	0.31	0.00	0.13	6.92	1.54	4.17	5.45	0.29	0.37	21.48
Wells		0.70	T.	0.50	T.	0.00	0.01	3.34						
Whipple Barracks	5,318	0.55	0.20	0.81	0.35	T.	0.14	4.70	2.61	1.24	3.67	0.99	0.97	16.23
Wilgus		0.35	0.65	0.50	0.42	0.00								
Wilcox	4,164	0.27		0.05	0.00	0.00	0.00	1.46	1.77	1.35	3.17	0.30	0.00	
*Yuma	141	0.14	0.00	0.43	T.	T.	0.00	0.41	0.32	0.31	0.10	0.06	0.78	2.55
Arkansas.														
Amity		3.63	4.35	5.75	1.90	3.90	0.80	2.30	4.85	2.54	3.02	2.92	0.82	36.78
*Arkansas City	145	3.69	7.69	6.65	3.10	1.60	2.20	0.90	2.15	1.01	3.50	9.51	0.25	42.25
Bee Branch		4.05	3.30	7.45	5.50	4.35	1.25	[f]2.10	[e]1.95	2.90	[e]3.80	[h]4.85	0.40	41.90
Blanchard Springs		5.76	5.59	4.42	6.45	2.57	2.24	1.34	0.83	3.02	6.67	7.13	0.52	46.54
*Brinkley	226	3.95	3.55	5.64	5.03	3.64	2.87	0.92	2.75	3.49	4.35	6.60	0.83	43.62
*Camden[2]	140	5.39	4.68	5.19	3.54	1.16	2.56	0.80	0.74	3.35	6.82	2.51	0.58	37.32
Camden[3]	140	6.94	3.97	5.34	4.86	1.08	2.57	0.86	0.84	3.49	6.62	2.45	1.48	40.50
Conway	309	5.55	1.44	5.99	2.57	4.14	2.43	0.95	2.08	2.41	3.31	4.93	1.26	37.06
Corning	293	2.78	3.46	6.93	4.27	3.47	1.87	7.50	3.38	4.28	1.86	3.89	1.27	44.98
Dallas	1,100	3.01	3.10	5.69	[h]1.13	[i]4.06	1.99	2.90	[e]1.52	3.97	2.74	4.40	1.15	35.66
*Dardanelle		1.32	2.70	4.85	1.03	3.96	1.90	1.21	1.00	3.18	3.20	3.80	0.73	28.88
Elon		3.45	5.20	6.77	3.25	2.66	2.14	0.00	2.66	2.20	4.30	6.97	0.47	40.07
Fayetteville	1,451	1.64	2.20	2.83	4.29	7.60	2.06	0.77	4.82	3.95	4.76	3.00	0.60	38.52
*Forrest		5.10		7.62	9.36	3.04	2.42	0.78	2.01	3.23	3.42	8.66	0.85	
*Fort Smith	481	1.89	1.88	2.95	0.46	5.99	1.54	0.72	1.31	2.72	3.10	2.81	0.33	25.70
*Fulton	264	3.70	3.00	2.96	1.40	3.87	1.63	1.40	0.50	2.84	3.99	1.26	0.50	27.05
Gaines Landing		2.06	3.15	5.78	2.10	0.87	1.00	1.77	1.16	0.69				
*Helena[2]	182	4.12	5.86	5.75	5.52	3.86	1.57	0.33	1.61	2.31	2.44	6.94	0.28	40.59
*Helena[4]	182	4.12	5.88	5.75	4.86	3.78	1.09	0.34	1.11	3.06	2.06	6.94	0.28	39.68
Hot Springs[5]	700	5.85	3.30	7.17	1.73	2.79	1.65	1.20	1.73	4.40	4.50			
Hot Springs[6]	700	6.12	3.13	5.18	3.62	3.00	0.18	1.63	1.63	3.50	5.24	2.81	1.07	37.11
Hot Springs (near)		6.81	3.81	5.75	3.13	3.25	0.37	1.81	3.51	3.87	4.49	2.88	1.50	41.18
Jonesboro	345			5.27	2.69	3.67	2.90	1.72	1.32	3.45	1.83			
Keesees Ferry	750	2.79	1.87	2.84	3.52	4.02	2.13	4.56	3.42	3.44	3.99	2.34	0.45	34.87
Kirby		5.75	4.35	5.75	1.90	3.90	0.80	2.30	4.85					
Lacrosse		3.63		5.12	2.06	2.65	1.45	1.16	1.20	2.73	3.48	4.74	0.15	
Latour	207			4.96	5.21	3.05	0.91	2.02	2.23					
*Little Rock	302	4.85	2.89	4.30	2.67	1.32	3.32	0.86	1.82	3.85	3.12	3.81	0.51	33.32
Lonoke		4.31	3.44	6.87	6.00	2.43	2.43	2.56	4.12	3.43	2.56	3.11	0.62	41.88
Luna Landing		2.97	2.66	2.72	2.41	0.76	0.86	1.73	1.18	0.99	3.34	7.11	0.15	26.88
Madding		5.56	1.50	5.78	6.00	1.75								
*Malvern	277	6.32	3.76	6.25	5.22	1.99	0.57	1.00	3.16	2.36	5.64	4.29	0.98	41.54
Marvell		6.04	3.40	4.90	4.99	4.25	1.75	2.69	5.75	4.53	1.50	3.80	0.20	43.80
Moore										6.07	3.75	6.70	0.89	
Mossville				5.56	3.56	3.35	2.53	3.40	3.41	4.24	2.40	2.86	1.29	
Mount Nebo	1,750	3.99	3.00	5.85	1.68	4.52	1.11	1.30	0.92	4.37	3.32	3.15	1.78	34.90

[1] Agricultural experiment station.
[2] River observer.
[3] C. L. Newman.
[4] Cotton region observer.
[5] Post hospital.
[6] H. H. Harrison.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Arkansas—Continued.	*Feet.*													
New Gascony	.....	5.87	2.66	4.39	5.66	1.50	1.40	0.20	4.74	4.06	3.33	4.77	0.62	39.20
*Newport[1]	231	4.65	3.09	7.68	4.89	5.24	3.14	2.99	1.29	4.99	2.47	5.03	0.82	46.28
*Newport[2]	231	4.13	2.98	6.63	4.61	5.20	2.92	1.77	1.19	4.80	2.39	.....	.....	.....
Newport[3]	231	4.30	[c]2.94	6.73	4.09	4.85	3.65	2.79	0.65	4.07	2.07	5.17	0.79	42.10
Osceola	.....	4.09	2.56	5.99	4.91	4.84	1.59	2.53	1.68	2.72	1.70	6.45	0.81	39.87
Ozark	377	1.73	2.64	4.29	0.87	4.93	1.12	0.66	1.67	2.11	2.57	2.28	0.90	25.77
Picayune	.....	.....	.....	.....	.....	.....	0.93	1.34	2.01	2.82	3.80	4.45	1.75	.....
*Pinebluff	215	5.66	3.24	4.61	5.39	1.37	1.79	0.48	3.12	4.94	4.09	3.64	0.37	38.70
Pocahontas	.....	2.79	2.84	6.49	6.79	3.18	2.84	1.99	3.42	4.46	2.64	3.42	1.33	42.19
*Prescott	327	.....	.....	2.97	.....	2.82	1.58	2.78	1.43	2.40	4.95	2.31	1.26	.....
Rison	243	6.01	2.99	4.45	4.75	2.80	2.26	.....	4.25	3.60	5.43	2.54	[e]2.00	.....
*Russellville	348	4.23	2.82	7.88	2.17	3.85	2.40	4.76	4.36	3.40	.....	.....	.....	.....
Silver Springs	.....	1.53	2.17	2.06	2.77	7.06	3.88	0.76	2.10	3.41	4.22	2.88	0.38	33.22
Stuttgart	228	4.99	2.70	5.60	4.78	1.70	4.65	1.21	2.43	3.06	3.36	7.70	0.55	42.73
*Texarkana	304	3.60	3.16	2.11	.....	1.78	0.10	0.10	2.42	2.48	4.48	1.46	0.60	.....
*Warren	206	4.44	6.01	7.80	4.78	2.00	2.54	1.25	3.77	3.35	5.28	4.03	2.75	48.00
Washington	377	4.86	4.00	4.12	1.98	2.77	0.32	0.76	0.90	2.67	4.63	1.42	0.77	29.20
Wiggs	.....	5.30	3.85	.....	.....	.....	0.90	0.80	2.71	2.98	3.63	3.04	0.96	.....
Winslow	1,734	1.76	2.15	2.41	1.75	6.55	.....	.....	.....	3.37	7.01	.....	.....	.....
Witts Springs	1,550	[f]1.54	3.20	6.00	2.72	7.70	2.88	0.61	2.13	4.49	3.31	3.69	1.45	39.72
California.														
Adin	.....	3.87	0.65	3.42	3.96	2.94	0.15	0.27	0.00	1.15	0.55	5.36	2.90	25.22
Agnew	30	4.89	0.08	1.34	3.34	0.00	0.00	0.21	0.67	0.27	1.66	3.33	2.50	18.29
Arlington Heights	1,000	1.45	0.00	2.84	0.74	0.22	0.00	0.01	0.02	0.00	1.52	1.45	0.90	9.15
Athlone	210	5.14	0.00	1.51	1.33	0.12	0.00	T.	0.40	T.	0.81	1.78	0.92	12.01
Azusa	1,800	2.77	T.	6.55	0.70	0.36	0.00	0.07	1.10	T.	2.93	1.03	1.61	17.12
Ballast Point light-house	.....	1.35	0.14	2.50	0.15	0.00	0.00	0.00	0.10	0.00	0.59	0.62	2.43	7.88
Barstow	2,150	0.16	0.00	0.08	0.00	0.00	0.00	0.07	0.87	0.00	1.55	0.25	0.30	3.28
Bear Valley	4,600	25.39	1.66	14.47	18.32	10.03	0.00	0.72	0.68	2.13	2.57	18.35	8.02	102.34
Berkeley	320	11.40	0.36	2.93	6.72	0.94	0.00	T.	0.90	0.76	1.91	5.15	4.92	35.99
Bishop	4,450	1.52	0.00	0.93	0.17	0.04	0.05	0.61	0.36	T.	T.	0.04	0.48	4.20
Bishop Creek	4,450	1.07	0.00	0.60	0.05	0.03	0.00	0.57	0.06	0.05	T.	T.	0.16	2.59
Boca	5,531	7.75	0.50	6.30	6.65	3.10	0.25	1.15	0.18	0.35	0.00	2.47	1.80	30.50
Bodie	8,248	5.68	T.	3.28	2.64	0.49	0.53	1.01	1.83	1.00	0.81	0.94	0.86	19.07
Bowmans Dam	5,500	29.85	1.92	14.95	18.45	8.98	0.11	0.09	1.00	2.05	2.83	19.40	10.31	110.44
Caliente	1,290	3.53	0.25	3.30	1.58	0.56	0.00	0.05	0.29	0.00	1.02	1.02	1.93	12.53
Calloway Canal	394	1.92	0.00	1.61	0.30	0.16	0.00	0.09	0.00	0.10	0.64	0.30	0.80	5.92
Cape Mendocino light-house	.....	14.31	3.72	6.88	11.25	8.03	0.55	0.00	0.77	1.00	2.44	6.37	10.28	65.60
Castle Pinckney	550	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.15	2.83	3.05	.....
Cedarville	4,675	3.59	1.13	2.01	1.69	3.51	0.37	0.49	0.59	0.55	1.12	5.76	1.87	22.68
Centerville	87	7.45	0.30	1.66	4.47	1.07	0.00	0.10	0.83	0.57	1.22	6.16	2.91	26.74
Chico	193	10.08	0.21	2.99	5.88	1.60	0.00	0.00	0.41	0.76	0.52	5.52	5.81	33.78
Chino	64	2.24	0.00	4.22	T.	0.00	0.00	0.00	0.00	0.00	1.12	1.71	1.77	11.06
Claremont	1,143	2.49	0.03	4.42	0.40	0.07	T.	T.	0.40	T.	5.02	1.17	1.44	15.44
Cloverdale	.....	23.26	0.77	4.77	6.88	.....	.....	.....	.....	.....	.....	.....	.....	.....
Corning	277	12.40	T.	3.95	3.95	1.30	0.00	0.00	0.42	0.75	0.75	3.08	7.40	34.00
Coronado	10	1.27	0.02	2.89	0.25	0.03	0.01	T.	0.13	T.	0.97	0.98	2.18	8.73
Craftonville	1,759	1.57	0.00	3.61	0.40	1.13	0.00	0.00	0.62	0.00	1.66	1.60	1.49	12.08
Crescent City	50	11.24	7.89	6.24	12.50	8.35	0.44	0.00	1.10	1.17	3.62	15.02	15.14	82.21
Crescent City light-house	.....	12.47	5.75	6.85	15.67	6.71	0.38	0.00	1.09	1.27	1.79	16.25	13.93	82.16
Davisville	51	10.79	0.13	2.22	6.45	0.73	0.00	*0.00	0.47	0.77	1.15	4.16	2.21	29.08
Delano	310	1.25	0.00	0.84	0.28	0.00	0.00	0.25	0.00	0.00	0.73	0.62	0.70	4.67
Delta	1,138	31.42	0.60	11.81	16.72	6.92	0.07	0.00	T.	T.	3.50	12.00	17.23	100.27
Descanso	3,400	2.93	0.10	8.04	1.14	0.17	0.00	0.30	1.38	0.03	2.71	2.12	2.43	21.35
Drytown	790	9.11	0.35	6.36	6.59	2.06	0.00	T.	T.	T.	1.06	6.62	3.34	35.49
Dunnigan	65	15.13	0.11	2.80	5.45	0.79	0.00	0.04	0.37	0.48	1.30	3.65	4.32	34.44
Durham	180	9.92	0.42	2.34	5.70	1.59	0.00	0.05	0.42	0.86	0.45	5.44	5.23	32.42
East Brother light-house	.....	6.15	0.05	2.45	1.85	0.45	0.00	0.03	0.05	0.35	1.95	4.45	3.85	21.63
Edgwood	2,955	6.64	0.30	2.68	4.66	1.35	0.42	0.07	0.77	0.71	0.40	3.45	5.16	26.61
Edmanton	4,750	32.70	1.20	13.33	16.25	7.20	0.00	0.08	0.22	1.43	2.53	16.64	11.13	102.71
*Eureka	64	8.14	4.61	6.93	11.13	6.22	0.51	0.00	0.70	1.60	2.37	8.00	9.41	59.62
Evergreen	450	5.25	0.32	2.70	3.50	0.70	.....	.....	.....	.....	.....	.....	.....	.....
Fall Brook	700	3.45	T.	3.44	0.26	0.13	0.00	0.05	0.05	0.00	2.68	1.22	2.13	13.41
Famosa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.69	0.88	.....
Folsom City	182	9.11	0.41	4.06	6.44	1.57	0.00	0.00	0.64	0.35	0.90	6.55	1.77	31.80
Fordyce Dam	6,500	25.95	1.80	14.05	15.67	6.52	0.33	0.95	0.66	1.84	2.46	16.97	6.43	92.73
Fort Bragg	.....	10.02	2.97	4.64	6.06	5.03	0.00	0.04	0.19	0.47	1.39	7.61	9.53	47.95
Fort Ross	100	24.04	1.38	5.27	6.58	3.64	0.00	0.00	0.20	0.30	3.79	14.65	13.95	73.80
Fort Tejon	3,245	3.07	0.40	4.01	3.33	2.05	0.22	0.26	0.30	0.53	1.63	1.74	4.47	22.01
*Fresno	332	2.89	0.06	1.21	2.82	0.02	0.00	0.07	0.15	0.06	1.28	1.46	1.00	11.02
Georgetown	2,750	19.55	0.77	11.28	16.51	4.81	0.00	0.20	0.10	0.83	1.76	17.18	6.37	79.36
Glendora	.....	4.05	0.00	6.00	0.26	0.00	0.00	0.09	0.00	0.00	2.62	1.46	1.25	15.73
Goshen	286	1.08	0.00	0.26	0.87	0.10	0.00	0.43	0.03	0.00	0.68	1.00	0.35	4.80
Grand Island	65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.34	2.99	.....
Grass Valley	2,090	20.34	0.93	6.94	12.47	4.87	0.13	0.02	0.13	1.53	1.72	13.65	5.78	68.51
Greenville	3,600	16.66	0.53	7.05	11.05	3.53	0.00	0.61	0.23	1.23	0.95	9.48	6.20	57.52
Guinda	.....	13.27	0.00	1.82	4.72	0.90	0.00	0.00	0.19	0.68	1.54	2.85	4.57	30.54
Healdsburg	100	23.01	0.28	4.11	7.10	2.24	0.00	0.00	0.06	0.38	1.58	8.58	9.54	56.90
Hollister	284	6.76	0.07	1.42	2.49	0.47	0.00	0.00	1.10	0.03	1.55	1.91	1.31	17.11
Hueneme	30	5.14	0.00	2.15	0.55	0.00	0.00	0.03	0.12	0.00	0.49	2.09	2.29	12.86
Humboldt light-house	.....	7.83	4.38	6.81	10.96	7.45	0.36	0.00	0.70	1.80	2.52	7.26	10.31	60.38
Hydesville	400	9.99	3.37	4.77	11.26	4.50	0.00	0.00	0.23	0.91	1.35	8.19	8.22	52.69
Indio	[d]20	.....	0.00	0.00	0.00	0.00	0.00	.....	0.00	.....	0.00	0.00	0.00	.....
Iowa Hill	2,825	17.77	0.70	10.93	14.01	4.58	0.00	0.11	0.06	1.00	0.49	13.42	5.13	68.20
Isabella	.....	.....	0.10	1.93	0.89	0.04	0.06	2.57	0.01	0.32	1.17	0.48	0.70	.....
Jackson	1,975	8.79	0.43	5.18	10.89	2.11	0.00	0.04	0.18	0.23	1.35	8.78	4.61	42.59
Jolon	960	8.14	0.03	2.61	3.62	0.09	0.00	0.10	0.08	0.03	0.75	3.20	2.11	20.76

[1] River observer. [2] Cotton-region observer. [3] G. B. Irby. [4] Below sea level.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
California—Continued.	*Feet.*													
Julian	4,500	4.55	0.40	6.10	1.40	0.10	0.00	.....	.....	.....	.....	.....	.....	.....
Keeler	3,622	0.45	0.00	T.	T.	0.15	T.	0.25	1.42	0.50	T.	0.00	0.25	3.02
Keene	2,705	2.82	0.00	2.47	2.82	1.30	0.00	0.15	0.40	0.00	1.72	0.86	1.90	14.44
Kennedy Gold Mine	1,500	11.80	0.80	4.80	11.20	2.27	0.00	0.25	T.	0.29	1.17	10.71	4.55	47.84
Kernville	2,600	3.52	0.00	1.54	0.86	0.00	0.20	2.25	0.05	0.00	1.48	0.41	0.85	11.16
King City	332	4.53	0.00	1.73	1.84	0.04	0.00	0.00	T.	0.00	0.56	1.92	1.46	12.08
Kingsburg	301	2.14	0.00	1.15	1.10	0.05	0.00	0.30	0.06	0.13	2.65	0.67	0.60	8.85
Kono Tayee	1,325	9.42	0.25	2.31	4.62	1.69	.....	T.	0.27	0.29	0.73	3.33	5.93	.....
Lagrange	293	4.72	0.20	2.65	3.25	0.45	T.	0.10	0.33	T.	1.50	3.73	1.94	18.87
Laporte	5,000	32.43	2.84	16.20	16.63	9.32	0.09	0.31	0.25	2.29	3.09	23.87	12.88	120.20
Las Fuentes Ranch	120	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.32	1.68	.....	.....
Lemoore	227	1.85	0.00	1.08	0.47	0.00	0.00	0.10	T.	0.00	0.77	1.40	0.70	6.37
Lick Observatory	4,209	9.54	1.08	3.83	6.70	2.10	0.02	T.	0.28	0.47	1.85	5.86	4.91	36.64
Lime Point light-house	.....	8.13	0.46	3.21	4.14	0.86	0.00	0.01	0.10	0.51	1.83	5.29	4.75	29.34
Lodi	35	9.02	0.21	2.32	2.90	0.82	0.00	T.	0.17	0.04	1.19	3.86	1.87	22.40
Los Alamos	.....	3.89	0.00	3.08	2.24	0.00	0.00	0.17	0.00	0.00	1.50	1.26	2.83	14.91
*Los Angeles	330	3.23	T.	2.97	0.19	0.30	T.	0.02	0.01	T.	1.30	1.66	2.12	11.80
Los Gatos	600	17.39	0.08	3.66	7.25	0.81	0.00	0.00	0.77	0.39	1.95	6.26	6.40	44.96
Malakoff Mine	3,000	24.11	1.36	10.20	17.78	6.61	T.	0.06	0.15	1.90	2.33	17.42	7.02	88.94
Mammoth Tank	257	T.	0.00	0.25	0.00	0.00	0.00	0.00	0.01	T.	T.	T.	0.00	0.26
Manzana	2,850	1.09	0.00	1.70	0.63	T.	0.00	T.	1.04	0.00	0.61	0.30	1.46	6.83
Mare Island light-house	.....	7.91	0.31	2.49	5.45	0.72	0.00	0.02	0.48	0.84	1.61	5.10	3.73	28.66
Merced	64	5.50	0.00	2.10	1.72	0.29	0.00	0.19	0.53	0.00	0.91	1.94	1.04	14.22
Middletown	1,300	25.78	0.06	.....	8.54	2.23	0.00	0.01	0.10	0.48	1.10	7.55	11.21	.....
Mills College	200	11.90	0.40	2.02	5.60	1.14	0.00	0.00	0.95	0.80	1.51	6.07	3.59	33.98
Milton (near)	660	9.30	0.10	2.76	6.24	0.71	0.00	T.	0.01	0.04	1.45	5.01	3.72	29.34
Modesto	90	4.56	0.00	0.90	2.22	0.51	0.00	0.30	T.	0.25	1.08	2.97	1.31	14.10
Mohave	2,751	1.31	0.00	1.45	.....	0.00	0.22	0.12	0.00	0.00	0.70	0.17	0.82	.....
Mokelumne Hill	1,550	9.41	0.66	4.66	10.06	1.78	0.00	T.	0.22	0.10	1.42	8.98	3.84	41.13
Monterey	5	3.24	0.12	2.20	2.17	0.42	0.00	0.00	0.50	0.27	0.65	2.13	2.51	14.21
Morena Dam	3,100	.....	.....	.....	.....	.....	.....	.....	.....	0.09	1.51	1.83	2.42	.....
Mountain Home	6,680	11.41	0.83	5.13	11.01	1.30	1.10	0.65	1.00	.....	.....	.....	.....	.....
Mount Frazier	8,000	2.94	0.00	3.12	2.22	1.03	0.00	0.00	.....	.....	.....	.....	.....	.....
Mount Glenwood	50	24.22	0.10	3.26	7.01	0.70	0.00	0.00	0.50	0.32	1.78	3.95	3.95	45.79
Mount Lowe Observatory	3,500	2.85	0.10	4.10	0.60	0.30	0.00	0.00	0.10	0.00	.....	.....	.....	.....
Mutah Flat	4,850	.....	0.00	4.79	3.50	0.52	0.00	0.30	0.00	0.00	1.75	1.50	.....	.....
Napa	95	9.28	0.25	3.60	6.28	1.10	0.00	T.	0.46	0.50	1.20	5.03	3.41	31.11
Needles	491	0.00	0.00	.....	.....	0.00	0.00	0.00	.....	0.00	.....	T.	1.33	.....
Nevada City	2,580	19.61	0.99	7.59	13.63	4.88	T.	0.05	0.05	1.55	2.18	12.63	6.46	69.42
Newcastle	956	10.08	0.66	4.81	6.92	1.79	0.00	0.04	0.31	1.28	1.07	8.16	2.46	37.58
Newhall	1,268	2.15	0.15	4.04	1.03	0.20	0.00	0.00	0.25	.....	1.55	1.00	2.23	.....
Nordhoff	.....	5.78	0.00	3.42	1.72	0.00	0.00	0.22	T.	0.00	1.38	1.03	3.00	16.55
North San Juan	2,130	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.54	12.80	4.20	.....
Oakland	36	11.03	0.24	2.64	6.88	0.80	0.00	0.00	0.68	0.82	1.72	6.11	4.29	35.21
Ogilby	354	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.....	0.00	1.00	.....
Oleta	1,510	9.94	0.87	5.41	9.55	2.41	0.06	0.00	0.24	0.12	1.06	8.05	4.51	42.22
Orange	.....	2.85	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orangevale	300	10.42	0.20	4.07	6.95	1.77	0.00	0.00	0.39	0.43	0.75	6.29	1.70	32.97
Orland	254	8.54	0.05	4.25	3.03	1.65	0.00	T.	0.37	0.83	1.02	2.69	6.14	28.57
Ormonde	.....	25.53	0.93	7.50	.....	.....	.....	0.00	.....	.....	.....	.....	.....	.....
Oroville	205	11.41	0.38	4.19	7.03	2.08	0.00	0.15	0.23	1.40	0.90	6.30	4.64	38.71
Palermo	185	10.03	0.26	2.31	3.78	0.80	.....	0.03	0.22	1.17	0.54	5.83	3.98	.....
Paso Robles	880	4.64	0.02	3.77	1.25	0.77	T.	T.	1.19	T.	1.66	1.92	2.48	17.70
Peachland	200	17.55	0.40	3.85	6.03	2.26	0.00	0.07	0.08	0.60	2.59	5.53	8.83	47.79
Picacho	220	0.25	0.00	0.75	0.00	T.	0.00	0.10	0.10	T.	T.	0.01	0.05	1.26
Piedras Blancas light-house	.....	7.79	0.03	2.74	2.86	0.33	0.00	0.08	0.05	0.24	1.40	5.37	4.08	24.97
Pigeon Point light-house	.....	7.84	0.24	1.53	4.25	0.95	0.00	0.00	0.02	0.20	0.54	5.16	2.15	22.88
Pilot Creek	4,000	25.47	1.47	13.07	16.67	6.37	T.	0.43	0.42	1.29	1.95	15.74	6.99	89.87
Placerville	1,875	16.38	0.78	11.11	12.00	3.56	0.00	0.03	0.15	0.63	1.51	11.71	.....	.....
Point Ano Nuevo light-house	.....	3.65	0.02	0.95	1.88	0.70	0.00	0.00	0.26	0.20	0.78	4.23	3.30	15.97
Point Arena light-house	.....	11.76	1.70	3.65	5.22	2.56	0.00	0.00	0.00	0.12	1.40	7.07	10.16	43.64
Point Bonita light-house	.....	12.65	0.74	4.43	5.76	1.36	0.00	0.00	0.43	0.49	2.16	6.43	6.56	41.01
Point Conception light-house	.....	6.11	0.00	0.72	1.22	0.03	0.00	0.30	0.00	0.06	0.68	1.82	1.87	12.81
Point Fermin light-house	.....	3.50	0.00	1.90	0.20	0.00	0.00	0.00	0.00	0.00	0.70	3.43	1.61	11.34
Point George light-house	.....	4.54	1.10	3.03	5.03	3.27	0.05	0.00	0.66	0.56	4.62	5.22	3.96	32.04
Point Hueneme light-house	.....	5.56	0.00	2.22	0.64	0.00	0.00	0.00	0.14	0.00	1.20	2.42	2.62	14.80
Point Lobos	250	7.33	0.41	3.45	3.99	0.91	T.	0.02	0.26	0.46	1.58	4.99	4.16	27.56
Point Loma light-house	.....	0.45	0.00	2.00	0.07	0.00	0.00	0.00	0.03	0.00	0.59	0.39	1.68	5.21
Point Montara light-house	.....	10.24	0.30	2.96	6.71	1.32	0.05	0.05	0.43	0.41	1.40	5.46	4.04	33.37
Point Pinos light-house	.....	5.62	0.32	1.92	3.63	0.55	0.00	0.03	0.77	0.23	0.88	3.54	3.52	21.01
*Point Reyes light-house	12	8.30	0.97	3.25	4.20	1.24	0.00	0.00	0.02	0.43	1.76	4.85	5.40	30.42
Point Sur light-house	.....	7.62	0.12	2.32	3.63	0.79	0.00	0.00	0.42	0.00	0.82	4.50	2.61	22.83
Pomona (near)	875	2.42	0.00	4.39	0.15	0.00	0.00	0.09	0.00	0.00	1.45	1.19	1.57	11.26
Portersville	461	1.61	T.	.....	1.13	0.13	.....	.....	.....	.....	.....	.....	.....	.....
Poway	460	2.50	T.	4.73	0.96	0.31	0.00	T.	0.08	0.00	1.51	1.54	2.42	14.05
Quincy	3,350	20.79	0.65	7.96	11.03	4.39	0.00	0.06	0.20	1.43	1.05	11.26	6.36	65.18
Ravenna	2,262	0.80	0.00	2.90	.....	0.00	0.00	0.00	0.42	0.00	1.76	T.	1.17	.....
*Redbluff	334	2.30	0.27	3.06	3.67	2.42	T.	0.00	0.54	0.63	0.66	3.41	6.20	28.16
Redding	565	14.52	0.79	4.17	4.05	8.97	0.35	T.	0.38	0.81	1.99	6.30	8.98	51.31
Reedley (near)	.....	4.10	0.20	1.10	0.85	T.	0.00	T.	0.09	T.	0.98	0.96	1.04	9.32
Represa	300	9.07	0.22	4.46	6.54	1.62	0.00	0.00	0.55	0.35	0.82	5.86	1.80	31.29
Riovista	11	9.01	0.22	1.42	4.51	0.67	0.00	T.	0.21	0.53	1.44	3.12	1.96	23.09
Robertsons Mills	.....	2.15	0.00	2.20	1.50	0.20	.....	0.00	.....	.....	.....	.....	.....	.....
Roe Island light-house	.....	6.80	0.15	2.10	4.70	0.40	0.00	0.00	1.20	0.30	1.35	3.90	2.45	23.35
Roseville (near)	200	.....	0.10	3.55	6.30	1.14	0.00	0.00	0.64	0.52	.....	6.21	1.77	.....
Rosewood	865	13.60	0.30	3.85	4.58	3.15	0.02	0.17	0.16	1.08	.....	3.68	7.46	.....
*Sacramento	71	9.76	0.09	2.57	5.34	0.92	0.00	T.	0.20	0.31	0.55	3.56	1.76	25.06
Sacramento[1]	71	10.46	0.16	3.00	5.73	0.92	0.00	T.	0.19	0.46	0.94	4.20	2.92	28.08

[1] S. H. Gerrish.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
California—Continued.														
	Feet.													
Salinas	44	.....	.....	1.50	.....	0.47	.....	0.00	0.36	0.00	1.20	2.64	1.75	.....
Salton	[1]263	T.	0.00	.....	0.00	0.00	0.00	0.18	0.51	0.00	0.93	0.46	0.62	.....
San Bernardino	1,054	2.02	0.00	2.92	0.37	1.00	0.00	T.	0.17	0.00	2.10	0.98	1.09	10.65
*San Diego	69	1.27	0.02	2.89	0.25	0.03	0.01	T.	0.13	T.	0.97	0.98	2.18	8.73
*San Francisco	153	8.14	0.28	2.85	5.16	0.72	0.00	0.04	0.09	0.52	1.55	4.56	4.34	28.25
San Jacinto	1,500	2.04	0.10	3.70	0.71	0.22	0.00	0.07	T.	0.40	1.76	1.20	1.70	11.90
San Jose	94	5.17	0.27	2.22	2.79	0.44	0.00	0.01	0.74	0.32	1.30	2.82	2.55	18.63
San Leandro	48	9.84	0.25	2.03	5.86	0.91	0.00	0.04	1.34	0.89	1.41	5.78	2.89	31.24
*San Luis Obispo	234	8.23	0.00	3.16	2.22	0.10	T.	0.04	0.20	T.	1.44	3.02	3.04	21.45
San Luis light-house	.....	6.32	0.00	2.57	1.70	0.00	0.00	0.20	0.13	0.00	1.45	3.10	3.18	18.65
San Mateo	22	8.89	0.24	.....	5.00	0.83	0.00	0.00	0.46	0.52	1.31	4.87	2.98	.....
San Miguel	616	3.57	0.00	3.11	1.35	0.24	0.00	0.00	0.68	0.10	0.67	1.49	1.89	13.10
San Miguel Island	500	5.37	0.00	2.25	0.93	0.90	0.00	0.16	0.10	0.21	0.60	2.52	1.36	14.40
San Rafael	.....	20.07	0.11	4.78	10.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Santa Ana	137	3.43	0.00	2.90	.....	0.00	0.00	0.00	0.00	0.00	1.38	1.45	2.27	.....
Santa Barbara	100	6.84	0.00	2.37	1.78	0.08	0.05	0.40	0.00	0.00	0.92	3.51	2.92	18.87
Santa Barbara light-house	.....	6.49	0.00	2.12	1.62	0.18	0.00	0.36	0.00	0.00	0.74	2.55	2.52	16.58
Santa Clara	83	6.02	0.20	2.08	2.72	0.32	0.00	0.00	0.69	0.19	1.47	3.13	2.69	19.51
Santa Cruz	25	8.52	0.25	3.69	3.07	1.66	T.	0.05	0.73	0.35	1.88	6.79	4.87	31.86
Santa Cruz light-house	.....	7.91	0.30	3.09	2.87	0.90	0.00	0.00	0.74	0.30	2.00	6.24	4.77	29.12
Santa Maria	229	4.60	0.00	2.59	1.77	0.03	0.00	0.11	0.03	0.02	0.60	1.82	2.34	13.91
Santa Monica	92	3.75	0.00	2.71	0.23	0.00	0.00	0.00	0.31	.....	0.73	2.28	2.01	.....
Santa Paula	286	5.66	0.00	3.18	1.00	0.00	0.00	0.00	0.10	0.00	0.97	1.43	3.13	15.47
Santa Rosa	181	10.57	0.69	3.53	4.70	1.45	0.00	0.00	0.00	0.46	1.50	5.09	6.42	34.41
Saticoy	145	5.53	0.00	3.08	0.68	0.00	0.00	0.17	0.00	0.00	0.97	1.68	2.25	14.36
Shasta	.....	27.67	0.69	6.93	12.27	9.17	0.27	T.	0.43	1.06	3.92	10.17	13.10	85.68
Shasta Springs	2,510	13.25	1.00	6.20	9.47	6.45	0.35	0.10	0.50	.....	.....	.....	.....	.....
Sierra Madre	1,206	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.28	1.48	1.91	.....
Sneddens Ranch	4,900	.....	0.00	5.02	3.79	0.57	0.00	0.25	T.	.....	1.10	1.35	2.40	.....
S. E. Farralone light-house	.....	7.17	0.25	3.00	3.69	0.80	0.00	0.00	0.25	0.30	1.44	3.36	4.19	24.45
Stanford University	.....	6.96	T.	2.13	4.86	0.40	0.00	T.	1.10	0.30	0.20	2.74	1.57	20.26
Stockton	23	6.09	0.19	1.76	2.65	0.96	0.00	T.	0.19	T.	1.11	2.30	1.12	16.37
Summerdale	.....	21.56	0.40	6.39	9.21	1.45	0.00	0.38	1.38	1.28	2.53	9.66	4.56	58.80
Susanville	4,195	6.94	0.05	3.23	5.10	2.22	T.	0.20	0.20	1.33	0.50	3.88	2.96	26.60
Sutter Creek	1,355	7.28	0.45	4.43	7.04	2.68	0.00	T.	T.	.....	0.64	6.00	2.84	.....
Tecarte Dam	1,600	2.04	0.16	4.41	1.04	0.15	0.00	0.00	0.32	.....	1.41	2.27	2.11	.....
Tehama	220	11.15	0.10	2.35	3.90	1.23	0.02	0.00	0.47	0.58	0.65	2.90	4.33	27.68
Tejon Ranch	1,450	1.90	0.37	4.22	1.62	0.48	.....	0.00	.....	.....	.....	2.12	.....	.....
Templeton	773	4.99	0.00	4.35	2.58	0.54	0.00	0.00	0.80	0.00	1.00	1.73	2.82	18.81
Trinidad light-house	.....	8.46	3.17	7.72	11.52	5.72	0.43	0.00	1.36	1.60	2.20	6.87	8.59	57.64
Truckee	5,819	7.07	0.40	4.67	9.36	0.54	0.00	0.15	0.34	0.32	0.40	3.86	2.50	29.61
Tulare[2]	274	2.19	0.04	0.83	1.13	0.15	0.00	0.20	0.03	T.	0.92	1.28	0.43	7.20
Tulare[3]	274	1.78	0.01	0.72	1.03	0.14	0.00	0.14	0.06	0.03	0.74	1.11	0.46	7.22
Turlock	106	3.96	0.08	1.42	2.40	0.72	0.00	0.06	T	T.	1.68	1.92	1.41	13.65
Ukiah	620	16.68	1.50	3.95	5.97	2.94	T.	0.02	0.04	0.37	1.14	7.00	10.60	50.21
Upperlake	1,300	11.18	0.80	2.39	6.01	2.07	0.00	T.	0.87	0.42	1.04	5.07	6.47	36.32
Upper Mattole	240	26.22	3.59	8.03	17.02	9.91	0.50	0.00	0.65	0.74	3.93	13.44	18.49	102.52
Vacaville	175	14.46	0.15	4.31	7.03	1.25	0.00	T.	0.57	0.40	1.30	6.23	3.54	39.24
Ventura	50	5.13	T.	2.16	1.10	T.	T.	0.20	T.	0.00	0.85	1.50	2.58	13.52
Volcano Springs	[1]220	0.00	0.00	0.00	0.00	0.00	0.00	0.00	T.	0.00	0.00	0.00	.....	.....
Walnutcreek	75	11.05	0.30	2.65	4.65	0.33	0.00	0.00	1.05	0.40	0.22	3.43	4.01	28.09
Washington	.....	24.12	0.24	7.90	9.99	6.68	.....	0.01	[4]0.38	.....	.....	.....	.....	.....
West Palmdale	3,399	.....	.....	.....	.....	.....	.....	.....	1.35	0.32	1.42	0.43	0.98	.....
Westpoint	.....	12.90	0.52	4.55	13.04	2.20	0.00	T.	0.34	0.35	1.52	9.30	4.94	49.66
Wheatland	84	8.54	0.29	2.37	6.21	1.18	T.	0.00	0.28	1.12	1.18	4.91	2.40	28.48
Williams	89	7.47	0.18	1.65	2.90	0.36	0.00	T.	1.10	0.70	0.55	2.14	4.10	21.15
Willows	182	9.96	0.10	2.06	3.22	0.88	0.00	0.00	0.62	0.75	0.85	2.55	5.19	26.18
Wilmington	9	.....	0.00	.....	.....	0.00	0.00	0.00	0.00	0.00	.....	.....	.....	.....
Wire Bridge	500	11.40	0.58	6.38	8.00	2.46	0.00	0.30	0.18	0.91	1.04	8.75	3.04	43.04
Yerba Buena light-house	.....	8.78	0.10	2.00	4.21	0.77	0.00	0.00	0.02	0.34	1.30	3.60	2.74	23.86
Yreka	2,635	7.37	1.08	1.89	2.28	2.75	0.81	0.73	1.01	0.52	0.89	5.02	3.70	28.05
Yuba City	70	10.07	0.32	2.21	5.69	0.90	T.	T.	0.30	0.97	0.76	5.43	2.71	29.36
Engineers Quarters[4]	5,150	2.38	T.	4.21	1.72	0.47	0.00	0.00	0.10	0.00	2.30	1.38	1.98	14.54
Morses House[4]	5,350	5.95	0.08	7.90	2.63	0.89	0.00	0.00	0.46	0.00	3.83	1.96	2.73	26.43
Grass Valley[4]	5,050	4.19	T.	4.92	2.07	0.54	0.00	0.00	.....	0.00	.....	.....	.....	.....
Deep Creek[4]	5,200	1.86	0.05	3.52	1.75	0.28	0.00	0.00	0.78	0.00	2.28	1.65	2.41	14.58
Holcomb Creek[4]	5,220	1.56	T.	3.24	1.02	0.25	0.00	0.00	0.47	0.00	1.70	1.05	1.82	11.11
Squirrel Inn[4]	5,300	4.51	0.00	5.60	0.98	0.89	0.00	0.00	0.38	0.00	3.20	1.60	2.23	19.39
Green Valley[4]	6,900	2.92	T.	6.57	2.17	0.05	0.00	0.00	.....	0.00	.....	.....	.....	.....
Tunnel No. 2[4]	4,900	1.17	0.00	3.24	0.69	0.22	0.00	0.00	.....	0.00	.....	.....	.....	.....
Colorado.														
Alma	10,228	0.51	0.37	3.30	0.74	0.45	0.01	2.89	1.67	2.19	1.13	0.77	0.16	14.19
Antlers	5,350	0.60	.....	.....	.....	.....	[5]0.00	1.69	0.32	4.09	0.68	0.93	0.36	.....
Arkins	.....	0.62	0.28	1.50	1.22	1.66	1.83	2.58	1.44	2.60	0.68	0.08	0.43	14.92
Boxelder	.....	0.53	0.06	3.24	1.10	2.53	2.16	1.93	3.05	2.86	0.02	0.27	0.08	17.83
Breckenridge	9,524	1.88	1.89	4.83	0.60	1.47	0.30	3.10	2.29	2.25	0.82	3.87	0.73	24.03
Canyon	5,363	0.14	0.26	1.14	0.63	1.06	0.23	2.95	2.91	1.62	0.55	0.44	0.03	11.96
Capps	.....	.....	.....	.....	.....	0.70	0.30	0.33	0.18	0.21	.....	.....	.....	.....
Castlerock	6,220	0.65	0.95	1.80	2.30	1.61	0.70	3.67	3.57	2.80	1.62	0.32	0.45	20.44
Climax	10,394	4.50	2.20	9.70	2.10	1.60	.....	.....	.....	.....	.....	.....	.....	.....
Collbran	.....	0.51	1.19	0.79	0.29	0.68	0.02	2.46	1.35	.....	.....	.....	1.15	.....
Colorado Springs	6,098	0.13	0.13	2.57	0.72	0.81	1.37	3.10	2.43	2.58	0.36	0.03	0.07	14.30
Cope	.....	0.69	0.15	1.08	4.00	.....	3.23	[6]1.18	1.10	0.50	1.33	0.20	0.33	.....

[1] Below sea level. [2] John Twohy. [3] Experiment station.

[4] Records furnished by the Arrowhead Reservoir Company, in the San Bernardino Mountains, San Bernardino County, Cal., at elevations varying from 4,900 to 6,900 feet.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Colorado—Continued.	*Feet.*													
Craig						0.30			1.00	3.02				
Cripplecreek										2.15	0.90	0.42	1.04	
Crook	3,695	0.07	T.	1.50	2.44		2.29	2.49	1.57	1.72				
Delta	4,980	0.65	0.60	0.02	0.00	0.18	0.00	1.50	0.79	2.13			0.35	
*Denver	5,309	0.25	0.24	1.43	0.93	1.27	0.89	2.80	0.97	1.81	0.84	0.10	0.31	11.84
Downing	5,450	0.08	0.94	1.10	1.80	1.33	1.46	2.13	1.15	3.21	1.25	0.80	0.80	16.05
Dumont	8,000	0.25	0.45	2.48	1.22	1.15	0.58	2.18	2.81	2.04	0.75	0.50	0.60	15.01
Durango	8,500	0.50		0.53	0.55	0.05		1.30	1.76	3.59	3.61	1.08	0.86	
Fleming	4,243	0.59	0.55	2.00	0.35	2.34	3.99	1.29	0.83	1.32	1.60	0.40	T.	15.26
Fort Collins	4,994	0.43	0.03	1.73	1.26	1.68	3.05	3.05	2.20	1.55	0.49	0.05	0.24	15.76
Fox		0.40	0.20	0.89	3.07				2.55	0.96	1.60	0.01		
Garnett	7,700	0.12	T.	0.45	0.10	0.02		1.32	0.90	0.39	T.	0.00	0.20	
Glenoyre	6,500	0.41	0.33	2.38	1.16	1.24	0.71	3.03	2.27	2.88	0.75	0.24	0.13	15.53
Goldhill	7,200	0.90	0.48	3.78	1.60	1.63	1.60	2.06	2.98	2.65	1.30			
Grand Junction	4,594	0.37	0.05	0.27	0.18	0.51	0.01	0.43	1.01	3.78	0.79	0.49	0.33	8.22
Greeley	4,637	0.67	0.18	0.93	1.18	1.42	0.46	4.82	2.15	0.99	0.63	0.02	0.07	13.52
Gulch	8,200	0.60	0.50	1.60	0.60	1.30	0.35	4.11	1.32	3.16	0.62	1.73	0.56	16.45
Gunnison	7,648	1.21	0.12	0.25	0.00	0.01	[6]0.00	[5]1.37	0.92	0.99	T.	0.90	0.50	6.27
Holly		0.52	T.	0.50	0.90	0.34	0.92	1.95	0.83	1.47	1.02	0.20	0.57	9.22
Holyoke[1]	3,745	0.47	0.20	1.17	1.81	2.27	2.04	2.03	1.16	0.96				
Holyoke[2]	3,745	0.45	0.40			3.04	1.28		0.95					
Hugo	5,052	0.15	0.15	0.41			2.45	3.28	2.25					
Hugo (near)	5,500	0.52	0.30	1.25	1.22	1.05	0.70	3.42	2.80	0.65	0.57	0.02	0.28	12.78
Husted	6,596	0.43	0.37	2.25	1.96	1.25	0.94	3.80	3.08	2.59	0.86	0.20	0.27	18.00
Jamestown	7,123	0.76	0.74	2.75	1.01	1.12								
Lajara	7,609					T.	0.05	0.73	0.53	0.15			1.00	
Lake Moraine	10,268	0.80	1.25	2.35	1.30	1.35	0.10	5.00	2.60	1.70	2.50	0.45	0.30	19.70
Lamar	3,592					0.55	2.57	1.69	0.48	2.53	0.87	[6]0.00	0.65	
Laporte	5,069	0.60	0.30	2.70	1.00	2.25	2.59	2.47	1.40	1.27	0.50	0.01	0.40	15.49
Las Animas	3,892	0.25	0.23	0.50	1.60	2.45	0.60	1.30	0.80	2.45	1.43	0.00	0.70	11.81
Lay	6,200	0.95	1.80	[1]1.05	0.40	0.66	0.04	3.06	1.26	2.75	0.25	1.47	0.35	14.04
Leadville (near)	10,185	1.26	1.00	3.90	0.30	0.77	T.		0.85	1.05	0.54	0.95	0.80	
Leroy	4,380	0.53	0.24	1.20	1.91	2.36	3.77	1.33	0.87	0.86	0.90	0.20	0.01	14.18
Longmont	4,935	0.38	0.50	1.74	0.85	5.60	1.69	1.53	1.93	1.67	0.59	0.00	0.20	16.68
Longs Peak	8,600	0.26	0.55	3.17	1.00	1.21	0.65	3.60	2.95	1.95	1.05	0.37	0.15	16.91
Loveland		0.35		1.78	1.30	1.79	0.81	0.67		2.43	0.52	0.04	0.15	
Manhattan				1.67	1.92	1.67	0.85	2.83	1.43					
Meeker	6,182	1.24	1.37	1.83	0.39	0.54	0.16	3.56	1.35	3.66	0.28	1.43	0.47	16.28
Millbrook	7,600	0.36	0.52	2.70	0.41	0.19	0.19	3.38	1.72	1.19	1.51	0.40	0.70	13.27
Minneapolis	3,935	0.66	T.	0.37	1.67	0.80	1.39	1.75	0.89	2.45	0.98	0.43	0.67	12.06
Montevista	7,650	0.05	0.20											
Montrose	5,811	0.84	0.60	0.34	0.36	0.13	0.18	0.48	0.37	1.66	0.68	0.38	0.45	6.47
Moraine	7,900	0.53	0.22	2.87	1.08	1.62	0.49	3.88	2.50	2.74	0.75	0.30	0.30	17.28
Ouray	7,640	1.70	3.00	2.80	1.50	1.20	0.00							
Pagoda	6,500	1.70	1.55	2.40	0.70	0.75	0.30	2.50	1.95	3.17	0.11	1.30	0.95	17.38
Paonia		1.13	0.18	0.30	0.47	0.67	T.	1.41	0.47	2.01	0.62	0.55	0.45	8.26
Parachute	5,105	0.38	0.04		0.13	0.21	0.70		1.27	4.12	0.65	0.86	1.20	
Pinkhamton	8,000	0.37	0.55	1.87	1.95	0.87	0.70	1.81	2.28	2.02	0.52	0.56	0.30	13.80
*Pueblo	4,734	0.41	0.31	0.89	0.57	1.13	0.35	2.08	1.98	1.41	0.71	0.34	0.63	10.81
Rangely		0.50	0.32							1.38	0.05	0.15	0.15	
Redcliff	8,656	1.30	0.66	0.56	0.40	1.17	0.60	1.06	1.63	0.63	0.55	2.32	0.08	10.96
Rico	8,737	2.40	1.40	2.10	1.20	0.25	0.59	4.13	2.32	4.46	2.20	2.40	1.70	25.25
Rockyford	4,177	0.32	0.18	0.41	0.55	1.12	0.47	2.07	0.47	1.85	1.60	0.00	0.70	9.74
Ruby		7.69	5.50	8.45	4.55	2.70	0.10					9.30	3.40	
Saguache	7,740	0.25	T.	T.	0.05	0.00	T.		0.27	0.69	T.	T.	0.30	
St. Cloud		0.20	0.00	1.90	1.15	1.30	2.57	2.59	3.73	2.27		0.01	0.00	
San Luis		0.11	0.49	1.24	1.84	0.24	0.26	3.16	1.05	0.74	1.54	0.24	1.40	12.31
Santa Clara	8,500	1.40	2.90	3.60	4.20	[6]1.10			[5]1.49	4.28	3.80	0.90	4.95	
Seibert	4,705	0.85	0.20	0.30	3.64	0.28	2.88	2.23	1.91	0.39	1.28	T.	0.46	14.42
Smokyhill Mine	7,800	1.10	0.40	3.60	1.60	1.15	1.69	3.56	4.45	1.92	1.40	0.30	0.20	21.37
Springfield									1.73	2.62	0.76			
Stamford	9,500	1.40	0.70	1.45	5.50	0.80	1.60	4.30	2.20	0.80	1.80	0.95	2.50	24.00
Steamboat Springs			0.60	0.80	0.70					2.02	0.25	1.81	0.65	
Sterling	3,948		T.											
Sulphur Springs		1.95	0.98	3.05	1.59	1.20	0.35	2.33	1.97	2.24	0.56	1.10	0.38	17.70
Surface Creek	6,175	1.12	1.00	0.68	0.05	0.70	0.16	0.80	0.93	2.99	0.44	0.16	0.30	9.33
Thon	6,500	0.17	0.45	0.62	1.60	0.81	0.75	2.03	4.96	2.61	1.32	0.05	0.40	15.77
T. S. Ranch	5,200	0.50	0.21	0.07	0.07	0.39	0.00	0.85	0.45	5.14	0.80	0.40	0.57	9.45
Twinlakes	9,012	4.80	0.98	1.47		1.25			1.05	1.50	0.48	2.43	0.42	
Vilas		0.58	0.10	0.45	2.00	1.97	1.10	0.07	0.62		0.70	0.32	1.00	
Wallet		0.82	0.20	1.20	3.24	1.30	2.41	2.28	1.48	1.10	1.70	T.	0.40	16.13
Wray	3,512	0.47	0.02	0.66	4.83	1.64	3.77	1.13	1.47	1.01	1.37	0.06	0.20	16.63
Yuma	4,149	0.60	0.20	1.25	1.82	2.06	3.98	2.59	1.04	1.02	0.78	0.30	0.20	15.84
Connecticut.														
Bridgeport	15	1.82	6.32	6.96	0.69	4.81	3.88	3.45	2.19	5.40	2.45	3.02	2.00	42.99
Canton	900	1.93	9.36	5.55	1.03	2.93	3.80	3.39	4.12	6.58	3.73	3.15	1.61	47.18
Colchester	370	1.84	8.34	5.20	1.80	4.97	3.00	2.45	4.05	6.60	4.65	3.42	3.07	49.39
Falls Village		1.11	6.38	5.59	1.71	3.39	2.53	6.67	4.25	6.25	3.10	2.80	2.33	46.11
Greenfield Hill		2.12	7.89	7.46	0.77	4.15	4.69	4.10	3.04	6.08	2.80	2.84	2.03	47.96
Hartford	38	1.61	6.73	6.16	0.93	2.51	4.63	2.40	4.84	5.19	3.65	2.33	2.11	43.09
Lake Konomoc		1.02	6.24	5.57	1.04	2.67	1.99	3.61	3.49	4.28	3.60	3.55	1.50	38.56
Middletown	70	1.80	7.64	5.31	1.09	3.00	4.36	2.72	2.59	5.26	4.32	3.04	2.62	43.75
*New Haven	107	1.82	5.65	5.61	1.19	3.67	2.96	3.86	2.57	3.42	2.91	2.33	2.40	38.39
New London	47	0.50	3.07	2.86	1.50	2.17	1.72	3.64	3.60	2.49	3.37	2.28	2.75	30.05
North Franklin						5.52	2.29	1.84		4.58	3.62			
North Grosvenor Dale	365	2.56	8.93	6.64	1.21	2.18	3.01	2.18	2.47	7.78	2.94	3.22	3.09	46.21
Norwalk	17	1.35	7.08	6.87	0.77	5.33	4.26	4.71	2.53	5.42	2.22	2.41	0.92	42.87

[1] W. H. Johnston.

[2] S. S. Worley.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Connecticut—Continued.	*Feet.*													
Southington	140	1.60	6.20	6.00	1.10	2.91	5.30	3.23	3.20	6.13	3.30	3.10	2.03	44.10
South Manchester	.....	0.67	6.64	4.52	1.04	2.40	3.43	2.85	3.54	5.21	4.00	2.30	2.13	38.73
Storrs	640	1.60	7.10	4.86	0.80	2.72	1.78	3.22	2.71	7.03	3.60	2.49	2.67	40.58
Voluntown	200	2.10	6.45	5.49	1.50	3.39	2.92	3.89	2.77	6.25	3.05	4.17	2.20	44.18
Wallingford	73	1.72	6.10	3.93	1.58	2.49	4.30	2.89	3.49	4.12	3.40	2.73	2.41	41.16
Waterbury	300	2.37	9.25	5.99	1.83	2.34	5.71	3.16	2.67	5.01	2.77	3.03	2.39	46.58
West Cornwall	.....	.....	.....	.....	.....	.....	2.65	4.69	4.68	5.36	3.20	2.98	1.78	.....
West Simsbury	.....	1.75	7.67	5.35	1.07	2.86	3.63	4.57	3.02	5.96	3.16	2.93	1.54	43.51
Windsor	47	0.98	4.97	6.31	0.91	2.18	4.19	3.18	3.53	5.49	3.43	2.20	2.31	39.68
Delaware.														
Dover	40	1.57	6.13	5.50	1.18	2.82	7.63	4.75	0.68	3.86	3.84	2.15	1.51	41.62
Milford	16	2.05	6.71	5.14	1.21	4.30	6.92	3.80	2.10	1.22	3.65	2.47	1.57	41.14
Millsboro	25	1.81	7.18	3.47	1.59	5.38	4.03	6.59	1.86	3.99	5.19	2.04	1.77	44.90
Newark	136	1.30	4.81	4.45	1.57	1.89	3.05	2.61	1.14	4.45	1.92	2.95	0.56	30.70
Seaford	.....	1.03	7.36	4.01	1.84	6.44	5.81	7.50	3.17	5.29	2.48	2.06	1.01	48.00
Wilmington	78	2.59	6.00	5.90	1.37	2.54	4.41	3.03	0.47	4.87	1.87	2.93	.....	.....
District of Columbia.														
Distributing Reservoir	120	1.89	5.02	2.73	0.66	2.06	1.61	3.63	1.40	2.79	0.30	1.58	.....	.....
Receiving Reservoir	160	1.94	5.21	3.14	0.65	2.27	2.66	3.83	1.89	3.17	0.33	2.44	.....	.....
*Washington	112	2.27	5.31	5.16	1.07	2.26	2.39	3.69	2.65	3.18	0.34	2.54	0.30	31.16
West Washington	.....	1.77	5.17	4.94	1.19	2.41	2.55	3.93	2.71	3.26	0.39	2.84	0.39	31.55
Florida.														
Amelia	.....	2.85	1.96	2.92	1.20	0.60	6.97	4.64	5.03	1.13	5.51	4.42	2.99	40.22
Archer	92	4.20	3.43	3.63	1.83	3.74	14.46	5.13	6.72	2.23	3.28	4.72	2.85	56.22
Avonpark	.....	3.38	3.27	1.26	0.18	3.98	10.02	6.89	3.17	5.37	1.83	.....	.....	.....
Bartow	117	2.52	2.55	1.56	0.00	2.83	9.76	7.39	4.49	5.31	1.38	0.97	2.11	40.87
Brooksville	328	4.31	1.60	1.58	0.32	4.42	11.94	11.39	7.30	4.92	0.76	2.89	1.34	52.77
Carrabelle	.....	.....	.....	.....	0.40	[4]1.90	9.00	4.28	T.	3.81	4.40	2.20	.....	.....
Clermont	.....	4.77	3.95	1.37	0.10	2.12	7.36	6.17	4.29	3.90	1.05	1.81	1.07	37.96
De Funiak Springs	193	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.05	9.80	2.25	.....
Earnestville	.....	3.90	3.03	2.05	0.23	3.11	17.92	8.63	10.20	4.09	1.89	2.51	1.26	58.82
Emerson	.....	.....	.....	.....	0.49	3.90	15.40	11.23	8.23	3.02	2.67	4.70	2.07	.....
Eustis	180	7.27	2.67	1.18	0.26	2.45	7.79	6.79	6.78	2.97	0.84	2.59	1.82	43.36
Federal Point	.....	4.08	2.57	2.47	0.08	0.68	9.36	6.90	6.01	3.59	8.58	4.44	3.67	52.43
Fort Meade	125	3.26	1.73	0.90	0.03	4.60	13.30	11.32	3.54	5.42	2.42	1.27	2.84	50.63
Frostproof	.....	2.02	2.31	0.93	0.09	3.30	11.04	8.81	4.59	7.01	1.89	0.64	1.98	44.61
Gainesville	178	.....	.....	.....	.....	3.16	11.14	4.96	6.35	6.17	.....	.....	.....	.....
Grasmere	.....	4.29	3.42	1.63	T.	2.08	7.06	7.63	6.86	4.02	1.00	3.20	1.75	42.94
Huntington	59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.03	1.23	.....
*Hypoluxo	.....	2.39	2.66	3.13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Jacksonville	43	2.53	1.66	2.51	0.49	1.24	9.41	4.25	6.16	2.19	3.03	4.55	2.17	40.19
*Jupiter	28	5.06	2.64	2.35	1.59	2.83	8.92	8.27	4.32	5.65	5.98	2.40	3.25	53.26
*Key West	22	0.90	2.11	1.61	0.08	0.54	3.10	3.18	2.37	4.22	1.93	3.47	2.21	25.72
Kissimmee	60	4.79	7.31	0.98	0.24	1.51	12.57	9.24	4.17	6.82	3.78	3.23	2.36	57.00
Lake Butler	.....	.....	.....	.....	0.27	4.67	9.90	8.84	11.22	6.85	5.50	4.30	1.21	.....
Lake City	210	2.59	2.54	3.67	1.03	1.36	10.36	10.87	4.42	4.48	4.42	5.54	3.38	54.66
Lemon City	15	0.45	3.75	2.14	0.10	2.32	13.55	3.35	6.40	6.45	1.25	1.00	1.80	42.56
Macclenny	125	.....	2.86	3.68	0.37	3.22	10.12	6.25	7.62	0.70	3.35	3.69	2.50	.....
Manatee	16	2.23	4.45	0.55	0.05	1.75	9.65	14.36	14.57	7.56	3.57	0.84	2.58	62.16
Merritts Island	20	5.87	2.26	1.42	0.20	2.01	10.45	2.43	5.63	4.92	2.17	2.22	2.12	41.70
Milton	100	6.90	6.05	10.57	3.53	2.70	14.03	19.97	8.46	4.29	7.75	13.17	3.19	100.61
Mullet Key	15	2.34	3.04	0.87	0.04	3.32	10.02	7.43	6.81	3.66	1.61	1.38	2.30	42.82
Myers	.....	2.53	2.24	2.17	0.32	2.02	20.90	9.04	2.90	11.12	4.72	1.20	3.43	59.65
New Smyrna	.....	8.01	3.34	1.20	T.	0.97	[5]8.44	.....	4.57	2.30	4.14	4.97	2.73	.....
Ocala	150	4.58	3.14	2.77	0.78	1.53	12.98	5.02	5.00	2.84	1.06	3.67	1.49	44.86
Orange City	50	6.56	2.82	1.27	0.00	4.12	10.96	.....	.....	3.73	1.66	3.65	1.40	.....
Orangepark	24	2.67	2.22	2.33	0.43	4.08	5.72	8.52	.....	.....	.....	7.17	1.49	.....
Orlando	98	5.03	2.95	1.39	0.00	2.71	11.18	10.66	5.24	3.88	1.07	3.53	1.95	49.59
Oxford	.....	.....	.....	.....	0.02	3.30	8.50	4.40	1.40	4.20	0.90	2.50	0.50	.....
*Pensacola	56	2.98	2.98	6.97	1.14	2.81	12.46	11.76	5.87	1.63	6.86	4.59	2.09	62.14
Plant City	121	3.37	3.63	1.98	1.68	2.02	16.44	8.61	6.94	7.76	2.31	0.94	0.80	56.48
Quincy	260	.....	.....	.....	.....	5.08	13.02	10.40	.....	.....	.....	.....	.....	.....
St. Francis	.....	6.10	3.75	1.13	0.07	2.99	6.74	7.76	5.24	3.44	1.40	1.59	1.31	41.52
St. Francis Barracks	.....	4.40	1.63	3.10	0.06	2.05	6.36	4.97	2.35	3.00	7.05	3.42	2.28	40.69
Tallahassee	183	5.41	3.66	6.66	1.32	2.60	10.17	10.51	3.77	2.00	3.60	8.60	5.70	64.00
*Tampa	36	3.38	3.77	2.16	0.86	2.27	13.42	12.30	7.96	7.30	1.00	3.96	1.25	59.63
Tarpon Springs	20	4.58	3.09	1.45	T.	2.12	8.97	8.49	7.66	4.41	0.83	5.18	1.68	48.46
Georgia.														
Adairsville	772	3.64	3.67	2.66	1.58	3.18	1.33	6.16	2.36	4.73	[4]1.04	4.34	1.23	35.92
*Alapaha	.....	.....	.....	.....	.....	0.85	8.10	7.34	4.52	2.48	.....	.....	.....	.....
*Albany	232	3.66	8.99	4.68	0.40	2.14	1.85	7.66	2.00	2.43	2.10	2.18	1.78	39.87
Allentown	.....	.....	.....	2.99	1.60	2.34	2.76	5.71	3.79	2.74	0.72	7.49	5.21	.....
*Americus	362	4.45	6.21	4.76	1.54	1.85	2.64	9.29	4.69	1.24	1.98	6.41	4.13	49.19
*Athens	694	.....	.....	.....	.....	1.78	3.93	10.31	1.00	0.66	1.82	.....	.....	.....
*Atlanta	1,131	3.12	3.04	3.29	0.58	1.95	2.66	7.55	1.97	1.36	1.28	5.90	1.42	34.12
*Augusta	180	3.58	6.77	1.41	2.71	3.09	3.61	9.89	3.31	1.71	0.40	3.74	3.23	43.45
*Bainbridge	119	.....	.....	.....	.....	1.05	6.53	7.96	4.03	0.78	.....	.....	.....	.....
Blakely	.....	4.15	9.52	5.61	2.44	1.73	1.91	12.52	3.91	0.97	1.97	5.43	3.11	53.27
Brag	.....	3.35	6.36	1.72	0.63	1.36	6.58	4.09	6.60	1.30	0.57	2.46	6.86	41.88
Brunswick	14	.....	2.33	4.27	0.83	1.60	1.85	4.29	.....	.....	.....	.....	.....	.....
*Camak	613	.....	.....	.....	.....	2.32	5.15	10.63	2.89	3.10	.....	.....	.....	.....
*Canton	894	4.44	4.17	3.01	1.78	1.55	3.31	7.97	1.46	1.69	2.27	6.39	1.30	39.34
Cedartown	850	.....	.....	.....	.....	.....	.....	.....	.....	3.13	1.10	4.58	0.68	.....

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Georgia—Continued.	*Feet.*													
Clayton	2,100	5.20	5.82	3.09	2.23	3.70	4.63	11.11	1.67	9.59	2.87	11.89	0.86	62.66
*Columbus	262	4.47	7.07	3.94	2.92	2.14	3.87	10.35	5.52	5.36	.....	.....	.....	.....
*Cordele	.....	.....	.....	.....	.....	1.80	5.04	5.20	2.45	2.90	.....	.....	.....	.....
Covington	800	4.59	2.67	2.95	2.94	1.88	3.71	7.24	3.16	0.90	2.62	9.78	1.11	43.55
Dahlonega	2,230	4.57	4.81	2.91	2.07	5.05	4.62	[a] 8.03	2.95	1.82	3.36	7.86	0.97	49.02
Diamond	2,020	3.32	3.70	3.33	2.34	2.55	4.75	11.31	2.76	3.13	2.20	9.17	1.71	50.36
*Dublin	.....	3.98	7.97	3.12	1.22	.....	.....	.....	.....	.....	.....	5.85	4.86	.....
*Eastman	361	.....	.....	.....	.....	1.34	3.44	6.08	2.35	2.44	.....	.....	.....	.....
*Elberton	710	5.45	4.91	3.41	2.23	2.10	2.79	7.46	1.44	2.13	2.27	5.61	2.82	42.62
Fleming	26	3.75	3.11	3.32	0.25	6.16	7.21	4.56	5.49	3.25	1.29	5.63	7.62	51.64
*Fort Gaines	166	3.95	6.45	5.26	.....	4.58	3.94	9.94	3.94	1.09	.....	3.78	.....	.....
*Gainsville	1,254	.....	.....	.....	.....	1.53	2.08	10.61	0.77	1.62	.....	6.77	2.02	.....
Gillsville	1,052	4.45	2.14	2.11	0.80	4.68	2.82	7.62	1.48	1.48	1.57	6.13	0.40	35.68
*Griffin	975	.....	.....	.....	.....	1.14	3.08	8.90	1.75	0.58	.....	.....	.....	.....
Hawkinsville	235	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.20	.....
Hephzibah	402	4.30	7.70	.....	1.90	1.30	1.40	6.75	1.41	4.25	0.50	4.15	4.10	.....
Lagrange	778	4.98	4.65	4.12	1.65	1.53	1.66	11.05	1.28	3.58	1.07	7.15	1.69	44.41
Leverett	.....	.....	.....	2.30	2.99	1.20	1.80	.....	.....	.....	.....	.....	.....	.....
Louisville	.....	3.31	8.39	2.25	.....	.....	.....	.....	.....	.....	0.64	2.86	5.02	.....
Lumpkin	.....	3.61	5.84	4.14	2.34	1.17	3.27	8.21	3.88	2.14	2.82	.....	.....	.....
*Macon	334	3.58	5.85	3.47	1.73	1.82	3.29	6.16	5.66	0.68	1.58	7.09	5.01	45.92
Marietta	1,133	4.01	3.75	3.44	1.28	2.14	2.58	9.36	T.	1.40	1.82	4.94	1.45	36.17
Marshallville	.....	5.25	8.08	4.15	3.60	3.10	2.04	12.56	2.60	1.17	2.15	8.78	4.75	58.23
Milledgeville	264	3.94	6.72	3.00	0.71	2.81	3.72	7.69	2.56	1.63	1.86	7.25	4.62	46.51
*Millen	158	3.05	8.14	2.69	.....	2.81	3.49	2.44	2.65	0.84	0.68	3.02	.....	.....
Monticello	800	.....	4.10	3.15	1.40	.....	0.90	.....	1.10	.....	.....	5.15	2.70	.....
Morgan	337	4.01	8.68	5.54	1.81	1.67	5.96	[f] 4.55	[h] 1.15	1.03	2.33	4.37	5.01	46.11
*Newnan	959	.....	.....	.....	.....	1.82	3.72	10.14	2.92	1.26	1.19	7.13	0.95	.....
Piscola	190	4.20	4.95	6.90	2.70	0.61	8.00	10.70	7.10	5.40	2.50	5.35	6.50	64.91
Point Peter	1,000	5.40	4.60	3.35	2.90	2.55	1.45	8.65	1.10	1.25	2.35	6.60	[h] 3.15	43.35
Poulan	365	2.97	9.77	4.85	0.68	2.99	2.64	7.62	5.80	4.28	2.05	5.82	4.92	54.89
*Quitman	80	3.93	5.11	2.58	0.91	2.55	7.81	12.04	6.04	2.73	1.07	4.54	6.68	55.99
Ramsey	.....	2.77	4.11	2.50	3.27	3.94	1.27	5.14	2.09	3.58	1.65	6.88	0.33	37.53
*Resaca	657	3.35	4.84	3.08	2.48	.....	.....	.....	.....	.....	1.78	5.49	0.99	.....
*Reynolds	.....	.....	6.53	3.82	2.06	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Rome	576	4.06	4.26	3.22	1.91	3.10	1.85	5.30	4.51	3.45	1.45	4.96	1.47	39.54
*Savannah	98	4.32	2.99	3.19	1.51	4.30	5.31	4.49	5.78	2.08	0.99	2.42	6.86	44.24
Talbotton	750	5.40	6.83	3.45	1.70	1.27	4.01	9.86	1.73	2.04	2.38	8.46	3.09	50.22
Tallapoosa	1,150	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.43	1.37	.....
*Thomasville	330	4.05	4.44	5.35	1.92	3.48	4.96	6.70	4.69	7.62	1.61	7.81	7.67	60.30
*Toccoa	1,200	4.60	4.68	2.06	2.54	4.11	3.40	13.10	1.29	2.32	1.56	8.22	1.04	48.92
*Union Point	658	.....	.....	.....	.....	5.44	5.04	10.10	2.67	0.42	.....	.....	.....	.....
*Washington	.....	3.85	4.42	2.98	1.28	2.78	4.75	11.94	1.54	3.07	2.84	6.35	3.80	49.60
*Waycross	131	.....	.....	.....	.....	1.91	5.24	10.81	3.30	1.83	.....	.....	.....	.....
*Waynesboro	.....	.....	.....	.....	.....	3.81	3.50	4.37	3.21	1.88	.....	.....	.....	.....
*Westpoint	620	.....	.....	.....	.....	1.88	1.88	8.51	1.85	3.67	.....	.....	.....	.....
*Whitesburg	1,050	6.47	3.39	3.74	1.77	.....	.....	.....	.....	.....	.....	.....	.....	.....
Idaho.														
American Falls	4,343	2.32	0.26	2.39	2.23	3.60	0.83	0.79	0.74	.....	.....	3.88	1.00	.....
Atlanta	.....	7.79	2.87	4.32	4.81	4.98	1.07	.....	.....	.....	.....	.....	.....	.....
Birch Creek	.....	.....	.....	.....	.....	.....	1.02	0.21	0.00	.....	.....	.....	.....	.....
Blackfoot	4,505	1.35	.....	1.95	1.50	2.63	0.27	0.75	1.74	0.23	0.92	2.17	0.46	.....
Bliss	3,269	3.68	0.96	1.91	2.01	1.89	.....	.....	.....	.....	.....	.....	.....	.....
Boise Barracks	2,880	3.72	0.50	2.41	2.72	4.90	1.36	0.10	1.06	0.28	1.16	3.26	1.48	22.95
Burnside	6,023	.....	0.03	1.35	0.27	3.59	1.49	1.49	0.66	T.	1.00	0.73	1.13	.....
Carriboo	.....	3.61	1.40	4.66	1.69	.....	.....	.....	.....	.....	.....	.....	.....	.....
Challis	.....	0.81	0.35	0.45	0.81	0.43	.....	.....	.....	.....	.....	.....	.....	.....
Chesterfield	.....	1.30	0.46	2.03	1.12	2.51	0.43	0.90	1.90	0.14	0.65	3.22	0.68	15.34
Corral	5,700	4.35	0.70	2.18	1.65	2.52	0.43	0.24	0.28	1.08	0.60	4.25	1.30	19.58
Dairy	.....	2.28	1.09	1.46	2.02	3.31	1.15	0.58	0.97	0.43	0.75	.....	.....	.....
Downey	4,860	2.00	0.06	1.30	0.74	3.32	0.05	0.47	1.65	T.	0.62	.....	.....	.....
Fort Lemhi	.....	0.46	0.71	1.10	0.96	1.82	0.99	1.35	0.50	.....	.....	.....	.....	.....
Fort Sherman	2,106	4.14	2.53	1.00	1.35	3.11	0.87	0.32	1.22	0.96	1.70	9.13	4.94	31.27
Fraser	.....	1.80	1.87	2.84	2.71	4.20	2.20	.....	.....	.....	.....	.....	.....	.....
Gimlet	5,503	.....	.....	.....	.....	.....	.....	.....	T.	0.85	0.43	6.11	1.66	.....
Grangeville	.....	2.77	1.17	2.11	2.42	4.94	3.24	0.92	1.61	2.14	1.99	3.23	1.49	28.03
Idaho City	4,000	.....	1.46	4.11	.....	6.26	1.70	1.86	0.91	0.45	.....	5.96	3.62	.....
*Idaho Falls	4,742	1.56	0.46	3.41	1.13	2.78	0.65	1.16	1.08	0.30	0.58	3.25	0.82	17.18
Junction	.....	0.07	0.40	0.50	.....	.....	.....	1.26	0.76	.....	.....	.....	.....	.....
Kootenai	1,750	4.07	1.95	0.80	.....	.....	.....	.....	.....	0.76	1.35	5.32	5.04	.....
Lake	6,000	3.00	1.40	2.00	1.30	2.50	0.50	.....	.....	.....	1.36	3.40	1.40	.....
Lewiston	647	1.38	1.10	0.78	1.19	1.70	1.34	0.16	1.47	.....	1.20	[e] 2.19	1.97	.....
Lost River	.....	2.91	0.11	1.53	0.30	2.24	0.60	0.93	0.10	0.25	0.14	2.31	0.44	11.86
Martin	6,000	3.35	0.15	2.30	0.55	3.45	[i] 0.20	0.40	0.10	0.24	0.55	4.10	0.20	15.59
Minidoka	4,287	1.94	0.26	2.88	1.28	3.08	1.20	0.00	T.	0.06	0.00	3.35	0.37	14.42
Moscow	2,569	1.73	1.27	1.11	0.57	3.60	2.21	0.17	1.33	0.81	1.07	5.52	3.10	22.49
Murray	2,750	5.67	3.59	2.95	2.81	5.07	1.37	0.18	2.18	1.57	0.87	11.12	4.84	42.22
Nampa	2,400	2.01	0.45	1.20	1.26	3.19	1.04	0.25	0.87	0.34	0.78	2.08	1.76	15.23
Oakley	4,191	1.19	0.20	1.87	0.80	1.20	0.50	0.60	0.62	0.55	.....	1.54	.....	.....
Ola	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.03	1.74	4.48	4.42	.....
Orchard	.....	1.88	0.37	.....	2.34	2.86	.....	.....	.....	.....	.....	.....	.....	.....
Paris	5,946	1.71	0.72	1.62	1.31	2.27	0.07	1.27	0.65	0.94	0.05	2.17	0.71	14.00
Payette	2,195	2.58	0.30	0.86	1.74	2.20	1.58	0.44	0.72	0.06	0.05	2.05	1.20	13.78
Pollock	2,050	.....	0.40	1.02	1.73	2.89	1.22	0.81	1.02	0.47	0.97	1.41	0.83	.....
Rexburg	4,918	.....	.....	.....	.....	.....	.....	.....	0.75	0.09	0.00	2.94	.....	.....
Roseberry	.....	2.81	0.94	1.50	1.24	0.98	[d] 1.09	1.03	1.73	0.27	0.12	3.44	1.97	17.27

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Idaho—Continued.	*Feet.*													
Salubria		6.40	1.30	1.46	2.98	4.86	1.58	0.28	1.28	[c]0.25	1.18	4.60	3.21	29.38
Shoup					1.03		1.02	0.88	0.20	[i]0.72	0.38	1.40	1.05	
Soldier	5,200	7.85	1.33	2.65	0.79	2.19	0.51	0.92	0.46	0.84	0.33	4.82	1.79	24.48
Swan Valley	5,434	1.23	0.57	2.49	1.17	3.71	0.71	1.38	1.40	1.03	0.32	1.98	1.12	17.11
Warren	5,352	4.88	3.15	2.33	2.73	3.47	1.40	1.00	1.62	1.71	1.16	4.82	3.09	31.36
Yellow Jacket								1.85	1.45	0.95	0.63	4.46	1.70	
Illinois.														
Albion	531	0.73	1.30	4.81	1.22	13.21	6.13	4.89	2.54	5.68	2.05	3.35	0.46	46.38
Alexander	670	1.19	1.69	0.82	2.49	4.27	4.63	7.50	0.89	5.49	1.98	1.09	0.22	32.26
Ashton	830	0.57	1.62	1.33	3.71	5.74	3.55	4.71	2.04	6.49	0.87	2.32	0.37	33.32
Atlanta	743	1.25	2.09	0.93	2.39	4.60		9.30	4.45	4.82	0.23	2.32	0.24	
Atwood[1]	665	1.53	3.17	2.84	1.78	6.16	5.72	12.14	3.23	6.57	1.71	2.93	0.47	48.25
Atwood[2]	665	1.17	2.14	0.98	1.24	3.81	5.08	8.92	[3.54]	5.44	1.46	2.28	0.88	[39.64]
Aurora[3]	676	0.91	1.91	1.75	3.75	6.12	2.06	5.60	2.43	6.92	0.22	3.83	0.16	35.66
Aurora[4]	676	1.21	1.93	1.71	4.17	6.99	2.82	5.60	2.68	7.56	0.36	4.10	0.32	39.25
*Beardstown		1.65	1.90	0.43	3.39	3.68	3.66	13.52	1.73	5.02	2.97	1.25	0.88	40.08
Bloomington	853	0.82	2.55	2.11	2.02	6.79	3.90	6.68	4.75	5.40	0.16	2.95	0.53	38.66
Bushnell	662	1.00	1.40	0.43	3.45	4.44	2.58	8.34	3.34	6.96	1.65	1.67	0.22	35.48
*Cairo	359	1.45	1.69	3.97	2.57	10.82	4.73	2.31	1.78	2.95	1.73	4.18	1.18	39.36
Cambridge	824	0.92	1.10	1.24	4.55	4.33	2.89	6.20	3.54	5.45	1.46	1.21	0.63	33.52
Carlinville	673	1.28	2.76	1.51	2.48	8.11	6.60	6.53	4.63	3.87	1.35	2.01	0.43	41.56
Carlyle	470	1.39	2.62	2.46	1.57	6.67	3.36	6.92	3.55	6.86	1.93	5.31	0.39	43.03
Carrollton	660	1.41	1.24	1.45	1.86	6.94	2.92	6.42	2.19	4.58	1.37	1.50	0.50	32.38
Catlin		1.06	[c]0.45	0.73	2.03	5.07	3.18	6.27	3.27			6.60	0.50	
Cazenovia		1.55	1.60	[g]1.08	4.18	5.51	3.09	5.60	5.25	5.35				
Charleston	720	1.02	1.99	1.85	1.30	6.41	8.12	10.04	3.18	6.53	0.49	3.82	1.08	45.83
Chemung	823	0.99	1.93	3.48	6.78	4.18	3.18	5.10	2.27	8.56	1.06	2.58	0.77	40.88
*Chester		1.79	1.93	3.91	2.25	7.59	7.08	4.27	2.52	2.58	1.90		0.20	
*Chicago	824	1.12	3.48	1.26	2.79	4.16	2.82	3.61	3.52	6.70	1.36	2.16	2.16	33.14
Cisne	616	1.15	1.69	2.88	1.24	6.81	8.29	6.00	1.36	6.64	2.43	3.98	0.43	42.90
Clearcreek	503	0.92	0.97	0.93	4.45	7.05	2.81	9.65	2.13	6.95	0.08	2.75	0.12	38.81
Coatsburg	763	1.00		0.94							1.65	1.82	0.66	
Cobden	656	[1.51]	[g]1.55	3.72	2.89	9.30	5.50	3.76	2.24	2.38	2.32	3.75	0.89	[39.81]
Cordova	599	0.93	1.45	0.79	4.60	4.88	2.15	6.81	3.53		2.04			
Decatur	685	0.97	2.91	1.44	1.56	4.75	4.00	7.12	3.00	5.80	0.66	2.81	0.32	35.34
Dixon	725	0.65	0.74	0.81	3.62	5.87	3.18	4.81	3.75	4.66	0.89	1.70	0.44	31.12
Duquoin	459	1.51	2.49	3.30	2.38	8.80	3.45	5.23	0.99					
Dwight	657						3.13	4.61	2.61	5.09	0.64	3.54	0.11	
East Peoria	470	0.75	1.80	1.26	3.74	4.77	3.47	7.97	2.84	4.09	0.34	3.18	0.27	34.48
Effingham	690		[c]1.65	[g]2.20	[i]2.40		4.60	5.40	1.45	3.80		3.38	0.52	
Fort Sheridan	693	0.56	1.06	2.53	3.13	2.35	1.95	3.86	1.79	5.60	0.97	2.80	0.65	27.25
Frederick		1.40	1.70	0.95										
Friendgrove	580	0.94	2.09	4.42	2.49	8.67	8.18	6.01	2.98	7.56	1.48	3.89	0.50	49.21
Galva	843	1.17	0.80	0.79	4.24	5.25	3.10	9.45	3.69	6.68	1.30	1.42	0.30	38.19
Gilman	656	1.30	1.94	0.89										
Glenwood	631	0.94	1.38	0.43	2.84	4.44	3.41	5.96	3.01	5.67	0.65	2.63	0.14	31.50
Golconda	500	1.63	1.64						1.65	3.01	2.79	4.38	1.29	
*Grafton	422	1.45	2.47	1.89	2.80	6.46	7.03	5.09	1.93	3.37	1.16	1.02	0.50	34.97
Greenville	635	3.54	3.32	2.87	2.26	7.28	5.03	2.26	1.50	5.82	2.80	5.36	0.82	42.36
Griggsville	650	1.50	2.16	0.56	3.05	8.10	3.29	8.10	2.72	9.32	1.60	1.65	0.38	42.43
Halliday		1.99	2.32	4.33	2.17	[c]7.05	3.51	5.31	1.76	1.76	2.35	3.14	0.89	36.58
Havana	475	1.21	2.13	0.98	3.15	4.31	3.25	4.87	3.36	5.30	0.58	1.84	0.33	31.31
Herrin	456	1.00	2.00	4.55	2.35	5.00	3.95	2.20	0.50	2.60	[i]2.00	1.91	0.46	28.52
Hillsboro	676	0.73	2.43	1.23	1.98	6.62	3.11	4.15	2.08	4.80	1.74	2.58	0.77	32.22
Iron	436	1.35	1.23	3.13	1.79	7.12	5.82	5.54	1.95	4.27	1.87	3.36	0.67	38.10
Joliet	541	1.14	2.07	1.15	2.82	5.28	3.89	4.97	2.75	6.69	0.86	2.96	0.36	34.94
Jordans Grove	510	1.33	2.36	3.69	3.64	8.56	2.84	6.06	1.47	3.15	1.56	3.43	0.22	38.31
Kankakee	642	1.09		0.53	1.93	5.53	5.64	7.31	4.99	5.82		1.95	0.17	
Kishwaukee				1.20	4.15	8.82	2.01	3.84	1.76	6.56			0.23	
Knoxville	775	1.15	1.40	1.57	3.62	4.19	3.65	7.25	4.91	5.28	2.06	2.30	0.38	37.76
Lagrange	657	1.16	2.39	1.04	4.21	4.73	2.63			5.39	0.85	3.03	0.10	
Laharpe	700	1.26	2.14	1.18	2.35	4.80	5.16	7.80	7.96	12.28	2.00	2.53	0.99	50.45
Lanark	883	0.49	1.02	1.21	5.05	7.92	2.92	5.06	3.23	4.78	1.97	0.83	0.95	35.43
Lexington	800	1.09	1.87	0.53	3.62	6.22	4.58	7.18	5.47				0.15	
Loami		0.76	2.06	1.27	1.65	5.28	3.57	6.50	1.00	3.99	1.66	1.63	0.22	29.59
Louisville	480	1.05	2.02	2.75	1.55	4.05	5.20	6.26	1.04	4.23	2.31	3.92	0.31	34.69
McLeansboro	462	1.47	2.24	4.51	2.00	7.06	4.86	4.38	1.29	3.91	1.73	2.39	0.70	36.54
Martinsville	575	0.85	1.80	1.90	1.92	3.37	3.23	10.57	2.83	4.30	0.95	3.27	1.41	36.40
Martinton	632						4.42	7.02	3.62	5.50	0.25	1.98	0.13	
Mascoutah	571	1.54	2.41	2.89	2.30	9.70	5.20	3.80	1.40	5.80	1.90	4.20	0.10	41.24
Mattoon	744	0.80	1.68	1.13	1.04	5.39	5.68	10.07	3.04	6.11	0.49	2.81	0.88	39.12
Minonk	745	1.26	1.44	1.08	3.64	5.50	3.87	5.33	2.67	4.53	0.20	2.32	T.	31.84
Monmouth	784	1.10	1.35	0.68	4.50	4.76	3.56	5.79	6.68	6.02	1.76	0.81	0.35	37.36
Morrisonville	638	0.43	1.41	1.25	1.98	5.04	3.65	5.98	3.07	4.44	1.19	2.59	0.44	31.47
*Mount Carmel	424	0.94	2.40	5.49	2.25	9.23	4.69	3.96	2.52	4.15	2.04	3.34	0.41	41.42
Mount Pulaski	685	1.32	2.22	1.14	2.31	2.89	4.74	8.14	1.95	5.06	0.43	1.95	0.51	32.66
Mount Vernon	511	1.77	1.95	4.05	1.67	7.64	3.37	6.30	3.06	6.19	1.86	3.10	0.29	41.25
New Burnside	700	1.33	1.20	2.86	3.36	9.44	5.90	5.29	2.54	2.54	1.74	3.14	0.68	40.02
Olney	487	0.89	2.21	3.07	1.52	6.13	3.82	8.67	0.47	4.57	1.69	5.56	0.46	39.06
Oregon	702		1.52	1.70	3.68	5.21	3.55	4.48	0.99	5.61	0.85	1.73	0.30	
Oswego	650	1.09	1.90	1.71	3.48	7.52	1.75	5.32	4.03	7.51	0.31	3.30	0.15	38.07
*Ottawa	500	1.37	1.65	1.32	3.38	4.24	2.22	8.63	2.43	9.38	0.17	3.45	0.28	38.50
Palestine	500	1.00	2.47	2.19	1.07	3.90	7.33	7.76	3.22	4.30	2.60	5.30	0.54	41.68
Paris	600				1.28	5.92	5.45	8.39	5.41	5.94		1.96		
*Peoria[5]	519	1.34	1.97	1.44	3.87	5.09	2.59	8.20	4.96	3.98	0.26	2.34	0.13	36.37
Peoria[6]	519	1.30	1.95	1.05	4.47	5.74	2.23	7.02	4.69	4.86	0.23	2.20	0.40	36.14
Philo	771	1.06	1.57	0.77	1.38	3.99	3.45	7.27	6.41	5.02	0.20	3.41	0.83	35.36

[1] J. W. C. Gray. [2] W. E. Means. [3] C. A. Love. [4] Dr. M. M. Robbins. [5] River observer. [6] Dr. F. Brendel.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Illinois—Continued.														
	Feet.													
Plumhill	500	0.99	2.50	2.99	2.18	6.96	4.20	5.56	0.44	5.88	1.72	[c]4.15	0.45	38.02
Rantoul	768	0.86	1.38	0.87	1.68	4.95	4.08	6.86	3.83	5.73	0.22	2.25	0.30	33.01
Reynolds	800	0.92	1.17	1.10	5.34	5.69	2.65	6.09	3.76	4.44	1.74	0.65	0.93	34.48
Riley	956	0.61	1.56	1.85	2.97	5.04	3.02	3.29	2.15	9.45	0.38	1.77	0.43	32.52
Robinson	500	1.00	2.15	1.85	1.15	3.93	4.33	7.10	1.80	4.68	0.96	4.92	0.68	34.55
Rockford	763	0.90	2.40	2.02	4.08	6.31	2.34	4.36	3.75	8.33	0.85	3.05	0.90	39.29
Rosehill	679	1.65	1.40	2.93	2.11	.....	.....	7.82	4.24	6.93	1.25	6.92	1.30	.....
Roundgrove	715	.....	.....	1.83	4.91	4.34	3.30	6.55	2.99	5.10	1.00	0.97	0.39	.....
Rushville	669	1.56	1.72	0.78	4.45	4.31	3.72	9.61	1.77	5.85	1.59	1.35	0.67	37.38
St. Charles	700	1.05	2.20	2.46	4.11	5.77	2.52	6.07	2.61	14.44	0.40	3.00	0.61	45.24
St. John	450	1.58	2.43	3.89	3.19	9.46	4.40	6.83	2.14	2.70	1.94	3.86	1.31	43.73
Scales Mound	900	0.77	0.85	1.39	6.17	7.97	2.04	7.93	2.00	5.11	3.31	1.07	1.12	39.73
*Springfield	644	1.77	2.11	1.25	1.91	2.49	6.45	8.51	1.87	5.42	1.76	1.88	0.31	35.73
Streator	626	1.30	1.15	0.65	2.63	5.98	3.27	5.75	1.52	[f]3.44	0.05	2.07	0.10	27.91
Sycamore	855	0.50	2.03	1.44	2.74	3.80	1.59	3.60	0.58	8.39	0.26	1.88	0.55	27.36
Tiskilwa	798	1.16	1.59	1.01	4.28	4.71	2.81	5.57	2.50	6.70	0.76	1.78	0.17	33.04
Tuscola	664	0.91	2.22	1.46	1.30	4.79	3.46	6.85	3.85	5.69	0.65	3.18	0.75	35.11
Walnut	717	0.87	1.57	1.51	5.17	4.12	3.81	6.32	2.63	5.94	1.20	2.06	0.17	35.37
*Warsaw	.....	.....	.....	1.50	1.67	3.05	2.39	.....	.....	.....	.....	.....	.....	.....
Wheaton	769	1.09	2.30	2.11	4.50	7.07	2.83	5.14	2.48	9.09	0.53	3.78	0.55	41.47
Winnebago	900	0.85	1.54	1.28	3.68	6.50	2.94	4.95	1.92	5.61	0.75	2.18	0.58	32.53
Zion	938	1.02	1.80	0.91	5.78	8.35	2.18	4.05	3.78	4.53	1.50	0.71	1.03	35.64
Indiana.														
Anderson	892	1.47	1.80	2.74	2.33	3.86	3.74	9.16	5.30	7.71	1.09	3.00	0.90	43.10
Angola	1,052	2.37	2.01	3.12	5.91	4.35	3.58	12.78	7.60	5.90	0.75	2.12	1.53	52.02
Auburn	874	.....	.....	.....	.....	.....	.....	9.87	3.54	4.65	[c]0.47	1.75	1.06	.....
Bedford	681	1.10	0.72	.....	.....	.....	3.80	.....	.....	4.45	T.	.....	.....	.....
Bloomington	744	.....	2.60	2.10	T.	5.12	3.52	7.78	7.49	4.16	1.35	4.36	0.90	.....
Bluffton	835	1.31	1.52	3.42	5.29	5.63	4.66	6.53	7.85	5.04	1.04	2.31	1.82	46.42
Bright	.....	.....	.....	.....	.....	.....	.....	.....	.....	[c]4.75	1.21	3.67	1.75	.....
Butlerville	767	1.00	2.68	4.37	0.43	2.75	5.02	8.75	3.21	5.81	1.72	3.62	1.35	40.71
Cambridge City	941	1.84	1.83	3.13	1.18	2.85	3.49	6.00	8.14	5.27	0.69	3.90	1.79	40.11
Columbia City	841	1.60	1.88	2.41	2.41	4.33	2.15	12.20	4.12	4.65	0.57	2.50	1.09	39.11
Columbus	632	1.17	2.00	2.73	0.21	1.97	3.51	8.33	3.50	4.57	1.09	3.47	1.05	33.60
Connersville	844	1.37	1.60	3.09	1.27	3.35	4.05	7.31	4.61	4.99	1.05	4.90	1.63	39.22
Delphi	668	0.79	1.72	1.98	2.62	4.57	2.99	7.61	6.61	4.82	0.69	2.52	0.79	37.71
Edwardsville	901	1.21	2.77	4.73	0.45	4.59	5.64	7.72	3.97	2.13	1.78	4.56	1.99	41.54
*Evansville	383	0.57	1.71	3.51	1.65	5.39	6.62	5.53	2.98	5.22	2.71	3.10	0.90	39.89
Farmland	1,101	1.26	1.90	2.89	2.20	4.49	4.54	11.83	8.62	6.19	[c]0.66	2.30	1.66	48.54
Franklin	740	1.70	2.83	3.04	0.97	2.23	.....	.....	.....	4.24	1.40	3.76	1.13	.....
Greencastle	860	0.86	2.21	2.50	1.06	5.19	5.74	6.68	4.86	5.30	1.34	5.04	1.14	41.92
Greensburg	954	.....	.....	.....	.....	3.75	2.94	5.00	.....	6.36	.....	4.13	1.68	.....
Hammond	598	2.68	3.40	3.69	3.92	3.95	2.82	6.48	5.78	5.04	1.11	3.27	0.42	42.56
Huntington	741	1.73	1.75	3.02	2.82	6.56	3.95	11.08	8.96	4.97	1.19	3.05	1.65	50.73
*Indianapolis	766	1.60	2.47	3.08	1.27	3.56	3.09	5.72	3.91	8.17	1.65	4.19	1.13	39.84
Jasper	450	0.70	2.00	5.15	0.53	6.52	4.81	4.00	1.47	6.50	1.55	1.85	1.00	36.08
Jeffersonville	455	0.90	2.89	4.63	0.24	4.37	4.88	10.75	6.12	4.19	1.94	5.35	2.21	48.47
Knightstown	.....	.....	.....	.....	1.66	4.56	4.58	5.75	5.87	5.46	0.94	4.12	1.42	.....
Kokomo	840	0.99	1.85	2.17	3.22	4.90	2.08	9.17	5.55	3.83	0.87	2.96	1.32	38.91
Laconia	.....	1.65	.....	.....	.....	.....	4.05	6.80	0.95	.....	1.65	.....	1.10	.....
Lafayette	661	0.83	1.64	1.55	2.65	4.71	4.13	10.73	4.03	5.13	0.37	2.10	0.78	38.65
Logansport	620	1.02	0.73	1.78	2.80	4.23	3.74	7.04	4.05	5.15	0.60	1.19	0.58	32.91
Madison	460	1.44	2.33	4.26	0.28	5.63	6.81	7.65	3.33	5.66	1.54	4.27	1.42	44.62
Marengo	363	2.30	4.40	4.92	0.30	5.89	5.31	4.64	.....	3.58	2.06	3.76	1.36	.....
Marion	814	1.59	1.91	2.83	3.11	3.64	3.77	6.19	8.86	4.85	1.25	2.83	1.54	42.37
Mauzy	980	1.49	2.39	3.15	1.02	3.52	4.26	7.69	4.68	4.94	1.00	4.20	1.43	39.77
*Mount Vernon	410	1.06	1.52	3.46	2.59	6.24	3.73	2.88	1.49	2.97	2.53	2.85	0.77	32.09
Northfield	.....	.....	.....	2.38	1.73	3.50	4.04	8.06	4.33	5.12	1.39	3.28	1.26	.....
Princeton	481	1.19	2.60	5.85	2.35	8.55	5.20	4.00	4.11	3.61	2.00	3.90	0.50	43.86
Richmond	972	.....	.....	.....	.....	.....	.....	6.72	10.88	5.93	0.99	3.43	1.88	.....
Rockville	722	0.85	1.72	1.71	1.58	4.65	5.59	8.35	3.91	5.10	1.07	3.58	0.77	38.88
*Rushville	964	1.37	1.79	3.29	0.92	4.71	5.79	.....	.....	.....	.....	.....	.....	.....
Scottsburg	570	0.81	2.05	3.45	0.10	6.51	7.59	4.66	3.21	4.88	.....	4.04	1.07	.....
Seymour	610	0.92	3.33	3.26	0.25	3.59	5.78	4.61	4.55	5.10	1.57	3.78	1.63	.....
South Bend	726	1.04	1.77	2.28	2.35	3.01	3.81	7.45	4.79	4.92	0.98	2.69	0.37	35.46
Sunman	1,018	1.30	2.28	3.87	0.55	3.37	6.02	7.47	3.07	6.15	1.47	3.83	1.99	41.37
Syracuse	864	1.35	1.55	.....	2.51	3.43	2.04	8.83	5.19	4.54	0.59	2.49	0.85	.....
*Terre Haute	498	0.75	2.15	2.19	1.41	3.41	5.19	7.29	4.07	4.73	0.87	4.08	1.13	37.27
Tipton	860	0.90	[b]1.80	2.46	.....	.....	3.53	11.99	5.85	4.09	0.22	[c]4.18	1.63	.....
Topeka	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.89	1.86	0.76	.....
Valparaiso	737	1.15	2.75	2.45	3.34	6.42	4.34	7.56	6.40	4.95	1.17	3.34	0.44	44.31
Vevay	525	1.45	2.30	4.50	0.22	6.27	4.60	7.50	4.20	4.35	1.37	4.05	1.25	42.06
Vincennes	431	0.55	2.84	3.81	0.59	4.84	5.65	5.44	2.60	4.58	1.58	4.56	0.38	37.37
Warsaw	826	.....	.....	.....	.....	.....	.....	.....	8.26	4.32	0.13	2.84	1.86	.....
Washington	484	.....	.....	.....	.....	.....	6.38	3.33	2.71	5.00	1.94	2.18	0.64	.....
Worthington	540	1.05	2.64	2.45	0.61	4.09	6.00	7.43	4.84	3.94	1.59	5.44	0.87	40.95
Indian Territory.														
*Eufaula	610	0.25	1.75	0.85	3.43	7.76	1.96	1.34	3.23	2.21	2.70	2.70	0.23	28.41
Healdton	.....	2.15	1.31	1.80	1.32	0.83	1.60	3.24	1.41	0.97	1.54	1.72	2.67	20.75
Kemp	.....	2.54	3.62	1.50	1.31	2.08	0.67	0.95	1.50	1.56	.....	.....	.....	.....
Lehigh	936	1.32	1.51	1.13	2.94	1.87	2.17	1.66	2.43	1.55	2.50	2.56	0.79	22.43
Purcell	.....	1.45	0.90	1.24	0.78	8.74	2.27	[k]1.65	2.75	2.73	1.92	5.50	.....	.....
South McAlester	698	1.15	2.00	1.50	1.50	.....	2.25	.....	.....	.....	.....	[c]2.05	.....	.....
Tahlequah	.....	1.64	2.33	1.23	2.36	5.36	[h]2.80	0.35	[1.00]	[f]1.87	3.43	2.86	1.12	[26.35]
*Tulsa	700	0.50	0.30	1.30	1.60	5.90	4.10	0.60	0.00	1.50	4.60	2.50	0.90	23.80
Vinita	.....	0.56	1.37	2.45	1.49	10.51	.....	.....	.....	.....	.....	.....	.....	.....

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Iowa.	*Feet.*													
Adair	1,415					5.49	2.63	7.69	6.83	4.23	2.70	1.26	0.72	
Afton	1,212	0.50	1.09	2.84	3.67	6.85	3.00	9.10	7.15	4.94	3.93	1.06	0.53	44.16
Algona	1,213	0.16	0.31	1.15	6.46	6.07	3.75	1.94	2.64	2.31	2.92	3.25	1.29	32.25
Alta	1,513	0.42	0.26	0.58	8.15	7.99	5.40	5.74	1.71	2.55	2.78	2.97	0.46	39.01
Ansana		0.52	0.72	0.57	5.26	7.55	2.05	10.20	3.52	2.32	2.95	1.59	0.45	37.70
Ames	926	0.44	0.25	1.12	4.29	6.18	2.06	9.96	2.24	4.10	2.44	1.21	0.37	34.66
Atlantic	1,164	0.56	0.39	2.05	3.59	6.52	7.89	7.14	3.07	3.23	4.26	1.54	1.23	41.47
Atlantic (near)	1,650				3.02	6.72	2.61	7.48	2.75			0.16	0.52	
Audubon	1,301	0.41	0.40	2.03	7.32	7.66	2.60	7.20	3.85	5.59	3.07	2.61	0.99	43.73
Belknap	877	0.90	1.62	0.91	3.55	5.91	1.19	8.15	5.06	5.62	3.00	1.56	0.40	37.87
Belle Plaine	828	0.63	1.23	0.75	4.81	4.01	2.03	8.13	2.26	2.37	3.35	2.64	0.31	32.52
Bonaparte		1.38	1.34	0.93	3.31	7.54	2.30	6.63	2.40	7.09	2.26	0.72	1.10	37.09
Carroll	1,265	0.55	0.47	1.79	6.43	9.8[illegible]	2.32	7.16	3.65	4.31	3.19	1.78	0.31	41.83
Cedarfalls	854	0.50	0.45	0.50	7.20	6.24	3.23	6.76	2.39	4.90	2.94	2.70	0.10	37.91
Cedar Rapids	733	0.27	0.48	0.50	5.23	3.99	1.91	6.59	2.40	3.18	2.76	1.61	0.85	29.77
Centerville	1,013		3.43			7.71	2.36	10.40	12.25	8.06	2.90			
Chariton	1,042	0.62	1.05	0.96	3.13	7.36	2.42	9.06	7.03	3.76	3.25	0.78	0.65	40.07
Charles City	1,005	0.60	0.39	1.53	6.55	7.34	6.23	2.14	2.67	3.80	3.23	1.62	0.65	36.75
Clarinda	1,009	0.55	0.34	2.27	3.72	7.48	2.12	6.63	2.86	2.56	3.30	0.94	0.96	33.73
Clinton	593	1.16	1.92	0.95	4.33	4.90	3.10	7.13	2.36	4.30	1.68	0.72	0.82	33.37
College Springs		0.42	0.07	1.92	4.13	7.89	2.00	7.10	3.28	2.78	3.11	0.84	1.25	34.79
Corning	1,117	0.57	0.30	1.99	2.84	6.27	3.07	8.34	5.36	3.06	3.44	0.80	0.91	36.95
Council Bluffs	990					11.15	1.72	5.19	5.80	3.16	4.19	2.46	0.44	
Cresco	1,300	0.49	0.14	1.07	5.09	6.74	4.27	3.26	2.62	4.83	2.36	2.53	0.67	34.07
*Davenport	613	0.89	1.45	0.84	3.41	4.03	2.28	5.68	3.12	3.98	1.67	0.68	0.65	28.68
Decorah	875	0.65		0.62	5.57	3.90	5.71	1.82	1.84	4.11	3.20	2.71	0.67	
Delaware	1,083	0.69	0.62	0.75	4.81	9.57	3.00	7.64	2.24	6.19	2.55	1.93	0.94	40.93
Denison	1,160	T.	T.	1.85	6.79	8.16	2.08	6.01	2.72	3.90	2.47	2.42	T.	36.40
*Des Moines	869	0.60	0.79	1.24	3.47	6.50	2.69	8.15	5.49	3.61	2.69	1.01	0.85	37.09
Dows	1,142	0.84	0.35	1.00	7.21	7.61	5.48	4.98	2.53	4.56	3.28	2.19	0.89	40.42
*Dubuque	698	0.75	1.93	0.76	7.80	7.63	3.11	7.72	2.05	5.67	2.56	1.60	0.71	42.29
Eldora	1,070					6.73	3.13	9.16	2.52	4.69	3.60	3.35	0.30	
Elkader	600	0.73	0.44	0.84	5.06	5.58	2.77	4.96	1.90	5.08	2.78	2.12	0.65	32.91
Emmetsburg		0.12	0.05	1.15	6.09				3.83	2.40	2.78	4.45	0.30	
Estherville	1,298	0.40	0.07	1.82	6.13	4.53	1.98							
Fairfield	780	0.63	2.15	0.85	4.60	7.42	1.08	5.43	7.48	5.33	2.66	0.74	0.74	39.11
Fayette		0.70	0.31	1.45	5.27	5.81	2.46	4.98	1.91	4.36	3.45	2.79	1.01	34.50
Fonda							3.08	6.35					0.44	
Forest City	1,226	0.20	0.30	1.00	4.63	6.64	5.97	1.99	2.04	2.88	3.46	2.58	1.07	32.76
Fort Madison	522	1.25	1.56	1.52	3.57	6.29	2.48	7.62	2.60	7.43	1.51	0.83	1.00	37.66
Gaiva	1,290	0.33	0.10	0.55	6.36	7.44	3.42	7.38	1.30	3.46	2.04	2.98	0.17	35.53
Gardengrove		0.57	0.93	0.90	3.64	8.62	2.07	9.69	4.38	4.51	2.66	1.62	0.48	40.07
Glenwood	957	0.55	0.40	1.76	3.29	10.03	2.21	6.87	2.01	3.15	2.83	1.56	0.42	35.08
Grand Meadow	1,180	0.60	0.38	1.66	6.32	8.02	5.11	4.50	2.98	3.91	3.35	2.73	0.78	40.34
Greenfield		0.76	0.70	2.06	3.21	7.48	3.52	11.93	4.86	4.68	3.41	1.22	0.91	44.74
Grinnell	1,023	0.08	0.85	0.55	8.62	9.03					3.30	1.77	0.32	
Grundy Center	976	0.22	0.25	0.28	*7.27	4.48	3.38	10.10	2.85	4.93	3.13	1.34	0.31	38.54
Guthrie Center	1,077	[illegible]0.10	0.35	1.77	4.60	7.74	1.50	8.66	4.95	3.93	2.39			
Hampton	1,000	0.32	0.41	1.06	6.65	5.72	3.60	4.80	3.17	4.42	4.39	2.61	0.80	37.95
Hawkeye		1.00	0.66	1.65	5.00	6.60	5.14	3.32	2.89	4.27	3.63			
Hopeville		0.61	0.76	1.09	3.30	7.36	2.22	10.44	5.97	4.99	3.67	1.00	0.40	41.81
Humboldt	1,095	0.27	0.29	0.88	5.55	8.80	2.39	6.14	1.61	4.66	3.08	2.15	0.45	36.27
Independence	921	0.56	0.59	0.60	5.88	4.24	3.25	7.67	2.15	[illegible]3.50	3.51	1.82	0.49	34.26
Indianola	969	0.22	0.44	0.54	2.69	5.49	2.85	7.81	7.10	5.40	3.09		0.60	
Iowa City	685	0.70	1.51	0.92	5.14	4.10	1.86	7.04	2.44	1.82	2.74	1.16	0.55	29.98
Iowa Falls	1,107	0.34	0.68	0.56	7.09	7.76	5.97	5.98	2.77	5.43	3.20	2.15	0.56	42.49
*Keokuk	613	0.85	1.23	0.88	2.85	4.40	2.18	8.01	3.90	9.44	1.71	1.01	0.81	36.77
Keosauqua	664	0.30	0.69	0.16	3.17	7.52	1.93	5.64	3.43	9.04	2.56	0.72		
Knoxville	910	0.30	0.40	0.44	4.91	4.27	3.04	9.76	9.18	4.62	5.05	1.05	0.52	43.54
Lansing	632						[illegible]4.97	1.64	3.07	4.04	2.45	3.20	0.45	
Larchwood	1,465									4.98	3.85	3.00	0.14	
Larrabee		0.28	0.40	0.47	6.91	6.49	3.36	6.89	1.47	2.16	3.40	3.20	0.47	35.50
*Leclaire	576	0.91	1.26	0.95	3.50	4.01	2.27	4.15	3.42	3.15	2.01	0.75	0.33	26.71
Lemars	1,224			0.46	6.69	8.64	2.67	4.50	0.96	2.15	3.69	3.20	0.06	
Lenox	1,250	0.75	0.58	2.37	3.30	8.45	2.59	6.05	5.41	2.91	3.89	1.01	0.61	37.92
Logan	928	0.64	0.60	0.60	7.17	7.93	7.85	6.70	2.33	4.05	2.81	2.14		
Madrid		0.35	0.65	1.07	5.16	6.31	3.55	9.24	4.33	3.89		0.96	0.57	
Malvern	995	0.45	0.42	2.54	2.87	7.12	3.39	5.10	3.07	3.32	4.33	1.14	0.46	34.21
Maple Valley				0.60	7.77	8.73	3.18		1.40	2.59	2.34	3.12		
Maquoketa	688						2.53	5.73	3.25	4.58		[illegible]1.08	0.58	
Marshall	947	0.15	0.54	0.50	6.82	6.32	1.55	8.32	2.83	4.00	3.59	1.43	0.55	36.60
Mason City	1,130	0.33	0.29	1.92	6.26	7.31	7.64	2.08	[illegible]3.59	3.28	4.22	2.62	0.85	40.19
Maxon	944	0.45	1.52	1.08	4.43	7.46	1.98	8.18	7.30	3.55				
Mechanicsville	899	0.72	1.14	0.60	4.98	3.98	2.09	7.22	2.35	3.18	2.13	2.13	1.57	32.04
Millman	830			1.13	3.37	5.92	3.37	9.24	6.54	4.39	3.42	0.90	0.84	
Monticello	925	0.42	0.84	0.53	5.65	4.54	1.91	7.55	1.91	4.11	1.98	1.48	0.67	31.59
Mooar	654					3.86	1.44	12.67	2.20	9.96	1.80	0.94	0.60	
Mountayr	1,236	0.65	0.95	1.47	2.83	11.79	2.09	2.92	4.95	4.50	3.63	1.39	0.51	36.68
Mount Pleasant	729	0.77	1.70	1.52	5.93	6.55	1.97	6.11	3.99	4.59	2.81	0.89	1.35	38.18
Mount Vernon	847						1.62	6.95	2.95	3.79	2.66	1.40	0.90	
Neola	1,111	0.18		1.39	3.32	9.47		5.48	3.12	3.24	2.90	1.80	0.45	
Newton	952	0.46	0.63	0.62	6.92	7.13	4.93	10.73	4.61	3.40	3.47	1.12	0.89	44.91
*North McGregor	626			0.59	5.92	7.54	4.12	1.91	3.26	3.16	2.13	1.20	0.27	
Northwood	1,222				5.95	6.01	5.44	1.98	3.39	2.36	2.56	4.02	0.90	
Ogden	1,211	0.21	0.52	1.00	4.89	9.66	1.70	8.26	2.60	3.82	2.95	1.70	0.47	37.87
Osage	1,184	0.34	0.13	1.13	5.68	6.67	4.70	1.78	4.22	3.48	3.76	3.31	0.83	36.03
Osceola	1,132					6.54	3.26	10.60	5.56	5.03	4.52	1.29	0.50	
Oskaloosa	843	0.50	1.21	0.77	3.63	5.51	1.84	10.31	4.57	2.29	3.90	1.09	0.29	35.21
Ottumwa	649	1.15	2.40	3.07	5.46	7.52	1.01	9.91	5.33	4.89	3.80	2.11	1.43	48.08
Ovid	992	0.87	1.32	1.27	3.48	7.59	2.53	7.24	5.84	5.06	3.87	1.09	0.72	40.68

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Iowa—Continued.	Feet.													
Panama		0.10	0.23	1.01	8.16	8.06	4.81	8.05	3.82	4.62	3.17	2.55		
Plover	1,426						2.02	5.75	3.68	3.98	2.72	4.19	0.75	
Portsmouth		0.05	0.11	0.96	7.17	8.83	3.03	8.44	2.89	4.10		1.96	0.40	
Primghar	[1]1,800	0.25	0.27	0.61	5.62	5.09	2.50	4.22	1.46	2.11	3.62	2.75	0.18	28.68
Reinbeck	926		0.44	0.40	6.46	6.70	1.22	7.81	2.01	4.24	2.80			
Rock Rapids	1,358	T.	0.05	1.55	4.68	4.11	5.79	1.61	3.06	4.68	3.61	3.35	T.	32.49
Sac City	1,278	0.78	0.54	1.50	4.45	6.75	4.95	6.75	1.85	3.00	4.50	2.60	1.25	38.92
St. Charles	[1]1,070								[c]5.70	2.77	2.74	0.80	0.25	
Seymour	1,079	2.10	1.98	1.00	3.79	7.27	2.57	8.25	8.10	5.10	4.32	1.25	0.55	46.28
Sibley	1,512	0.35	0.33	0.92	5.33	5.42	3.92	3.67	4.28	6.67	3.35	4.15	0.27	38.66
Sidney	[1]700	0.78	0.78	3.99	2.81	7.68	3.53	9.49	4.03	3.16	4.38	1.17	0.64	42.44
Sigourney	768		1.45	0.76	5.16	4.39			4.07	1.90	2.34	1.39	0.60	
*Sioux City	1,165	0.21	0.35	0.50	6.16	6.39	2.94	5.54	0.86	2.09	2.59	2.89	0.25	30.77
Spencer	1,319	[e]0.22	0.04	1.35		5.63	3.48	3.85	2.18	2.73	3.40	4.51	0.36	
Spirit Lake	1,458	0.08	0.09	0.72	4.08	5.00	2.51	1.63	4.26	2.80	3.63	3.65	0.40	28.85
Stuart	1,216					8.00	3.83	9.93				1.67		
Toledo	856	0.25	0.93	0.36	6.26	4.85	1.28	9.04	2.98	3.82	3.25	1.84	0.90	35.76
Villisca	1,050	0.49	0.28	2.21	3.88	6.73	3.01	7.30	5.71	2.89	4.16	0.96	1.24	38.86
Vinton	810	0.60	0.92	0.50	4.43	3.65	0.81	8.21	2.71	4.03	3.13	2.01	0.78	31.78
Washington	769	0.74	0.72	0.83	4.12	5.86	2.23	7.56	3.79	2.94	[b]2.70	0.78		
Waterloo	856	0.51	0.42	0.54	6.65	6.13	2.60	7.93	3.29	4.36	2.86	1.86	0.45	37.60
Waukee	1,039	0.25	0.53	1.20	2.84	6.12	3.20	11.73	2.59	3.58	2.91			
Waverly	948	0.43	0.37	0.42	7.25	6.38	3.94	5.59	2.16	3.37	2.43	2.25	0.27	34.86
Webster City							1.84	7.59	1.56	5.07	3.49	1.73	0.46	
Westbend	1,197	0.25	0.40	1.27	5.52	5.01	2.46	4.58	2.76	2.82	2.55	2.95	0.85	31.42
Wilton Junction	683	0.75	1.13	1.37	5.19	4.94	2.76	7.67	3.66	4.04	2.17	1.06	0.73	35.47
Winterset	1,129	0.60	0.70	1.20	3.28	8.43	5.73	11.37	6.08	5.00	3.89	1.19	0.73	48.20
Kansas.														
Abilene	1,157	1.33	0.25	0.70	6.52	5.54	9.04	8.44	1.58	5.43	2.25	1.12	0.15	42.35
Achilles		0.39	0.10	0.72	5.28	1.77	4.29	0.94	1.73	2.05	1.75	0.15	0.52	19.69
Altoona		0.48	0.34	1.81	2.22	5.47	3.05	5.70	1.15	4.63	3.53	1.75	0.69	30.82
Anthony	1,329										2.31	0.70	0.60	
Assaria	1,286		0.04	0.64	3.94	6.01	8.38	5.60	0.95	1.40	2.41	0.82	T.	
Atchison	797	0.86	0.74	0.82	2.56	8.43	1.84	6.98	4.16	3.92	3.61	1.09	0.87	35.88
Augusta	1,331	0.59	0.35	1.03	2.30	5.31	7.99	6.03	0.54	4.45	2.03	1.33	0.36	32.31
Baker	1,182	0.57	0.54	0.63	2.71	9.85	1.91	5.39	6.66	6.16				
Beloit	1,383	0.67	0.23	0.66	3.45	6.11	2.94	6.25	3.78	3.25	3.28	0.80	0.15	31.57
Blaine	1,504	0.59	0.73	0.88	4.13	7.90	1.30	5.91	8.56	6.88	3.30	1.21	0.33	41.72
Burlington	1,031	0.45	0.31	0.97	6.09	6.59	3.91		3.30	3.96				
Campbell		0.44	0.37	1.05	4.29	9.21	2.65	5.04	7.98	4.73	3.55	1.49	0.34	41.14
Chanute	940					4.70	4.71	3.34						
Colby	3,138	0.46	0.10	0.48	5.11	2.13	5.39	2.00	2.83	1.47	1.62	0.25	0.16	22.00
Coldwater	2,083	1.45	0.00	0.20	3.97	1.41	3.12	5.02	0.30	1.12				
Collyer	2,588	0.25	T.	0.35	7.25	3.00	4.50	1.50	4.00					
Columbus	898	0.63	0.98	1.40	4.21	11.41	7.84	8.50	3.25	4.35	4.31	3.14	1.14	51.16
*Concordia	1,410	0.52	0.30	1.02	2.60	6.46	2.12	9.27	3.09	3.53	2.56	1.78	0.09	33.34
Coolidge	3,341	0.90	0.00	0.20	1.02	1.00	1.05	1.00	0.42	1.70	1.35	0.58	0.42	9.64
Cunningham		0.71	0.12	0.33	1.68	1.27	6.11	5.11	0.08	3.17	2.12	1.61	0.38	22.69
Delphos	1,303						2.94	4.12	1.62	3.25	2.56	1.12	0.25	
*Dodge City	2,504	0.40	T.	0.25	5.50	1.13	1.98	5.41	0.73	1.06	2.45	0.34	0.33	19.87
Downs	1,488	0.91	0.25	1.14	7.10	5.08	3.10	2.65	2.65	4.24	3.11	0.56	0.20	30.99
Dresden	2,731	1.05	0.20	0.90	6.48	2.00	4.42	3.87	3.74	1.80	1.55		0.12	
Eldorado	1,284	0.60	0.30	3.60	4.10	5.10	5.70	6.25	0.52					
Elgin	781			1.35	2.48	5.08	5.21	5.48	0.10	2.65	3.92	2.10	0.27	
Ellinwood	1,782	0.61	0.04	0.57	2.52	2.52	4.11	5.13	1.68	2.57	2.11	0.60	0.27	22.73
Emporia	1,134	0.30	0.40	0.65	6.05	6.20	3.20	3.75	3.50	1.90	3.55	1.50	0.04	31.04
Englewood	1,955	0.57	T.	0.11	1.99	1.59	2.81	4.58	1.30	2.60	1.87	0.34	1.40	19.16
Eureka	1,075	0.49	T.	0.94	2.43	6.83	4.01	7.22	1.71	4.14	4.12	2.20	0.34	34.43
Eureka Ranch		0.68	0.02	0.55	3.69	2.41	4.42	1.81	1.17	1.37	2.05	0.35	0.15	18.67
Fall River	925											1.76	0.49	
Fort Riley	1,074	0.26	0.46	0.33	5.54	7.11	4.72	7.46	2.60	5.75	1.45	T.	2.60	38.28
Fort Scott	800	0.60	1.03	0.72	4.97	12.67	3.42	3.33	3.89	4.25	1.79	1.67	0.86	39.20
Frankfort	1,146	0.73	0.64	1.10	2.73	10.38	2.15	8.66	8.10	4.39	3.90	1.25	0.42	44.45
Garden City		0.44	0.00	0.05	3.51	1.95		3.35						
Garfield	2,068	0.33	T.	0.14	3.83	1.34	4.89	5.88	1.08	1.80	2.46	0.28	0.10	22.13
Gibson					4.42	1.57	6.06	2.86	3.78	1.00	3.18	0.10	T.	
Girard	993	0.41	0.73	1.57	3.98		3.09	5.34	1.25	4.13	2.36	2.00		
Goodland	3,687	0.35	T.	0.65	2.38						1.55	0.40	0.60	
Gove		0.78	0.00	0.45	4.08	2.80	4.31	3.03	1.61	4.15	2.00	0.20	0.12	23.53
Grainfield		T.	T.	0.20	4.22	2.92	6.41	4.55	4.15	3.50	2.10	T.	T.	28.45
Greensburg	2,235	1.01		T.	4.19									
Grenola	1,116	0.35	T.	0.90	1.65	1.75	5.30	5.50	0.10	3.10	4.45	2.25	0.35	25.70
Halstead	1,388	0.48	[d]0.26	1.16	3.46	2.40	6.31	4.73	0.96	3.17	5.62	1.54	0.46	30.55
Hays	1,993	0.50	T.	0.45	4.56	3.01	6.19	1.64	1.95	4.90	3.85	0.35	0.30	27.70
Horton	1,188	0.73	0.75	0.68	2.13	10.51	1.62	5.61	6.47	5.28	2.80	0.62	0.70	37.99
Hutchinson	1,529	0.72	0.34	1.15	2.97	2.06	6.51	6.72	0.85	6.44	4.45	1.70	0.53	34.44
Independence	816	0.43	0.57	1.84	2.41	7.20	3.46	6.47	0.57	3.47	4.35	1.35	0.63	32.75
Jaqua		[c]0.39	[f]0.04	0.63		[b]1.15	4.06	2.24						
Lakin	2,991							1.70	0.60	0.80	0.60	T.	0.40	
Lawrence	829	0.90	0.53	0.62	3.66	7.12	3.92	6.15	3.96	3.46	2.76	1.30	0.47	34.85
Lebo		0.72	0.32	0.98	5.41	7.11	3.89	5.06	2.91	3.66	4.45	1.88	0.43	36.82
Linn	1,470							4.92	6.84	3.76				
Lyons	1,694	0.57	0.26	0.72	3.52	6.58	8.92	4.26		1.60	3.17			
Macksville		0.90	T.	T.	2.50	2.26	4.18	7.42	1.00	3.37	2.04	0.75		
McPherson	1,495	0.59	0.25	0.51	2.57	2.77	8.38	5.80	2.24	3.57	3.99	1.10	0.62	32.48
Manhattan[2]	1,014	0.31	0.56	0.87	5.49	7.41	2.63	5.39	2.26	5.06	5.13	0.91	0.26	36.28
Manhattan[3]	1,014		0.65	0.85	5.27	7.78	3.69	5.43	2.57	4.84	4.90	0.71	T.	
Marion	1,365	1.00	0.70	1.05	5.10	5.20	7.47	1.95	2.07	1.92	3.70	0.95	0.39	31.50

[1] Estimated. [2] C. M. Breese. [3] C. P. Blachley.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Kansas—Continued.														
	Feet.													
Meade	2,502	0.69	0.00	0.05	2.12	1.10	2.19	2.53	2.03	0.77	3.63	0.40	0.60	16.11
Medicine Lodge	.....	0.85	0.28	0.78	2.09	3.98	6.07	5.47	0.34	2.17	2.35	1.33	0.55	26.26
Minneapolis	1,259	0.34	0.10	0.61	3.48	5.97	3.39	6.06	2.29	4.83	2.98	0.96	0.12	31.13
Morantown	.....	0.34	0.45	1.16	4.49	4.89	2.80	4.39	3.99	5.10	2.71	1.35	0.64	32.31
Morland	.....	0.30	.....	0.62	3.95	.....	.....	3.02	5.70	3.20	.....	.....	0.00	.....
Morton	772	0.45	T.	0.10	1.61	0.70	1.64	0.90	0.22	2.01	0.75	0.24	0.68	9.30
Mounthope	.....	0.46	0.30	1.26	2.68	2.20	5.17	6.01	[1]0.76	4.07	4.61	0.50	0.37	28.39
Ness City	.....	0.65	[b]T.	0.38	4.07	1.65	3.94	4.22	1.79	1.08	2.15	.....	.....	.....
New England Ranch	.....	0.58	0.04	0.06	4.74	3.81	4.50	4.99	.....	.....	[1]2.00	.....	.....	.....
Norton	2,284	0.45	T.	0.70	6.71	2.92	3.74	1.39	3.40	1.85	2.00	.....	0.00	.....
Norwich	1,496	0.62	0.20	1.62	2.19	2.48	7.25	4.83	1.45	2.71	2.40	0.90	0.55	27.40
Oberlin	2,539	0.40	0.20	0.90	6.01	4.47	5.96	2.82	2.88	1.60	1.75	0.50	0.10	25.49
Olathe	1,054	1.28	0.75	1.90	5.26	7.34	2.66	5.86	7.30	3.18	2.98	1.50	0.32	40.33
Osage City	.....	.....	.....	.....	.....	.....	2.61	5.58	4.00	3.13	3.12	1.45	0.22	.....
Oswego	899	0.65	[c]0.67	1.31	3.31	7.00	5.86	5.96	2.47	3.11	4.02	2.33	1.17	37.86
Ottawa	975	0.35	0.26	1.19	3.93	6.68	2.44	4.82	5.43	2.78	2.93	1.70	0.48	32.97
Paola	865	0.35	0.20	0.60	5.70	9.20	1.50	4.00	4.05	4.20	3.15	1.55	1.20	35.70
Phillipsburg	1,939	1.23	0.20	1.00	4.55	3.99	5.02	5.68	5.10	2.88	1.64	T.	0.62	31.91
Pleasant Dale	.....	0.84	0.01	0.85	3.96	3.34	4.87	3.51	2.73	2.02	4.48	0.28	0.12	27.01
Powhattan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.49	0.90	0.90	.....
Pratt	1,905	0.61	T.	0.57	2.58	1.35	4.71	5.58	0.40	2.40	1.90	0.70	0.40	21.20
Rome	1,218	1.12	0.32	1.04	2.72	3.34	6.06	4.93	0.67	3.68	3.53	1.08	0.70	29.19
Russell	1,834	0.73	0.05	0.64	7.77	3.87	7.32	3.44	.....	.....	4.10	0.47	0.28	.....
Salina	1,227	0.40	0.18	0.87	5.39	5.41	9.97	6.16	2.08	3.07	3.01	1.13	0.27	37.94
Scott City	.....	0.65	T.	0.58	2.90	1.70	4.29	3.07	2.66	1.81	[1]1.43	[d]T.	0.30	19.39
Sedan	834	0.54	0.25	1.55	1.98	5.51	5.84	4.54	0.72	3.48	3.67	2.12	0.68	30.88
Sharon Springs	.....	0.25	T.	0.75	3.00	T.	2.25	2.12	2.50	1.25	1.00	T.	0.75	13.87
Topeka	998	0.41	0.60	0.62	4.00	9.30	3.19	5.54	5.60	2.61	3.34	1.04	0.31	36.56
Tribune	926	0.50	0.00	0.50	3.75	0.25	2.15	0.90	[1]2.30	.....	.....	.....	.....	.....
Ulysses	.....	0.60	T.	0.20	2.13	0.80	0.86	0.83	0.90	1.12	0.68	T.	0.30	8.42
Wakefield	1,154	0.26	0.41	1.19	7.50	12.01	5.56	10.95	2.03	6.36	2.93	0.72	.....	.....
Wallace	3,303	0.16	T.	0.32	3.37	0.39	1.10	4.48	2.00	1.06	0.93	0.07	0.38	14.26
Wamego	1,002	0.40	0.72	0.65	4.04	9.66	2.54	5.98	6.79	4.11	4.38	0.60	0.29	40.16
Wellington	1,221	0.49	0.34	1.06	3.18	3.59	8.72	4.04	2.39	3.11	3.18	1.21	0.62	31.93
White Rock	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.97	3.89	1.51	T.	.....
Wichita	1,351	0.62	0.37	1.58	3.26	3.02	7.10	3.40	0.31	3.08	2.27	1.42	0.63	27.06
Winfield	1,124	0.78	0.25	1.17	2.44	3.45	6.15	3.63	0.07	3.27	3.05	1.85	0.50	26.61
Winona	.....	1.00	T.	0.35	4.70	1.25	2.58	2.50	2.50	1.75	1.10	T.	0.50	18.23
Yates Center	1,112	0.57	0.51	1.04	2.55	8.05	2.21	5.71	1.56	3.96	4.17	1.71	0.65	34.69
Kentucky.														
Alpha	.....	0.86	3.95	8.69	1.69	5.13	6.01	10.25	2.38	5.22	0.37	6.82	1.60	52.97
Anchorage	686	0.75	3.31	4.62	0.17	4.29	5.56	.....	[c]3.29	.....	.....	.....	.....	.....
Bardstown	637	.....	.....	.....	.....	.....	.....	5.48	1.93	2.83	0.54	5.40	2.97	.....
Blandville	445	1.70	2.30	5.10	1.79	8.76	11.22	4.11	2.31	3.27	2.71	5.55	0.88	49.70
Bowling Green [1]	469	1.15	3.32	7.28	3.77	5.75	4.09	7.96	1.31	4.02	1.27	6.43	1.88	48.23
Bowling Green [2]	469	1.40	3.26	6.92	3.67	5.71	3.94	8.21	1.48	3.82	1.32	5.42	1.70	46.85
*Burnside	773	1.05	3.67	7.80	1.62	2.47	4.73	8.05	1.90	2.20	0.98	5.04	1.25	40.76
Caddo	.....	1.30	1.80	4.13	1.60	4.30	7.80	7.85	5.00	4.83	2.61	6.98	1.56	49.76
Canton	.....	2.51	3.43	6.94	1.65	8.35	3.23	2.91	3.61	2.32	2.72	5.12	2.61	45.40
Carrollton	472	1.16	2.58	3.94	0.44	6.48	5.30	5.06	2.82	4.62	1.65	3.90	2.10	40.05
*Catlettsburg	544	1.79	3.54	4.90	1.53	3.32	5.97	6.60	2.86	4.75	2.95	4.27	1.38	43.86
Earlington	370	1.33	2.33	4.69	2.89	11.47	4.74	5.06	1.71	5.45	2.53	6.56	1.76	50.52
Edmonton	.....	0.81	3.87	7.56	2.52	5.24	3.48	8.27	3.21	3.28	0.74	5.12	1.63	45.73
Eubank	1,177	.....	4.08	[c]8.09	0.94	2.97	4.16	[c]6.12	5.34	4.30	0.71	5.16	1.55	.....
*Falmouth	530	1.32	1.97	4.18	0.34	3.05	6.82	6.35	2.68	3.73	2.28	5.49	1.38	39.59
Fords Ferry	.....	1.27	1.32	3.68	3.49	11.78	2.02	4.84	1.07	6.17	3.50	4.14	1.55	44.83
Frankfort	560	1.35	1.99	6.35	0.69	4.09	4.44	10.28	3.26	5.01	1.10	5.24	2.93	46.73
Franklin	591	1.24	4.45	9.66	2.00	6.52	3.52	9.35	2.83	3.54	0.71	6.02	2.11	51.95
Greendale	947	1.42	2.93	8.42	1.01	3.10	5.23	9.06	2.67	3.76	1.28	.....	.....	.....
Greenburg	581	0.70	3.86	6.90	1.25	4.30	8.47	9.32	1.85	3.60	0.99	4.71	1.64	47.59
Harrods Creek	410	0.71	.....	3.95	.....	4.43	.....	12.85	2.75	3.90	.....	.....	.....	.....
Henderson	382	1.15	1.91	.....	0.80	6.19	4.40	4.49	2.44	4.12	2.67	3.49	1.21	.....
Hopkinsville	521	.....	.....	.....	.....	.....	4.31	6.48	3.14	3.40	1.76	6.06	1.32	.....
Leitchfield	635	1.31	3.35	5.47	0.78	6.41	2.87	6.58	1.25	3.54	1.41	5.47	3.06	41.50
*Lexington	989	1.25	3.15	5.41	0.40	3.20	3.74	10.39	3.37	4.25	1.27	4.30	2.56	43.29
Lola	.....	0.92	1.64	.....	.....	.....	.....	.....	0.30	2.65	.....	.....	.....	.....
*Louisa	526	1.29	4.20	4.82	2.01	3.51	5.07	5.84	6.44	3.72	2.93	4.07	1.27	45.17
*Louisville	525	0.82	3.16	4.86	0.25	4.32	4.79	13.01	4.51	4.12	1.61	4.62	2.15	48.22
Lyndon	581	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.36	4.17	2.10	.....
Marrowbone	.....	1.42	3.47	8.81	3.94	4.44	3.46	8.54	2.09	4.88	0.70	5.63	2.12	49.50
Maysville	524	.....	.....	.....	.....	.....	.....	6.43	3.43	3.43	.....	3.62	2.03	.....
Middlesboro	1,000	.....	.....	9.74	1.86	3.00	4.81	10.27	0.86	1.79	1.81	5.56	0.49	.....
Mount Sterling	930	1.64	3.62	5.96	1.92	2.41	4.78	9.20	3.79	2.25	1.91	3.07	1.41	41.96
Munfordville	570	.....	.....	.....	.....	.....	.....	.....	1.05	4.48	.....	.....	1.15	.....
Owensboro	479	.....	.....	.....	.....	.....	.....	6.75	2.45	4.18	2.14	4.83	1.76	.....
Owenton	.....	1.38	2.49	5.11	0.25	5.48	4.82	8.41	2.76	4.46	1.82	6.10	2.35	45.43
*Paducah [3]	341	1.65	2.28	4.88	1.77	8.49	4.72	3.75	2.03	2.87	2.34	5.35	1.73	41.86
Paducah [4]	341	1.68	2.05	4.91	1.82	8.79	4.22	3.51	1.98	2.82	2.34	5.27	2.33	41.72
Pilot Oak	411	.....	2.43	7.41	1.76	8.21	[1]3.88	5.52	.....	1.86	1.45	.....	.....	.....
Pleasure Ridge Park	447	0.88	3.55	4.40	0.13	4.75	4.66	9.58	2.55	3.75	1.96	4.93	2.33	43.47
Princeton	455	1.03	.....	.....	1.74	11.10	5.02	2.76	3.78	3.74	2.86	4.98	.....	.....
Richmond	926	.....	2.60	5.70	.....	1.65	.....	.....	.....	3.14	1.12	3.03	1.22	.....
Russellville	534	1.40	3.43	7.35	2.04	7.90	2.82	5.32	1.81	4.80	1.38	6.84	1.20	46.89
St. John	760	.....	.....	4.92	0.43	5.04	3.10	5.00	1.25	3.60	1.48	4.68	3.02	.....
Sandyhook	.....	0.62	4.25	6.69	6.82	2.16	5.00	10.89	6.40	3.00	2.70	3.97	1.50	54.00
Shelby City	969	0.15	2.92	6.06	0.53	3.77	3.63	10.92	2.06	.....	.....	.....	.....	.....
Shelbyville	690	0.91	2.58	4.03	0.38	5.60	4.26	12.32	2.69	3.42	2.01	5.23	3.11	46.54
Southfork	981	1.32	4.29	6.06	1.46	3.17	4.31	9.33	4.65	2.96	1.59	4.42	3.36	47.52

[1] J. E. Youngclove. [2] M. H. Crump. [3] River observer. [4] W. Bornemann.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Kentucky—Continued.														
	Feet.													
Springfield	738	1.44	4.11	5.41	0.65	4.92	2.40	7.88	1.29	.....	.....	.....	.....	.....
Vanceburg	.....	.....	.....	.....	.....	2.41	3.15	5.70	6.00	3.15	2.40	3.15	1.07	.....
*Williamsburg	939	1.33	4.22	9.90	1.78	4.48	6.11	9.23	5.20	4.50	0.93	4.80	0.95	53.43
Louisiana.														
Abbeville	.....	1.95	5.15	4.45	5.25	2.65	6.35	4.00	4.05	0.46	3.95	4.91	2.65	45.82
*Alexandria	77	4.80	14.11	3.64	3.48	2.21	2.02	2.22	2.24	3.66	4.60	5.68	1.81	50.47
*Amite	130	2.59	4.40	8.01	2.86	2.43	8.20	5.46	3.08	4.42	4.30	6.89	1.50	54.14
Bastrop	130	3.47	6.67	4.21	2.82	2.12	.....	T.	3.86	2.33	3.30	5.13	0.44	.....
*Baton Rouge	35	1.60	5.12	4.55	4.95	1.18	6.52	2.64	3.95	1.14	7.05	4.26	1.69	44.65
Calhoun	180	3.41	6.27	4.64	2.47	1.53	0.78	0.28	3.07	[b]3.71	5.16	5.61	0.33	37.26
Cameron	.....	3.05	3.99	4.31	1.62	1.01	4.35	7.76	0.85	2.87	1.16	3.70	1.03	35.69
*Cheneyville	67	4.55	9.09	3.54	3.80	2.10	2.36	0.92	2.57	2.35	3.85	6.52	2.01	43.66
Clinton	.....	.....	.....	.....	.....	1.71	5.90	2.64	3.99	4.55	6.48	4.12	1.44	.....
Coushatta	.....	3.81	7.12	4.06	6.55	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Covington	.....	1.54	5.16	.....	0.88	1.92	7.04	3.36	4.05	3.78	4.17	6.53	.....	.....
Davis	9	9.08	9.00	4.16	2.80	1.85	1.31	T.	1.39	3.62	[e]5.12	5.16	0.54	44.03
*Donaldsonville	33	2.13	4.51	4.25	5.18	3.69	9.87	1.17	4.16	2.62	6.25	7.48	1.44	52.75
Emilie	.....	1.75	4.99	4.14	4.12	1.01	12.18	1.83	3.19	4.16	5.37	5.60	3.74	52.08
Farmerville	177	4.88	4.77	4.85	5.00	2.71	0.66	T.	2.91	3.50	[e]6.76	5.92	0.80	42.76
*Franklin	10	2.32	8.40	2.81	2.14	3.75	8.26	4.64	5.44	1.98	2.73	8.42	2.42	53.31
Grand Coteau	93	1.70	4.71	4.85	1.19	3.55	5.76	4.62	1.76	0.85	8.66	3.78	1.35	42.78
Hammond	44	2.44	4.57	6.08	2.08	2.16	8.93	4.92	2.93	3.56	[e]2.36	5.17	2.05	47.25
Houma	.....	.....	3.70	4.50	2.81	.....	5.25	4.20	.....	5.72	4.76	5.63	4.25	.....
Jeanerette	20	2.84	5.44	3.26	8.15	2.95	7.51	4.19	2.26	1.67	.....	.....	2.19	.....
*Lafayette	22	2.70	6.87	4.59	2.78	3.33	6.33	2.07	1.95	1.19	6.82	6.20	1.64	46.47
*Lake Charles	22	2.32	4.70	4.17	1.66	2.10	5.84	4.92	3.37	2.71	3.75	5.00	2.20	42.74
Lake Providence	107	.....	7.50	4.52	.....	1.31	0.31	0.00	1.76	.....	3.19	3.43	.....	.....
Lawrence	.....	2.95	.....	.....	.....	0.75	7.46	1.40	8.41	5.38	2.55	4.37	3.71	.....
Liberty Hill	.....	5.69	[f]5.68	4.98	7.23	1.75	2.35	T.	0.77	4.11	8.90	6.73	1.12	49.31
*Mansfield	321	.....	.....	.....	.....	.....	3.70	0.68	1.60	3.27	6.31	3.30	1.24	.....
Maurepas	3	[g]2.73	4.60	4.14	[h]2.74	0.96	7.98	1.09	1.33	3.12	[e]5.19	7.13	2.24	43.25
*Melville	45	1.16	6.00	9.00	3.10	4.52	4.93	0.90	8.95	1.80	8.30	4.30	2.70	55.66
*Minden	.....	.....	.....	.....	.....	4.22	0.42	0.00	2.39	4.77	8.13	4.49	0.77	.....
*Monroe	82	3.00	6.95	4.51	2.66	1.21	1.34	0.00	2.16	3.08	4.95	5.44	0.51	35.81
*Natchitoches	.....	4.02	7.89	2.98	3.50	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Iberia	15	2.10	5.05	3.50	[h]8.75	1.05	9.45	4.40	.....	2.39	3.95	5.80	2.80	.....
*New Orleans	54	2.33	2.78	5.29	4.84	2.80	8.23	2.92	3.31	5.26	5.33	2.82	3.77	49.68
Oakridge	.....	3.11	7.29	5.27	3.42	1.16	4.24	0.40	0.98	1.47	4.67	6.69	0.54	39.24
Oberlin	.....	4.35	10.70	5.60	2.70	2.40	3.50	.....	1.15	2.10	8.65	5.10	3.55	.....
*Opelousas	83	3.04	6.34	5.15	2.21	3.90	7.61	3.20	5.86	4.30	6.81	4.21	1.30	53.93
Oxford	258	4.02	6.30	4.05	7.28	2.47	1.24	1.11	2.77	3.29	6.43	3.49	0.91	43.36
Paincourtville	.....	2.18	4.32	3.39	4.04	1.90	10.94	1.94	3.22	0.95	5.96	9.03	3.80	51.67
Plain Dealing	268	7.79	4.89	4.96	3.72	3.60	2.44	0.66	3.15	5.07	4.84	1.90	1.08	44.10
*Port Eads	2	1.49	4.09	4.17	1.22	0.20	2.81	2.91	3.49	10.69	8.79	2.87	2.29	45.02
*Rayne	44	1.86	7.32	6.39	1.44	3.95	7.97	3.58	3.14	1.69	4.85	7.61	1.64	51.44
*Robeline	147	.....	.....	.....	.....	.....	0.98	1.13	1.44	3.53	5.84	5.36	1.81	.....
*Ruston	312	4.79	6.33	4.63	5.45	1.63	0.78	.....	.....	3.50	6.50	7.12	0.82	.....
*Schriever	.....	1.45	5.79	3.11	2.54	2.69	10.64	4.02	5.94	3.28	3.55	8.33	1.59	52.93
Shellbeach	.....	4.67	3.76	5.63	1.78	.....	.....	4.89	3.37	1.54	3.89	5.46	2.02	.....
*Shreveport	249	8.11	4.76	3.37	4.90	3.94	1.78	0.78	0.78	3.59	5.64	1.08	0.75	39.48
Southern University	.....	2.90	2.90	4.75	2.10	1.75	8.60	3.66	4.15	4.18	4.50	4.95	4.00	48.44
Sugar Experiment Station	18	2.94	3.28	6.13	2.63	1.65	11.04	4.44	3.29	4.70	7.48	4.71	4.57	56.86
Sugartown	.....	5.39	11.78	4.82	4.53	2.00	.....	0.41	4.24	1.88	1.87	7.36	1.90	.....
Thibodeaux	2	1.94	4.69	2.07	2.45	1.39	7.16	1.82	4.45	1.70	4.55	9.78	3.39	45.39
Venice	.....	1.52	2.30	2.25	1.92	0.14	5.76	5.46	4.15	7.87	5.60	2.13	3.03	42.13
Wallace	15	1.95	5.92	4.64	3.83	0.87	12.84	1.72	3.20	3.52	4.89	5.29	3.92	52.59
West End	.....	2.02	2.79	2.60	2.31	4.89	9.70	1.78	3.99	6.19	5.35	3.70	1.79	47.11
White Sulphur Springs	.....	7.95	12.28	4.43	3.72	1.51	2.40	0.95	1.77	3.73	5.72	6.85	2.63	53.94
Maine.														
Bar Harbor	20	1.47	5.50	6.32	1.19	2.96	2.39	6.05	2.90	6.04	5.85	5.10	2.60	48.37
Belfast	178	0.98	5.01	7.30	1.18	3.03	2.21	5.19	5.02	10.32	3.25	4.25	1.40	49.14
Calais	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.60	4.09	4.16	2.39	.....
Cornish	778	1.50	8.79	9.74	1.25	3.56	2.68	4.20	5.02	7.04	5.48	4.19	1.50	54.95
Cumberland Mills	.....	.....	.....	.....	.....	3.10	2.66	3.42	2.23	8.64	3.21	2.68	1.65	.....
*Eastport	53	0.84	2.77	2.72	0.86	1.00	2.71	4.24	1.07	3.67	6.27	3.69	1.70	31.54
Fairfield	90	0.31	2.95	5.62	1.28	2.33	1.91	3.21	3.83	5.10	2.00	2.35	1.17	32.06
Farmington	368	0.80	5.58	10.83	2.66	.....	2.49	3.75	3.97	4.62	3.88	4.22	1.15	.....
Flagstaff	1,400	1.20	3.92	6.97	1.45	2.75	2.40	4.85	3.14	4.53	3.44	2.80	1.05	38.50
Fort Fairfield	415	.....	.....	4.86	1.78	.....	2.40	4.05	2.53	4.27	3.95	4.60	.....	.....
Gardiner	163	0.87	5.25	7.19	2.02	2.80	1.94	3.18	2.88	7.60	2.64	4.12	1.52	42.01
Indian Stream	.....	.....	3.58	7.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kineo	1,060	0.37	2.51	4.49	2.24	2.46	2.47	4.02	2.00	3.27	3.61	1.95	0.90	30.29
Lewiston	185	1.04	5.82	10.10	1.63	2.37	2.58	3.08	2.98	6.73	3.58	3.79	1.45	45.15
Mayfield	.....	0.94	.....	.....	2.34	3.02	3.13	6.07	4.90	5.31	4.77	5.11	1.24	.....
North Berwick	140	.....	.....	.....	1.50	2.91	.....	.....	.....	.....	5.09	.....	2.79	.....
North Bridgton	450	0.97	8.12	10.70	1.90	2.88	2.09	3.54	3.72	6.26	3.12	5.08	1.67	50.05
Orono	129	.....	2.20	6.95	.....	.....	.....	2.56	4.26	8.00	3.75	4.23	1.90	.....
*Portland	103	2.00	5.27	8.02	1.65	3.21	2.23	3.10	2.57	9.57	3.19	2.45	2.18	45.44
Winslow	.....	0.40	3.40	6.24	1.74	2.52	2.33	3.46	3.59	5.86	2.66	2.89	1.29	36.38
Maryland.														
Annapolis	20	2.70	7.48	4.53	1.25	2.25	3.11	.....	.....	.....	.....	2.41	0.77	.....
Bachmans Valley	.....	1.40	6.19	6.18	1.68	2.67	5.09	4.42	1.85	2.58	2.06	3.70	1.27	39.04

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Maryland—Continued.	*Feet.*													
*Baltimore	142	2.62	7.07	4.70	1.44	1.61	3.94	6.32	1.93	4.14	1.11	3.34	0.37	38.59
Boettcherville	900	1.30	3.10	3.90	1.80	4.90	5.80	6.30	2.60	6.90	1.30	4.30	1.00	43.20
Burkittsville		3.31	[f]4.22	3.20	2.28									
Cambridge		1.19	7.19	3.92	1.07	4.66								
Charlotte Hall	167	1.89	4.87	3.82	1.03	1.16	4.38	2.82	0.94			1.08	0.34	
Cherryfields	20	1.24	4.62	2.86	1.02	6.24	3.39	8.56	0.79	3.47	1.40	2.28	1.40	37.21
Chestertown	80	2.20	6.12	4.91	1.10	3.98	3.73	4.87	2.11	5.37	2.94	1.77	0.86	39.96
Collegepark	170	1.81	5.51	4.61	1.29	2.54	2.00	3.23	1.91	4.15	0.44	2.50	0.28	30.27
Cumberland[1]	650	1.41			1.86	5.09	4.22	5.16	1.71	5.56	1.32	3.68	0.91	
Cumberland[2]	650	1.52	3.01	3.59	1.99	5.17	4.67	4.77	1.64	5.77	1.47	3.63	0.94	38.17
Darlington	300	1.34	5.12	4.86	1.37	2.53	3.40	3.02	1.29	4.85	3.55	4.49	0.34	36.16
Deerpark	2,457	0.90	3.57	4.63	2.04	5.65	4.23	13.65	1.37	5.32	1.37	3.33	2.55	48.61
Denton	42	1.52	6.05	5.99	[d]1.04	2.77	5.33	4.54	[f]1.07				0.83	
Easton	35	1.18	5.96	4.34	1.66	3.55	3.76	2.34	1.53	2.69	1.04	1.90	0.98	30.93
Ellicott City		1.79	5.51	3.33	1.50	1.77	2.90					3.13	0.42	
Fallston	450	1.91	6.35	5.07	1.36	3.20	4.07	4.35	0.95	3.62	2.99	5.60	0.40	39.85
Flintstone			3.13	3.83	1.82	3.19	4.36	4.74	1.73	8.07	0.90	4.05	0.61	
Frederick	250	2.09	6.15	4.04	1.27	1.40	3.83	4.67	0.77	3.08	0.80	3.12	0.59	31.81
Grantsville	2,100	1.81	4.77	5.12	2.98	4.07	5.78	10.17	1.90	5.85	2.61	3.37	2.22	50.65
Great Falls	150	2.23	5.50	3.20	0.49	4.12	3.44	2.95	1.38	3.32	0.43	2.53	0.59	30.18
Greenspring Furnace	500	2.54	3.65	2.36	1.68	1.64	4.40	4.83	0.87	5.02	0.98	2.85	0.57	31.29
Hagerstown	550	2.20	4.58	5.40	1.32	0.87	5.28	6.08	1.80	2.20	0.97	2.54	0.80	34.04
Hancock	474	2.07		4.59	1.52									
Jewell	165	1.33	5.60	4.31	1.18	4.86	4.75	3.75	0.91	3.71	0.38	2.11	3.30	36.19
Laurel				2.60	1.30	3.29	3.15	7.89	3.76	3.93	0.55	2.60	0.20	
Mardela Springs	25	0.95	6.23	3.09	1.54	3.81	1.90	3.15	4.50	6.90	3.47	1.89	1.41	38.84
Mount St. Mary's College	720	0.96	5.16	5.75	1.40		4.00	6.07	1.70	3.16	1.06	4.63	0.56	
Newmarket	550	2.58	5.97	5.91	1.30	1.27	3.57	3.87	1.77	4.10	0.86	3.42	0.50	35.13
Oakland	2,371	2.18	4.29	5.64										
Pocomoke City	37	1.33	6.52	2.29	1.03	2.59	1.72	5.26	3.00	5.71	1.84	2.51		
Princess Anne	20	1.21	6.80	2.18	0.96	2.17	3.03	6.49	3.54	5.77	2.49	2.01	1.27	37.92
Sharpsburg	420	2.70	4.57	3.82	1.30	1.91	5.79	4.16	0.71	4.17	0.87	2.51	0.52	33.03
Solomons	20	1.54	6.44	2.63	1.17	4.44	3.97	4.51	2.45	3.24	1.39	2.10	0.92	34.80
Sunnyside	2,440	1.73	5.45	6.80	2.53	5.92	5.88	15.27	2.90	7.21	3.25	5.29	2.71	64.94
Taneytown	493							4.85	0.59	2.85	1.17	3.20	0.49	
Upper Marlboro		1.86	6.66											
Van Bibber	22	2.05	5.49	5.15	1.03	2.97	3.10	2.45	1.13	4.24	2.42	4.57	0.33	34.93
Western Port	1,000	2.02	2.40	3.32	2.25	3.67	4.77	7.60	1.08	5.46	1.11	2.83	0.67	37.18
Westminster	700	2.07	6.46	4.60	1.16	2.15					T.		0.30	
Woodstock	392	1.76	5.65	6.12	1.20	1.85	2.50		1.25	2.83	1.00	3.40	1.00	
Massachusetts.														
Amherst[3]	267	0.91	4.77	6.52	1.02	2.46	2.46	5.67	3.51	6.17	3.89	2.87	0.87	41.12
Amherst[4]	267	1.07	4.67	6.11	1.32	2.58	2.57	4.96	3.84	5.41	3.23	3.03	0.87	39.66
Andover	85	1.55		4.13	0.73	2.46	2.16	2.47	1.47	5.30	3.86	2.58	2.34	
Ashland	184	2.30	7.02	6.10	1.29	2.32	3.30	2.88	2.05	8.05	3.69	3.12	2.03	44.20
Attleboro	129	1.92	6.18	4.75	0.98	2.74	3.78	1.73	2.84	8.75	3.11	3.57	1.11	41.46
Bedford	129	2.17	5.45	5.63	1.32	2.22	2.44	2.95	2.64	6.73	3.15	3.18	1.77	39.65
Beverly Farms		3.14	6.05	7.01	1.65	2.12	2.67	3.52	2.90	8.09	4.28			
Bluehill (summit)	640	2.71	4.45	5.95	1.32	2.75	3.41	3.56	2.96	10.23	4.47	3.82	1.81	47.44
Bluehill (valley)		2.48	4.44	6.09	1.29	2.87	3.51	2.78	2.60	9.03	4.06	2.96	1.78	44.89
Boston[5]	125	2.03	4.46	4.92	1.14	1.42	2.52	2.07	1.72	7.53	2.98	3.78	1.65	36.22
*Boston	125	2.25	3.94	5.41	1.56	1.68	2.71	2.90	2.15	6.40	3.15	3.70	1.70	37.55
Brockton[6]		1.69	3.68	5.68	1.19	1.79	3.53	1.57	2.14	6.26	2.82	4.09	2.98	36.52
Brockton[7]		2.14	3.80	4.68	0.97	2.21	3.49	1.53	2.03	7.25	2.77	3.92		
Brockton[8]		1.84	4.47	5.68	1.04	2.38	3.60	1.45	2.28	8.09	3.75	4.47	2.06	41.01
Cambridge[9]	74	3.06	4.35	6.27	1.66	2.04	2.15	2.87	2.13	6.18	3.11	3.34	1.57	38.73
Cambridge[10]	74	2.46	5.62	4.37	1.70	2.42	2.33							
Chestnut Hill	124	2.80	5.45	5.53	1.72	1.85	2.98	3.00	2.74	7.16	3.49	3.61	1.89	42.22
Clinton	309	1.88	6.25	3.97	0.80	1.55	1.92	3.25	2.00	6.64	2.82	1.88	1.15	34.11
Cohasset		3.05	4.60	5.86	1.48	2.77	4.44	2.59	2.23	6.19	2.80	6.05	2.35	45.21
Concord	139	1.83	5.04	5.19	1.59	2.26	2.25	3.41	3.10	6.69	3.17	2.59	1.70	38.82
Dudley		1.25	4.50	4.60	0.90	1.80	2.80	5.10	2.55	5.90	2.70	1.60	1.62	35.32
East Templeton		1.62	4.36	6.15	0.25	1.68	1.01	2.99	2.35	4.83	2.75	2.26	1.01	31.26
Fallriver	200	2.32	5.84	5.64	1.20	2.87	4.23	4.42	3.87	8.03	3.31	3.38	2.07	47.18
Fiskdale		1.00	6.32	3.57	0.87	2.08	2.06	2.76	2.01	7.26	3.39	2.34	1.23	34.89
Fitchburg[11]	550	2.37	6.95	5.81	1.05	1.90	2.25	2.57	2.29	6.59	2.92	3.00	1.69	39.39
Fitchburg[12]	550	1.34	6.96	5.32	1.16	1.92	1.92	2.72	2.06	6.32	2.76	3.11	1.46	37.05
Framingham	160	2.43	5.85	5.91	1.85	2.83	3.14	2.14	2.74	7.39	3.84	2.92	2.17	43.21
Groton	333	2.14	5.60	5.85	1.85	2.15	2.29	3.04	2.67	7.30	3.61	2.72	1.81	41.03
Hadley	122				1.74	2.53	2.47	3.45	3.48	5.69	3.58	3.03		
Hingham		2.44	3.94	6.47	1.28	3.48	4.27	2.83	2.14	5.77	3.23	4.61	2.01	43.17
Hobbs Brook		2.33	5.74	3.58	1.48	2.09	2.21	2.12	3.05	6.81	2.74	2.83	1.97	36.95
Hyannis	31	2.48	3.84	6.08	0.84	2.83	3.23	4.35	4.20	5.38	6.02	3.87	3.00	45.62
Lake Cochituate		2.43	6.04	5.86	1.60	2.33	3.04	2.22	2.43	8.19	3.53	3.00	2.15	42.82
Lawrence	51	1.61	5.57	5.36	1.09	2.43	1.49	3.32	2.69	6.92	2.65	2.81	1.74	37.68
Leeds	390	1.99	6.70	11.45	1.87	2.58	2.94	4.72	3.74	6.19	2.97	3.87	1.04	50.06
Leicester Hill	960	1.78	5.97	6.25	0.62	3.92	2.88	4.68	2.44	7.81	4.03	2.13	1.76	44.46
Leominster		1.63	5.89	6.16	1.21	2.16	2.49	3.28	2.70	7.18	3.27	2.95	1.59	40.51
Long Plain		2.35	4.23	5.98	1.07	3.55	5.83	4.88	3.30	8.05	3.37	3.67	3.67	49.33
Lowell	100	2.24	5.80	5.68	1.34	2.92	2.68	3.79	2.76	9.69	3.00	3.02	2.13	44.45
Ludlow Center	299	0.92	2.74	5.23	1.40	2.60	2.45	5.73	1.32	5.27	3.68	2.35	1.35	36.04
Lynn		2.78	5.75	4.97	1.56	2.03	2.17	2.53	2.21	6.08	3.33	3.87	1.22	38.50
Mansfield	169	2.92	6.03	5.16	1.27	2.51	3.71	1.91	2.00	10.85	2.78	4.00	2.76	45.90
Middleboro	53	2.36	5.24	5.39	0.98	2.66	3.62	2.01	2.66	8.17	4.38	3.50	2.47	43.44

[1] W. Bruce.
[2] Howard Shriver.
[3] Miss S. C. Snell.
[4] Agricultural Experiment Station.
[5] Boston waterworks.
[6] H. H. Goss.
[7] Filter beds, Brockton waterworks.
[8] Pumping station, Brockton waterworks.
[9] Harvard College Observatory.
[10] E. C. Brooks.
[11] Dr. J. Fisher.
[12] A. P. Mason.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Massachusetts—Continued.	*Feet.*													
Milton		2.33	4.29	4.88	1.57	2.49	3.68	2.50	1.79	8.42	3.82	3.49	1.34	45.60
Monroe	1,860	1.41	6.51	8.44	1.52	2.22	1.98	5.78	4.02	6.28	3.31	4.73	2.03	48.23
Monson	420	1.79	6.14	5.32	1.75	2.90	3.10	4.85	2.63	6.20	4.01	2.38	1.63	42.10
Mount Nonotuck		0.76	3.95	7.08	1.43	2.70	3.06	4.62	3.20	6.17	3.41	2.85	1.01	40.24
Mount Wachusett		1.40	7.23	5.98	1.35	2.00	2.40	4.70	3.07	6.82	3.34	2.87	1.89	43.05
Mystic Lake		2.77	5.09	5.19	1.99	2.13	2.51	2.45	2.90	7.11	3.37	3.56	1.89	40.96
Mystic Station		2.72	5.08	5.12	2.00	1.85	2.32	2.53	2.81	6.37	3.11	3.62	1.89	39.41
*Nantucket	14	1.57	2.67	5.97	0.62	2.35	2.43	4.12	1.38	2.06	5.03	2.29	2.68	33.17
Natick	170	3.70	8.65	7.91	2.07	2.00	2.98	2.06	2.24	8.13	3.61	3.39	2.16	48.90
New Bedford [1]	88	2.03	4.43	5.97	1.24	3.91	4.98	2.90	3.79	8.87	3.40	2.60	3.61	47.73
New Bedford [2]	88	2.19	4.33	5.82	1.23	3.82	4.82	2.58	3.58	7.76	3.46	2.93	3.63	46.15
North Billerica	125	2.13	4.76	4.94	1.25	1.80	2.05	2.95	2.58	7.75	3.20	3.68	2.30	39.39
Pittsfield	1,038	1.13	5.03	6.63	1.30	1.40	3.40	4.15	3.90	6.70	2.74	2.62	1.41	40.41
Plymouth		2.75	4.73	5.81	0.88	2.93	3.59	2.27	1.74	5.65	3.60	3.41	2.95	40.31
Princeton	956	1.96	4.68	8.60	1.80	2.37	2.56	5.10	2.71	6.94	3.49	2.83	2.27	45.31
Quinapoxet		1.69	7.90	5.50	1.27	2.81	2.64	4.78	3.28	7.00	3.95	3.24	2.31	46.37
Roberts Dam		2.34	5.96	5.47	1.79	2.03	2.68	2.87	2.79	6.81	3.18	3.27	1.58	40.77
Roxbury	20	2.43	.....	5.66	1.65	1.89	2.88	2.60	[6]2.42	7.22	.....	3.74	1.87	.....
Salem		2.71	5.64	4.49	1.70	2.16	2.59	2.73	2.37	6.55	3.29	3.98	1.97	40.18
Salisbury		2.80	5.37	6.12	1.45	2.44	.....	.....	.....	.....	.....	.....	.....	.....
Somerset		2.27	6.07	5.22	1.29	2.79	5.32	2.74	2.60	7.74	2.92	3.21	3.08	45.25
South Clinton		2.12	7.30	4.44	1.89	2.45	2.53	4.83	2.23	7.58	3.95	2.98	2.31	44.61
Springfield Armory	120	0.76	4.45	6.78	0.85	2.57	2.87	5.74	2.58	6.24	4.03	2.90	1.37	41.14
Sterling	436	1.63	4.73	6.22	1.66	2.25	2.75	4.23	2.26	7.69	3.49	2.91	2.01	41.83
Taunton [3]	40	2.80	6.41	6.14	1.28	3.21	3.63	1.84	3.80	8.91	3.54	3.70	2.83	48.09
Taunton [4]	40	3.08	5.67	5.79	1.30	3.22	4.21	1.53	3.37	9.21	3.36	3.87	3.30	47.91
Taunton [5]	40	3.00	.....	.....	.....	.....	.....	2.05	3.35	9.40	4.55	3.85	.....	.....
Turners Falls	187	1.09	2.74	7.66	1.06	2.16	1.62	3.44	3.60	6.37	2.98	3.50	0.82	37.04
*Vineyard Haven	20	2.04	5.01	5.70	1.37	4.13	3.59	3.50	2.81	6.63	5.82	2.93	3.08	46.70
Wakefield	107	2.80	5.25	5.42	1.69	2.54	2.16	2.83	2.38	8.20	3.34	3.59	1.84	42.04
Waltham	106	2.77	4.56	6.29	2.15	2.01	2.65	2.54	2.35	7.22	3.23	3.41	1.24	40.42
Webster	440	1.51	4.38	6.69	1.19	1.96	3.30	3.75	2.86	7.83	2.94	2.98	1.83	41.15
Westboro	298	2.15	5.20	6.13	1.34	2.50	3.34	2.41	3.15	7.74	4.14	2.77	1.63	42.50
Weston	165	.....	.....	.....	.....	.....	.....	.....	2.41	7.15	2.90	2.91	1.30	.....
Williamstown	602	0.71	2.29	3.10	0.79	2.22	2.55	3.80	3.06	4.83	2.94	2.98	1.46	30.82
Winchendon	984	1.14	3.51	6.03	1.57	2.72	1.49	3.40	2.65	6.10	4.30	2.35	1.41	37.27
Winchester	21	1.94	4.60	4.39	1.56	1.89	2.18	2.39	2.26	7.99	3.01	3.08	2.07	37.36
*Woods Hole	22	1.75	4.26	4.83	1.33	3.58	3.62	2.81	2.99	5.66	4.53	2.49	3.18	41.03
Worcester [6]	514	1.67	4.43	7.25	0.80	2.40	1.55	2.65	2.50	.....	3.37	2.46	.....	.....
Worcester [7]	514	1.93	5.69	6.90	1.23	2.78	2.75	3.54	2.56	7.45	3.90	3.02	2.25	44.00
Michigan.														
Adrian	810	1.74	1.05	1.48	4.80	3.79	4.94	6.40	4.86	5.26	0.96	1.61	1.25	38.14
Allegan	707	1.12	2.04	1.47	2.24	3.40	2.50	8.49	2.47	8.04	1.31	4.10	.....	.....
Alma		2.00	1.06	1.23	3.91	2.04	3.19	1.62	3.25	7.31	0.67	4.05	1.13	31.46
*Alpena	609	1.56	0.91	0.49	2.46	2.94	3.09	0.62	6.78	6.00	0.84	3.44	1.01	30.14
Ann Arbor	611	0.95	1.20	0.97	.....	2.14	3.99	6.45	2.63	4.93	1.51	1.82	1.20	.....
Arbela		1.11	0.93	1.49	3.59	1.21	3.93	2.21	3.62	6.03	0.86	2.83	0.92	28.73
Badaxe	758	.....	.....	.....	.....	.....	.....	1.05	3.12	5.11	.....	.....	.....	.....
Baldwin	837	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	2.92	0.85	.....
Ball Mountain		1.15	0.92	1.59	2.62	3.89	2.86	4.61	4.73	5.26	0.54	2.30	1.04	31.51
Baraga	621	2.59	0.70	0.81	3.52	3.51	1.14	1.30	3.42	1.05	2.81	5.13	1.05	27.03
Battle Creek	823	1.49	1.56	1.39	3.48	2.40	7.16	7.55	2.76	6.60	1.76	2.64	0.52	39.31
Bay City [8]	593	.....	.....	.....	2.54	4.40	1.49	2.10	2.75	4.65	.....	.....	.....	.....
Bay City [9]	593	.....	.....	.....	.....	[8]3.52	1.26	0.74	3.05	4.24	0.58	3.12	0.71	.....
Benton Harbor	596	1.90	3.34	2.14	4.25	8.10	1.52	4.63	.....	4.94	2.18	3.25	1.03	.....
Benzonia		1.51	.....	.....	3.66	5.27	2.12	.....	2.11	.....	1.33	5.05	[8]1.27	.....
Berlin	686	0.98	1.45	1.43	2.76	2.14	2.82	3.31	3.33	4.72	1.49	1.82	0.94	27.19
Berrien Springs		1.90	2.00	1.72	2.50	3.85	2.20	4.55	1.87	6.39	0.65	5.87	1.35	34.85
Big Rapids	1,000	.....	.....	.....	.....	2.59	1.69	1.06	4.40	6.93	1.04	4.17	1.22	.....
Birmingham	778	0.65	1.10	1.45	1.91	3.14	4.33	6.05	3.49	4.93	1.66	2.14	0.93	32.03
Boon		0.99	1.35	2.28	2.40	3.42	1.83	2.05	5.23	7.21	1.13	4.94	1.21	34.05
Bronson	926	1.24	0.87	1.25	2.36	2.17	2.27	7.30	2.87	6.35	1.28	1.61	0.46	30.03
Calumet		2.33	1.26	0.78	4.02	6.35	1.77	1.76	4.75	1.27	3.37	5.66	1.40	34.72
Camden		.....	.....	.....	.....	.....	.....	.....	.....	4.89	1.06	.....	1.25	.....
Charlevoix		0.79	0.81	1.40	2.80	5.50	2.75	1.30	3.50	3.50	2.45	4.15	1.20	30.15
Cheboygan	604	2.40	0.97	0.76	2.73	6.25	2.76	1.97	3.65	4.14	1.18	4.01	0.95	31.77
Clinton	832	1.26	1.00	1.70	3.22	3.86	4.53	6.30	4.24	5.52	1.59	1.95	1.30	36.47
*Detroit	724	1.17	1.60	2.28	3.61	2.05	6.97	5.39	4.60	4.23	1.65	1.72	0.93	36.20
Escanaba	612	.....	.....	.....	.....	.....	.....	.....	5.06	2.84	3.57	3.41	1.05	.....
Fairview		0.58	0.85	2.16	2.00	.....	.....	.....	.....	4.86	1.01	1.40	0.91	.....
Fitchburg		1.35	1.38	2.17	4.08	2.39	5.05	5.04	4.73	5.52	1.53	2.41	1.36	37.01
Flint	726	0.45	0.64	0.36	3.14	2.28	2.25	2.20	4.90	5.60	0.72	2.14	0.51	25.19
Gaylord	1,348	.....	.....	.....	1.31	2.89	2.87	1.19	7.06	6.33	1.70	6.90	0.64	.....
Gladwin	784	0.60	0.80	0.95	2.43	.....	1.60	1.93	2.70	4.50	1.95	5.57	1.00	.....
*Grand Haven	628	1.73	2.22	1.64	3.47	1.95	1.00	4.12	1.97	5.95	1.05	3.78	1.30	30.18
Grand Rapids [10]	646	1.44	1.91	1.40	3.41	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Rapids [11]	646	0.80	1.11	1.45	2.67	1.90	1.85	3.66	2.53	6.97	1.26	3.96	1.34	29.50
Grape		0.85	1.02	1.39	4.02	4.20	3.51	4.74	3.30	3.87	1.45	1.49	1.17	31.01
Grayling	1,134	1.85	1.22	0.90	2.07	2.15	2.20	1.06	3.79	4.73	0.60	2.80	1.08	24.45
Hanover	1,114	1.02	1.38	1.53	3.07	3.19	6.26	8.88	4.11	5.10	1.13	2.42	1.23	39.32
Harrison		1.52	0.95	1.17	3.35	2.93	2.40	1.99	2.81	6.95	1.17	3.07	0.98	29.29
Harrisville		2.35	0.97	0.43	2.29	3.23	4.39	2.56	4.06	6.42	1.47	3.60	0.85	32.04
Hart		0.90	2.40	1.25	3.35	3.30	1.85	1.50	.....	.....	.....	4.15	1.56	.....
Hastings	790	1.02	1.67	1.27	2.72	2.65	2.76	5.52	4.98	6.73	1.16	2.71	0.85	34.04

[1] T. R. Rodman.
[2] New Bedford waterworks.
[3] Mrs. H. B. Sprague.
[4] E. L. Redfern
[5] C. H. Wilmarth.
[6] Worcester Academy.
[7] G. W. Swan.
[8] R. W. Erwin.
[9] Agent Flint and Pere Marquette Railroad.
[10] J. Kremer.
[11] A. K. Lamb.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Michigan—Continued.	Feet.													
Hayes		0.94	0.78		1.25	2.14	0.78	0.67	2.44	6.05	[6]0.85	2.28	0.46	
Hesperia			0.46	0.95	3.07	2.31	1.26	1.04	4.20	5.79		2.64	1.91	
Highland Station		1.13		1.54	4.09	2.86	1.93	6.75	4.68	4.69	1.36	2.57		
Howell	921	0.98	1.20	1.55	4.17	2.98	3.73	7.23	5.67	4.45	[6]1.19	2.00	0.87	36.02
Ionia	658									[6]4.32	0.72	2.50	0.80	
Iron River	1,491			1.72	4.29	2.53	1.30	1.82	6.45	1.28	2.48	4.45	1.03	
Ivan		1.28	1.05	1.25	2.45	6.46	1.12	1.40	3.18	5.83	0.76	4.84	0.87	30.49
Jeddo	742	0.86	1.23	1.16	2.68	1.44	2.48	2.15	6.16	4.99	1.15	1.74	1.34	27.38
Kalamazoo	778	1.56	1.97		2.30				6.20	8.32	2.47	3.55	0.87	
Lake City								1.29	3.70	5.55	1.08			
Lansing	841	1.11	1.08	1.15	2.05	2.67	3.39	7.10	3.28	6.27	0.87	2.98	0.72	32.67
Lathrop		1.00	3.62	0.48	3.40	5.14	3.01	2.68	3.43	1.98	2.56	6.70	2.00	33.00
Lewiston		1.74	0.48	0.48	2.66	3.78	2.89	3.10	6.06	5.98	1.07	4.81	0.69	33.74
Luzerne								1.39	5.01	6.05	1.22	4.04	0.88	
Madison		1.35	1.27	1.68	3.81	3.39	3.98	5.84	3.88	4.43	1.32	1.91	1.48	34.34
Mackinaw City	596						4.46	2.34	3.77	3.77	2.31	6.90	0.36	
Mancelona							1.69	1.26	4.48	4.80	1.51	6.76	1.74	
Manistique	613	[6]1.41	0.56	0.86	2.39	4.88	4.68	2.94	5.29	2.89	4.10	4.58	1.04	35.62
Marquette	734	2.04	1.75	1.20	3.12	2.46	2.25	1.49	1.93	1.34	4.20	6.44	1.37	29.59
Mayville		1.03	1.60	1.73	2.89	2.14	3.16	1.98	5.36	4.67	[6]0.73	2.66	1.09	29.04
Midland	608					[6]3.21	1.47	0.86	1.60	4.39	0.87	2.95	0.67	
Mottville		1.58	1.34	1.80	2.26	2.46	2.47	7.40	3.55	5.68	1.14	2.45	0.52	32.65
Mount Clemens	612								3.74	4.83	1.29	1.44	0.97	
Mount Pleasant[1]		1.25	1.00	2.30	3.68	2.67	3.70	1.27	2.43	5.74				
Mount Pleasant[2]								1.15	3.06	6.00	0.59	2.54	0.67	
Muskegon	593						[6]0.64	3.47	1.34	5.40	1.01	3.37	0.64	
Newberry	772										4.57	6.69	0.95	
North Marshall		1.12	1.31	1.17	3.46	3.49	6.92	7.01	2.98	6.08	1.69	2.93	0.77	38.93
Northport		1.42	1.50	1.21	4.70	3.97	1.60	0.60	2.41	3.21	0.53	2.19	1.25	24.59
Old Mission		1.52	1.34	0.99	2.57	4.30	2.19	0.84	4.08	5.37		5.51	1.10	
Olivet	885	2.23	2.61	2.45	4.73	4.43	6.58	8.82	5.44	6.16	1.43	2.89	0.78	48.50
Ovid	734	0.78	0.88	1.28	2.60	1.71	3.07	3.24	7.63	5.69	0.74	3.24	0.92	31.78
Owosso		1.03	1.06	1.19	3.32	3.26	2.04	3.47	5.28	0.92	0.72	3.11	1.12	32.52
Parkville		1.61	1.40	1.88	3.09	2.93	2.70	6.19	7.02	6.84	0.84	3.28	0.82	38.60
Petoskey	662						2.37	1.66	6.57	4.51	2.85	5.58	0.58	
Plymouth	731					[6]2.31	5.70	6.48	2.42	4.60	1.53	1.39	0.86	
Pontiac	938		1.00		2.88	3.36	3.14	7.38	5.13	5.75	1.61	1.65	0.75	
Port Austin	597					1.75	3.03	0.79	2.90	4.51	0.63	1.68	1.23	
Port Huron	639	0.69	1.37	1.47	2.52	1.86	1.79	4.88	4.74	4.74	1.25	1.81	1.31	28.43
Powers	866						5.40	1.97	5.59	1.87	4.12	5.19	1.05	
Reed City						2.92	1.45	1.74	2.16	7.40	0.80	3.75	0.64	
Rockland		2.90	0.90	0.40	5.10	2.63	1.34	1.35	[6]0.75	1.70	3.00	6.40	0.80	27.27
Rogers City				1.15	2.07	4.57	3.10	1.70	4.48	5.36	[6]1.49	4.64	0.78	
Romeo		1.70	0.80	1.04	1.60	2.16	2.11		1.29	5.30	1.02	1.42		
Saginaw	590				2.02	[1]1.11	2.41	1.22	5.06	5.17	0.59	2.19	1.07	
St. Ignace	589	2.18	1.35	0.80	3.17	6.34	3.69	2.20	[6]1.80	3.15	1.99	5.40	1.30	33.37
St. John	766	0.61	1.66	0.92	2.10	1.37	3.06	3.78	7.28	5.47		2.80	1.09	
Sand Beach	600		0.38		1.49	2.73	3.72	0.93	3.99	5.56	0.62	1.50		
Saranac	642	0.75	1.03	1.10	2.50	1.99	1.38	2.24	4.65	6.31	1.01		1.30	
Sault Ste. Marie	642	3.97	1.98	1.06	3.13	6.70	1.94	0.96	3.57	2.48	3.04	4.84	0.95	34.62
Somerset		0.99	1.11	1.40	3.36	2.26	3.28	7.76	3.58	[6]5.15	1.20	2.11	1.12	
South Haven	582	2.35	1.66	1.80	2.35	1.39	1.10	5.92	1.39	7.68	0.79	2.56	0.91	29.90
Stanton	903	0.80	1.35	1.41	4.34	2.27	2.01	1.48	2.88	5.87	0.27	1.97	0.57	25.22
Thornville		1.58	1.23	0.62	3.77	2.63	4.02	3.94	6.23	4.84	0.56	1.36	0.64	31.42
Three Rivers	790	1.34	1.10		3.34	2.45								
Traverse City							0.52	1.61	1.66	6.07				
Valley Center							3.01	2.64	4.88					
Vandalia	877	1.66	2.22	1.59	2.77	3.12	2.03	6.32	3.59	6.20	1.05	3.73	0.93	35.21
Waverly										5.84	0.63	3.75	1.11	
Wetmore										2.06	4.69	6.67	2.23	
Ypsilanti	715	1.40	1.04	1.76	3.30	3.95	5.19	6.15	3.44	4.31	1.63	1.94	1.19	35.30
Minnesota.														
Ada	906	0.54	0.44	1.29	4.10	5.62	1.52	1.11	1.45	2.15	1.25	1.90	0.53	21.90
Albert Lea	1,229	0.06	0.17	1.82		6.67	6.15	2.27	1.75	2.00	2.75	4.37	0.80	
Alexandria	1,391	0.66	0.69	2.01	2.23	5.15	2.77	1.84	1.08	3.04	3.01	1.75	0.55	31.78
Beardsley		1.72	0.88	1.68	6.51	5.62	3.56	2.25	1.62	2.62	3.46	2.10	0.76	32.78
Belleplaine	728	0.40	0.01	1.25		3.17	3.90	2.50	1.00	2.93	4.40	0.61		
Bermidji				1.60	3.34		2.97	2.09	4.18			3.85		
Bird Island	1,039	0.70	0.18	1.91	6.53	4.58	6.51	2.60	0.70	2.17	3.57	2.09	0.25	
Blooming Prairie	1,286	0.25	0.25	1.20	5.70	5.20	2.72	0.87	1.55	3.05	2.50	3.75	1.62	28.66
Bonnitwell		0.25	T.	2.86	4.95	3.36	4.88	1.14	2.60	2.03	3.89	1.51		
Breese		0.67	0.14	1.31	4.82	7.74	3.52	1.70	2.65	1.73				
Caledonia	1,179	0.58	0.21	1.19	7.52	4.41	5.34	2.43	2.50	4.43	3.05	3.13	0.56	35.35
Cambridge	1,000	0.83	0.10	1.37	6.14	3.82	4.31	0.33	1.92	2.94	3.55	3.92	0.64	29.92
Camden		0.55	0.27	2.95	11.93	4.00	5.65	0.77	0.90	2.42	3.33	2.35	0.10	35.22
Campbell	984			1.80					1.59	2.87				
Clearlake	991						5.92	1.72	2.82					
Collegeville	1,094	0.37	0.06	0.79	5.57	3.15	4.74	2.37	1.22	2.48	3.11	1.79	0.36	25.95
Crookston	863	1.58	0.97	2.45	5.23	8.13	2.95	1.05	3.13	2.29	1.02	1.30		
Dawson	1,054	0.59	0.72	4.07	2.06	5.72	3.29	0.99	0.39			1.19	T.	
Detroit City	1,364	0.20	1.09	0.82	2.92		6.10	2.09	1.62	3.31	2.57		0.30	
Duluth	702	1.30	0.19	1.59	4.06	5.18	2.00	1.74	2.41	1.00	3.46	3.42	0.84	27.19
Faribault	1,003	0.26	0.08			5.51	3.66	0.77			1.85			
Farmington	902	0.98	0.25	3.74	5.41	4.97	3.22	1.98	2.43	2.28	3.25	5.18	1.40	35.09
Fergus Falls	1,210	0.90	0.56	1.98	6.84	6.87	6.86	5.33	1.27	2.70	1.96	2.08	0.75	38.10
Glencoe	1,006	0.69	0.03	2.11	5.85	3.09	2.59		1.49	1.67	3.64	3.21	0.32	
Glenwood	1,403	0.85	0.65	2.23	8.71	5.41	4.31	1.90	0.85	2.32	3.74	2.33	0.44	33.74

[1] C. McCook.

[2] Agent Flint and Pere Marquette Railroad.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Minnesota—Continued.	*Feet.*													
Grand Meadow	1,338	0.43	0.18	1.20	6.47	5.32	5.79	2.15	2.32	3.62	1.97	3.08	0.57	33.10
Grand Portage		1.96	0.97	2.25	5.03	5.21	1.99				0.94	6.43	0.87	
Granite Falls	944	0.10	0.18		8.04	3.83	4.23	2.85	0.55	3.30	3.25		0.39	
Hutchinson	1,040	0.42	0.20	2.10		3.35								
Koochiching			0.50	2.13	[b]1.91									
Lakeside	1,040						5.80	3.00	0.45	1.70	1.80	2.10	0.62	
Lake Winnibigoshish	1,290	0.83	0.30	0.90	4.55	8.19	3.57	1.81	4.00	2.67	2.86	2.49	0.79	32.96
Lambert		0.75	1.35	2.31	6.55	10.60	3.60	0.68	1.80	2.31	0.95	2.65	1.25	34.80
Lawrence	1,246	0.80		1.27	8.37	5.17	3.25	1.50	1.60	2.80	5.25	0.39	0.50	
Leech Lake	1,290	1.26	0.64	1.02	5.25	8.26	3.22	2.21	3.17	1.95	2.48	2.98	0.88	33.32
Lesueur	757		0.25				6.12	*0.50	T.	2.38	2.99	4.10	0.63	
Long Prairie	1,299	0.80	0.24	1.71	7.20	4.87	4.18	2.61	0.83	3.80	3.45	1.76	0.59	32.04
Lutsen	1,202	3.35	0.85	1.50	5.36					2.45	3.94	4.68		
Luverne	934	0.25	0.40	1.16	4.90	3.93	9.76	1.90	4.21	4.33	3.47		0.41	
Mapleplain	1,023	0.96	0.29	4.19	5.80	3.95	3.93	0.75	5.27	2.59	4.08	4.19	1.00	37.00
Maplewood		0.61	0.25	0.56										
Mazeppa	934	1.00	0.10	1.20	2.50	3.10	2.60	0.90	3.10	0.60	1.20	3.00	0.90	20.20
Milan	995	0.76	0.62	4.21	6.15	3.50	3.43	3.92	1.77	1.79	2.66	2.05	0.79	31.65
Minneapolis[1]	837	0.85	0.26	3.02	5.22	3.92	3.76	1.73	4.15	2.42	3.94	4.17	0.83	34.27
Minneapolis[2]	837	0.77	0.17	3.14	5.11	3.91	2.85	1.15	3.65	2.55	3.86	4.05	0.75	31.96
*Minneapolis	837	0.67	0.14	2.70	5.12	3.93	2.69	1.39	3.51	2.58	3.55	3.80	0.57	30.65
Minnesota City	740	0.52	0.19	1.05	5.82	4.97	7.09	1.13	2.13	3.03	2.31	2.68	0.63	31.55
Montevideo	900	0.75	0.60	3.94	7.33	4.35	3.89	2.62	1.55	2.06	2.87	1.89	0.48	32.33
*Moorhead	935	0.74	0.66	1.48	4.48	4.20	2.61	1.30	2.26	3.02	2.23	3.09	0.73	26.80
Morris	1,170	0.40	0.65	1.98	8.12	4.64	3.94	2.06	1.11	2.43	3.50	1.34	0.24	30.41
Mount Iron	1,510	1.55	0.42	1.85	5.60	6.81	2.51	4.39	4.85	2.69	4.90	2.20	1.70	39.46
New London	1,215	0.21	0.10	3.08	10.30	3.46	3.46		4.74	1.72	1.90	1.78	3.05	
New Ulm	791	0.26	0.07	1.91	5.12	6.56	4.17	0.83	0.34	3.35	3.55	3.99	0.37	30.52
Park Rapids		0.92	0.45	1.62	4.94	5.70	4.63	1.89	2.89	1.89	1.76	2.65	0.71	30.05
Pine River		1.89	0.38	2.43	6.56	5.72	3.90	2.46	1.93	1.82	3.10	2.49	0.58	33.26
Pleasant Mounds		0.30	0.03	1.51	5.32	6.60	2.05	1.30	2.05	3.12	3.49	4.26	0.86	30.89
Pokegama Falls	1,290	0.88	0.20	1.40	5.66	7.26	3.13	2.39	2.42	1.72	3.79	2.69	1.04	32.58
Redlake		0.51	*0.08	3.15										
*Red Wing	680			0.20	4.56	4.10	2.98	1.31	1.55	2.79	2.73	3.10		
*Reeds				0.29	6.59	5.12	4.61	0.71	1.35	3.19	3.91	3.68	0.70	
Rolling Green	753	0.60	0.30	1.80	4.20	5.30	3.65	1.90	3.30	2.30	2.50	3.60	1.10	30.55
Roseau		*0.75	0.87	1.34	4.34	[i]6.31	3.25	[i]0.62	2.25	*1.44		2.40	0.68	
St. Charles	850	0.57	0.15	1.48	7.84	4.10	6.04	1.67	2.29	3.06	2.23	3.21	0.85	33.49
St. Cloud	1,020	1.05	0.18	3.05	6.31	2.57	5.00	2.32	1.66	2.59	4.30	2.76	T.	31.79
St. Olaf	1,485	1.00	1.03	1.75	6.36	7.62	5.02	3.38	1.35	4.09	2.17	1.88	0.55	36.20
*St. Paul	850	0.81	0.17	2.93	5.63	4.67	3.30	1.12	4.48	2.45	3.39	5.07	0.71	34.73
St. Peter	711	0.71	0.22	2.72						2.10	1.95		0.05	
Sandy Lake Dam		0.69	0.12	2.19	6.65	6.36	2.65	2.34	3.27	1.90	5.18	2.39	0.83	34.57
Sauk Center	1,244	0.55	0.54	2.66	8.00	5.09	4.18	1.70	0.72	2.55	3.98	1.27		
Shakopee	1,131	0.91	0.15	2.70	5.67	2.63	3.00	0.62	2.93	1.80	4.15	4.43	0.59	29.58
Tower	2,350	1.10	1.05	1.35	2.70	5.80	2.95	4.20	4.80	1.90	1.55	2.00	0.60	29.50
Two Harbors	692	0.71	0.25	3.20	3.44	4.86	2.44	3.27	1.81	1.66	4.85	3.96	1.17	31.62
Wabasha	662	0.93	0.22	1.83	6.58	3.30	3.81	0.93	1.19	3.06	3.38	3.53	0.92	29.63
Willmar	1,131	0.35	0.38	2.02	7.43	4.11	3.83	0.97	4.39	3.20	2.09	2.96	0.45	32.18
Winona	1,613	0.37	0.37	1.35	6.41	4.60	5.35	1.83	2.77	3.19	2.99	3.08	0.53	32.84
Worthington	979	0.65	0.52	2.16	5.24	4.63	3.75	3.56	1.73	4.75	3.90	5.47	0.12	36.48
Mississippi.														
*Aberdeen	210			5.86		1.48	3.20	2.60	2.60	0.65				
Agricultural College	424	4.15	9.31	4.52	4.21	4.44	4.48	2.60	1.47	1.03	2.61	4.38	1.00	44.20
Austin	200	6.15	3.17	5.86	4.80	2.26	3.00	0.16	2.01	2.56	2.13	8.13	0.52	40.75
*Batesville	230	3.47	4.34	8.01	5.57	2.58	5.72	0.60	1.85	1.34	2.80	6.85	0.65	43.78
Bay St. Louis	28	2.95	4.70					4.55	9.29		4.39	2.54	1.78	
Biloxi	24	2.60	4.60		1.15	2.50	7.40	3.87	3.70	3.63	6.80	2.98	3.08	
Booneville	504				2.76			4.82	1.08	0.73	2.24	[h]2.47		
Briers		7.39	9.96	4.69	7.27	1.58	5.16	0.95	1.86	0.96	7.71	4.95	2.12	54.60
*Brookhaven	500	5.38	8.49	6.28	4.74	0.41	6.36	1.45	3.14	2.48	8.15	5.35	1.90	52.13
Canton	228	4.36	12.73	2.93	2.64	2.71	3.45	1.32	1.09	1.22	3.62	4.80	0.66	40.93
Clarksdale					3.31	2.21								
*Columbus[3]	250	2.53	9.56	5.14	4.82	2.98	4.26	2.45	1.38	2.02	3.61	6.18	1.06	45.99
*Columbus[4]	250			*4.32		2.93	3.83	1.55	1.31	1.84				
*Corinth	434					1.79	1.76	3.36	1.90	0.96	0.91			
Crystal Springs	468	5.39	11.79	3.93	4.53	3.92	7.36	3.16	2.70	1.10	5.50	3.72	0.94	54.04
Edwards	222	4.88	12.04	3.20	2.86	2.35	3.46	0.95	3.20	0.65	3.90	2.79	1.32	41.60
Enterprise	248			[g]5.05	4.94	1.66	5.57	2.29	3.14	3.23	1.92	2.52		
Fayette	282	7.92	12.26	3.50	5.69	0.53	3.82	1.88	2.95	1.56	6.57	3.20	1.55	51.41
French Camp		3.12	11.39	4.60	3.66	4.48	4.40	1.90	2.60	1.72	2.61	3.34	0.66	44.48
Fulton		2.37	8.75	7.21	4.34	2.15	1.13	0.95	2.08	0.61	3.01	4.03	1.43	38.06
Greenville[5]	126	2.59	4.93	7.77	2.30	0.92	0.92	1.25	1.44	0.71	2.39	5.63	0.29	31.64
*Greenville[4]	126	3.29	5.24	7.98	2.48	1.09	0.71	0.85	1.84	0.74	3.20	4.73	0.17	32.32
*Hazlehurst						0.92	10.22	4.04	1.82	0.62	7.90	2.91		
*Holly Springs	600				3.56	4.06	1.78	2.53	3.72	1.40	1.97	6.27	2.82	
Ittabena		4.12	4.68	6.42			2.86	0.40			[j]3.17	*2.90		
*Jackson	288	4.52	12.74	2.85	4.67	2.46	3.98	3.34	2.76	1.04	3.09	4.08	1.32	46.86
Kosciusko	437	3.79	9.38	4.50	3.89			3.68	7.11	1.40	3.19	4.45	T.	
*Lake	446	[g]3.20	9.12	3.36	3.99	4.25	5.92	1.71	3.87	3.67	4.96		0.18	
Leakesville		3.93	7.19	6.30	2.26	8.16	7.05	6.55	3.21	1.10	4.40	4.95	2.62	57.77
Logtown		2.32	4.79	4.97	2.90	5.16	8.50	5.61	6.75	3.75	3.18	2.20	3.31	53.46
Louisville		2.81	12.94	3.79	4.53	2.29	3.50	3.57	3.79	3.46	3.12	4.57	0.37	48.7
*Macon	185			0.93		2.19	3.68	2.44	0.68	0.31	1.50	1.70	0.31	
Magnolia	415	3.21	5.82	6.12	3.35	0.45	6.98	1.73	5.26	5.94	7.27	5.99	4.57	56.3
Mayersville										0.75	4.60	4.43	0.75	
*Meridian	358	3.98	5.03	4.75	5.23	2.84	7.55	1.12	6.39	1.68	2.62	3.66	0.87	45.6

[1] W. M. Cheney. [2] J. H. Aschenbeck. [3] River observer. [4] Cotton region observer. [5] Robert Somerville.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Mississippi—Continued.	Feet.													
Mossspoint		3.95	5.60	8.35	3.60	5.40	5.65	3.95	5.10	1.25	8.45	1.38	2.00	54.68
*Natchez	206	5.10	9.70	4.00	4.50	1.50	3.00	3.40	3.35	0.20	4.70	2.75	2.25	44.15
*Okolona	311	2.46	[1]9.52	6.20		3.32	1.48	2.42	2.04	0.63	2.65		1.06	
Palo Alto	300	2.61	12.49	5.71	3.18	4.92	3.78	1.73	0.02	1.52	2.69	3.76	0.89	43.30
Pontotoc		3.85	7.61	6.57	2.75	2.02	3.83	2.39	1.60	0.97	2.27	3.59	1.01	38.46
Poplarville	313				4.01	1.17					3.00	3.61	4.35	
*Port Gibson		8.41	12.64	4.06	3.21	1.54	4.57	1.16	1.25	0.60	5.93	5.13	1.32	49.82
Rosedale		4.92	4.06	4.80	2.44	1.05	1.25	[1]1.22	0.87	2.08	3.10	6.57	0.20	32.65
Thornton		4.50	6.63	4.82	4.14	4.39	2.64	0.30	0.90	0.63	4.50	2.90	1.00	37.35
Topton	426	3.40	4.20	3.80	4.95	3.85	4.50	*0.80	1.70	1.00	2.15	3.40	1.35	35.10
University				[1]6.32	3.64	2.00	4.99	0.95	1.38	0.53	1.51			
Vaiden	325	4.21	10.52	4.41	3.56	2.42								
*Vicksburg	254	3.94	10.13	3.23	2.27	2.40	5.90	1.09	1.11	0.26	3.60	2.67	1.38	37.98
Water Valley	300	4.01	4.52	7.82	3.91	1.72	7.12	1.42	2.26	1.55	3.51	3.65	0.31	41.80
Waynesboro[1]	191	4.45	4.75	5.10	2.56		8.40	2.80	5.00		2.90	2.35	1.60	
*Waynesboro[2]	191					4.89	9.60	3.52	5.13	1.15	2.55	4.55		
Williamsburg					10.64	6.24	6.43	1.70						
Windham	175	7.23	6.70		6.45	4.86		3.29	2.80	1.59				
Woodville	560	6.15	8.28	9.09	8.22	1.92	4.63	5.13	4.65	1.73	7.60	4.27	2.93	64.60
*Yazoo City	116	3.80	8.71	3.64	3.52	1.96	3.08	0.59	1.68	0.58	4.48	2.56	0.62	35.22
Missouri.														
Akron		0.70	0.54	1.14	2.99	9.93	1.80	7.98	3.91	6.86	2.54	1.07	0.55	40.01
Appleton City	842	0.38		2.50	5.41	13.12					2.30	2.50	1.49	
*Arlington	689			2.25	4.21	11.28	3.96							
Arthur	767	0.30	1.03	1.84	6.02	14.86	3.97	3.15	2.91	3.17	2.18	2.44	1.02	42.89
Avalon											2.54	1.76	1.00	
*Bagnell	577	0.30		2.30	2.15	8.78	7.98							
Bethany	916	0.91	1.14	1.11	2.72	9.34	3.34	6.74	4.04	4.87	2.05	1.29	0.71	38.26
Birchtree	998	1.22	1.85	2.80	3.22	4.08	4.18	2.42	3.08	3.29	3.29	4.91	0.57	34.91
Bolckow	929						1.25	6.04	7.54	4.92	2.43	0.75	0.62	
*Boonville	588	0.90	1.48	3.88	7.42	7.96	2.22	5.42	1.96	4.11	3.82	2.78	1.88	43.83
Brunswick	652	0.70	2.07	0.80	2.36	11.52	5.42	7.27	1.59	7.27	2.30	1.48	1.09	43.87
Carrollton	665	0.70	1.73	1.54	3.65	7.16	3.85	5.57	3.86	5.67	2.65	1.98	1.15	39.51
Cedargap		1.30	2.44	2.92	3.45	9.37	3.24	1.91	1.65	4.20	2.25	1.88	0.71	35.32
*Columbia	783	1.03	1.58	1.13	3.08	5.61	4.33	3.79	1.85	3.61	2.45	1.61	1.11	31.18
Conception	787	0.27	0.41	1.60	2.86	13.39	2.88	5.95	7.73	4.17	3.99	0.94	0.61	44.80
Cowgill	960	0.88	1.16	0.97	3.30	9.11	2.65	7.22	2.28	3.14	1.86	1.62	0.86	35.05
Darksville	826	0.70	1.90	0.57	3.10	8.03	4.98	4.82	1.55	5.85	2.30	0.92	1.00	35.72
Downing	869	0.95	1.41	0.57	2.73	7.54	1.36	14.98	3.56	5.29		1.02	0.87	
East Lynne	855	0.48	0.84	1.32	5.83	9.75	1.49	4.85	4.41	3.40	2.05	1.59	1.19	37.20
Edgehill	890	1.07	2.17	3.21	2.30	10.22	8.29	5.26	3.33	4.25	2.74	3.91	0.58	47.33
Eightmile	910	0.67	0.68	0.97	5.98	9.24	2.49	5.35	4.09	3.37	2.12	1.72	1.17	37.85
Eldon		1.30	1.57	1.55	2.05	9.29	4.70	6.68		3.74	2.81	2.62		
Elmira	881	0.81	1.11	1.06	3.27	4.97	2.26	9.34	2.86	2.87	1.93	1.64	0.90	33.02
Emma	783	0.45	0.55	1.00	4.12	6.40	2.30	3.97	2.60	3.50	1.30	1.77	1.10	29.06
Fairport		0.73	0.77	1.08	2.08	12.42	1.59	8.14						
Farmersville		0.70	0.82	0.76	3.92	8.13	1.21	4.60	4.76	4.77	1.79	1.78	1.07	34.31
Fayette	725	0.97	1.71	1.28	3.39	8.34	3.35	7.02	1.05	3.56	2.44	1.48	1.29	35.88
Fulton	273	1.40	1.60	1.70	3.18	6.31	3.15	7.90	2.68	2.28	2.75	2.40	1.00	37.35
Gallatin	803	0.95	0.90	0.81	3.57	10.25	1.89	8.62	4.95	5.54	1.91	1.56	0.92	41.87
Gayoso		2.94	2.67	6.44	2.20	4.16	5.50	3.68	1.68	3.80	1.60	6.80		
Glasgow	748							3.89	1.29	4.05	3.00	1.32	1.07	
Gordonville	369	3.12	2.70	3.45	2.62	7.39	2.69	2.11	2.37	3.30	1.80	3.87	1.19	36.61
Gorin	701	1.54	1.66	0.66	3.13	7.70	2.87	12.27	4.56	6.71	3.22	1.12	1.04	46.48
Grovedale		1.19	1.90	2.48	3.64	11.53	5.98	4.41	2.63	4.39	2.57	1.98	0.98	43.68
Halfway		1.20	1.56	2.51	4.29	12.38	6.34	3.04	3.77	4.26	2.69	1.56	1.00	44.60
*Hannibal	534	1.54	1.74	0.92	2.83	7.14	2.40	9.44	1.58	3.54	1.72	1.73	0.65	35.23
Harrisonville	914	0.34	0.69	1.35	4.49	7.67	1.14	3.60	5.64	3.38	2.36	1.75	0.75	33.16
Hastain	700	[1]1.14	1.59	1.40	2.73	10.97	9.97			3.23	2.88	2.44	1.00	
*Hermann	516	1.74	2.38	1.54	3.14	9.45	4.49	6.37	1.94	2.27	3.16	1.98	0.97	39.43
Houston		0.55	0.75	2.96	3.97	6.70	7.08	2.36	4.96	4.64	2.03	2.17	0.70	38.87
Houstonia (near)		0.67	1.26	1.02	3.72	6.83	2.10	4.27	3.04	4.41	1.46	1.79	1.11	31.68
Humansville	914	0.42	0.73	2.46							2.13	3.18	0.95	
Irena		0.91	1.04	1.36	2.81	11.33	2.27	5.83	8.45	3.93	4.51	1.19	0.74	44.37
Ironton	600	1.73	2.11	3.73	4.65	9.59	6.93	6.39	2.26	4.36	2.54	4.38	0.46	49.13
Jefferson City	628	1.51	1.90	1.87	3.15	8.15	4.35	5.55	1.15	1.65	3.05	2.10	1.20	35.63
*Kansas City	963	0.79	0.82	1.09	3.21	5.81	2.04	8.66	3.33	2.81	2.99	1.38	0.71	33.64
Kidder	1,017	1.31	1.07	1.12	3.71	9.29	1.33	5.80	2.65	3.50	1.96	1.53	0.89	34.16
Lamar	964	0.30	1.55	1.78	5.95	16.10	3.38	5.59	3.89	4.80	3.32	3.96	1.40	52.02
Lamonte	863	0.72	1.01	1.35	4.45	8.70	2.90	5.52	1.85	2.88	1.59	2.39	1.36	34.72
Lebanon	1,265	1.13	1.47	3.76	5.01	13.65	8.56	5.73	4.07	5.43	2.79	1.92	1.15	54.67
Lexington	813	0.72	0.57	1.11	3.00	5.37	3.48	5.66	3.11	5.53	1.87	1.84	1.09	33.33
Liberty	850	0.74	0.48	0.93	3.40	5.13	6.02	7.28	3.99	2.92	2.34	1.52	0.72	35.47
McCune	550	2.44	2.27	1.46	3.03	9.65	6.09	9.83	2.29	3.34	2.20	1.83	0.73	45.16
Macomb			1.75	1.85	5.31	8.98	4.09	2.00	2.13	4.60	2.10	2.20	1.10	
Mansfield		1.28	1.73	2.47	4.65	7.88	3.45	2.61			3.30	1.25	1.30	
Marblehill	420	2.55	2.87	3.96	3.03	10.23	5.64	6.89	1.80	4.38	1.90	2.96	1.05	47.26
Marceline	859	0.82	1.68	0.90	3.54	9.54	3.47	6.51	1.93	7.06	3.08			
Marshall	830	0.58	1.24	0.87	3.68	5.15	2.22	3.75	2.35	4.17	2.20	1.75	1.16	29.12
Maryville	1,160	1.12	0.59	1.49	2.86	12.38	2.38	3.95	6.82	2.93	3.18	0.83	0.02	38.55
Mexico	830	1.40	1.87	1.62	2.23	7.61	9.72	6.43	2.17	3.45	3.24	1.65	0.90	42.29
Miami	640	0.95	1.68	1.30	2.96	8.12	2.06							
Mine Lamotte	838	1.31	2.05	3.59	3.11	6.81	3.60	6.33	2.38	3.25	2.81	4.00	0.22	40.96
Mineralspring	1,475	1.59	2.03	2.33	5.24	11.73	3.41	1.51	5.26	2.71	4.28	2.63	0.59	43.36
Montreal					2.51	9.84	4.94	3.76	2.94	6.58	2.61	2.20	1.74	
Mount Vernon	1,480	1.03	0.22	2.10	5.21	9.56	2.43	2.45	4.05	3.13	2.52	1.62	0.47	34.79
Neosho	1,023	1.11	1.08	2.87	3.62	11.91	7.18	3.51	2.20	4.44	3.63	3.70	0.44	45.19
Nevada	860	0.62	1.35	2.05	5.59	16.70	3.04	3.43	2.71	4.38	2.12	1.62	0.73	42.34

[1] W. S. Davis.

[2] Cotton region observer.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Missouri—Continued.														
	Feet.													
Newhaven	508	1.30	2.83	1.42	1.91	8.85	4.87	6.08	2.48	2.55	2.96	1.20	0.45	36.90
New Madrid	295	3.97	3.55	8.70	3.50	9.91	4.18	6.51	4.32	4.25	3.19	5.86	0.98	58.92
New Palestine	759	0.81	1.00	1.38	4.53	6.88	3.10	4.38	1.88	2.58	2.05	1.78	1.28	31.65
Oakfield	843	1.64	2.67	1.83	1.78	9.91	5.23	7.20	2.15	2.83	2.69	3.23	0.68	41.84
Oakmound	.....	1.53	1.99	2.27	3.57	4.33	5.07	2.19	1.76	3.15	2.77	3.20	0.49	32.32
Oakridge	600	1.62	1.36	4.57	1.40	7.00	[f]2.90	.....	1.87	2.22	2.29	3.66	0.76	.....
Olden	1,246	1.34	1.92	2.46	4.33	4.28	3.88	2.04	2.95	4.01	3.28	4.24	0.23	34.96
Oregon[1]	1,100	1.41	0.87	1.70	3.17	15.62	2.52	5.43	6.47	4.27	2.92	0.74	0.94	45.46
Oregon[2]	1,100	1.15	0.71	1.66	2.86	14.26	2.71	5.64	6.79	4.35	2.97	0.70	0.82	44.62
Osceola	727	0.45	0.60	2.15	3.75	18.23	2.80	6.35	4.65	3.05	1.82	2.75	3.90	50.50
Oto	.....	1.30	1.32	2.50	5.31	[d]7.00	3.50	3.10	7.20	5.00	2.10	2.00	0.40	40.73
Palmyra	650	1.70	2.80	1.65	2.40	7.60	3.40	12.24	1.74	6.85	2.38	1.78	0.85	45.39
Phillipsburg	1,421	1.17	1.81	3.37	4.59	12.67	4.49	4.78	4.49	6.10	3.42	1.95	1.30	50.14
Pickering	1,019	1.17	0.66	3.05	2.91	10.80	0.94	4.48	5.22	3.35	3.21	1.49	0.93	38.21
Platte River	800	1.39	0.81	1.10	2.33	9.57	4.47	8.20	3.77	2.21	2.63	1.21	0.09	37.78
Poplarbluff	344	2.09	4.00	3.99	4.77	4.27	5.10	.....	1.85	5.32	1.62	3.11	0.06	.....
Potosi	.....	1.22	2.15	3.83	2.58	8.15	6.61	6.90	4.02	4.47	2.47	3.84	0.43	46.67
Princeton	1,026	0.45	1.70	0.79	3.59	10.02	0.77	10.81	5.17	5.79	2.89	1.66	0.78	44.42
Rhineland	516	1.81	2.48	1.59	2.88	8.79	3.76	6.95	1.56	2.01	3.03	1.56	0.97	37.39
Richmond	809	.....	.....	0.52	2.28	4.58	2.35	8.64	3.26	3.85	1.69	2.05	0.83	.....
Rolla	1,092	1.08	1.79	2.99	3.72	10.04	3.96	6.85	3.16	4.06	2.57	1.89	1.12	43.23
St. Charles	614	1.60	3.24	2.23	1.96	9.86	6.14	3.41	2.49	3.08	1.71	2.86	0.47	39.05
*St. Joseph	850	0.59	0.41	0.83	2.89	7.48	3.13	5.10	3.24	3.46	2.60	0.88	0.02	30.63
St. Louis[3]	571	1.52	2.83	2.04	2.61	9.12	4.48	3.57	2.90	2.49	1.52	3.69	1.06	37.83
*St. Louis	571	1.43	2.81	2.03	2.43	9.12	4.57	4.67	2.12	2.42	1.20	3.70	1.05	37.55
Sarcoxie	1,088	0.75	1.21	2.90	4.50	10.14	2.16	3.89	4.44	3.93	2.52	2.60	0.75	39.79
Shelbina	776	1.60	1.80	1.15	7.10	10.00	4.90	14.80	2.30	5.30	3.00	1.30	1.00	54.25
Sikeston	328	2.15	3.12	5.62	4.05	8.25	.....	.....	3.20	4.00	1.20	1.70	0.45	.....
*Springfield	1,324	1.50	2.25	3.40	3.75	11.46	2.81	2.98	3.04	4.12	2.50	2.09	0.79	40.69
Steffenville	.....	1.12	2.20	0.76	2.75	8.54	4.21	11.18	2.07	7.28	2.47	1.47	1.21	45.26
Stellada	.....	0.50	0.85	1.74	3.47	7.76	2.15	5.89	3.81	3.16	1.50	2.48	1.58	34.89
Sublett	1,000	0.80	2.95	0.70	4.57	13.15	2.02	9.90	2.05	8.17	3.45	2.20	1.50	51.46
Tindall	.....	0.60	.....	0.84	1.11	9.91	1.10	.....	1.72	.....	.....	.....	.....	.....
Trenton	812	0.70	.....	1.75	3.03	10.34	1.45	4.17	.....	.....	.....	1.46	1.00	.....
Unionville	1,072	1.74	1.98	0.93	4.77	12.60	3.40	9.04	4.63	6.41	2.96	1.38	0.70	50.54
Versailles	.....	.....	0.65	.....	.....	9.42	4.80	.....	2.14	3.20	.....	.....	.....	.....
Virgil City	.....	0.61	1.52	1.68	3.21	12.45	3.38	4.94	2.44	5.07	1.73	3.63	1.15	41.81
Warrensburg	.....	0.55	0.49	0.99	.....	6.41	1.18	7.00	1.15	2.72	1.38	1.93	0.98	.....
Warrenton	853	1.51	1.88	1.68	1.68	8.44	4.90	3.85	1.83	2.44	3.81	1.58	0.90	34.50
Wheatland	.....	0.65	1.47	2.28	5.26	14.70	3.37	5.09	3.67	3.75	2.56	4.14	1.50	48.44
Willow Springs	1,300	1.21	1.95	2.63	5.88	6.15	4.18	2.64	5.26	3.88	2.71	2.39	0.87	39.75
Zeitonia	842	1.34	2.02	2.28	3.44	7.90	5.10	3.13	0.38	3.05	2.16	4.48	0.62	35.99
Montana.														
Agricultural College	.....	.....	0.21	0.67	1.44	2.35	2.55	0.92	0.37	2.91	0.58	2.28	0.39	.....
Augusta	[4]3,500	.....	.....	.....	.....	.....	.....	1.60	1.78	2.62	0.30	1.30	0.10	.....
Bigtimber	4,072	0.31	0.43	2.13	1.73	3.93	1.50	1.34	0.43	2.81	0.79	1.96	0.08	17.44
Billings	3,117	0.25	0.05	0.80	0.63	3.55	1.33	0.81	.....	.....	0.00	1.99	0.22	.....
Boulder	4,920	.....	.....	.....	.....	.....	.....	.....	2.50	.....	[j]0.30	.....	T.	.....
Bozeman	4,754	0.50	0.70	1.05	1.45	5.03	2.55	1.15	0.38	3.60	0.55	1.70	0.40	19.06
Butte	5,484	0.30	0.37	0.32	0.55	1.43	1.07	1.19	0.87	1.95	0.47	1.62	0.37	10.51
Chinook	2,401	1.25	0.70	0.20	1.40	5.17	1.51	1.11	0.79	1.66	0.30	0.90	0.30	15.29
Choteau	.....	1.45	1.02	1.30	1.05	3.84	0.69	1.67	2.52	2.53	1.50	1.20	0.05	18.73
Cokedale	5,750	0.46	0.42	1.99	[e]1.30	[h]3.57	[f]1.57	[i]0.82	0.40	3.81	[e]0.56	[d]3.51	[e]0.10	18.51
Columbia Falls	2,800	2.51	1.47	0.54	0.53	2.24	1.10	0.51	[f]2.83	2.20	.....	.....	.....	.....
Deerlodge	4,529	0.42	0.44	0.86	0.90	1.62	.....	.....	.....	.....	.....	.....	0.22	.....
Dillon	5,106	0.30	0.20	0.60	0.50	3.05	1.10	1.15	0.45	.....	.....	.....	.....	.....
Fort Benton	.....	0.80	T.	0.16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fort Custer	.....	0.21	0.18	0.28	5.02	3.34	7.50	4.95	0.75	0.72	0.42	1.71	0.00	25.08
Fort Keogh	2,367	0.68	0.55	0.37	1.57	2.22	1.61	0.81	0.46	0.29	0.50	1.72	0.50	11.28
Fort Logan	.....	.....	0.02	0.19	0.26	[e]1.48	0.62	2.90	.....	.....	0.44	2.71	.....	.....
Fort Missoula	.....	1.41	0.49	1.09	0.65	1.73	0.86	0.58	1.42	1.74	1.13	1.92	0.50	13.52
Glasgow	2,087	0.71	0.27	0.86	3.28	2.56	2.41	1.13	0.22	0.43	0.45	1.75	T.	14.07
Glendive	2,069	1.70	0.80	1.50	1.60	7.03	4.20	1.53	0.70	0.75	0.40	2.00	0.30	22.51
Greatfalls	3,312	0.55	0.16	1.39	1.29	3.29	1.14	0.65	0.27	2.06	0.03	1.54	0.15	12.52
*Havre	2,477	1.38	0.52	0.67	1.09	4.27	3.02	0.66	0.65	1.63	0.68	1.80	0.11	16.48
*Helena	4,108	0.72	0.59	1.71	1.23	2.25	0.71	0.89	0.86	2.54	0.24	3.29	0.35	15.38
Hogan	4,590	2.31	0.70	2.60	2.35	2.27	0.37	.....	2.26	3.47	0.30	2.54	0.21	.....
Kalispell	2,946	.....	.....	.....	.....	.....	0.34	0.73	0.18	3.15	.....	.....	0.54	.....
Kipp	4,472	1.35	0.45	1.50	1.41	5.09	1.34	1.38	2.74	6.02	0.98	3.65	0.37	26.28
Lewistown	.....	1.65	1.50	1.60	3.90	2.63	2.33	2.06	0.39	2.86	0.38	2.43	T.	22.73
Libby	.....	2.57	1.04	0.91	0.89	1.48	0.40	0.09	0.94	1.37	0.42	8.61	3.02	21.74
Livingston	4,487	0.37	0.10	1.26	0.70	2.40	0.35	0.59	0.15	2.37	0.83	1.56	T.	10.68
Manhattan	4,292	0.05	0.31	[f]0.01	1.90	0.61	1.02	0.45	0.44	2.35	0.21	1.45	0.11	8.51
Martinsdale	4,707	0.65	0.10	0.65	2.80	4.00	1.71	2.53	0.49	2.49	0.01	2.10	0.10	17.63
Marysville	5,376	1.60	0.51	1.98	1.33	3.42	1.11	1.23	1.47	2.24	0.82	3.47	0.55	19.73
*Miles City	2,372	0.53	0.51	0.28	1.26	2.92	1.86	1.29	0.33	0.66	0.62	1.37	0.09	11.72
Musselshell	.....	0.25	0.20	0.32	1.10	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poplar	1,955	1.49	0.66	1.85	2.41	3.70	3.70	1.22	0.55	0.15	0.40	1.65	T.	17.87
Radersburg	.....	0.32	0.20	0.20	2.52	1.55	.....	2.05	1.25	2.00	0.60	0.85	.....	.....
Redlodge	.....	0.65	0.35	3.90	.....	.....	4.12	.....	.....	.....	.....	.....	.....	.....
St. Ignatius Mission	.....	.....	.....	.....	0.65	2.68	1.27	.....	.....	2.77	0.21	1.74	[e]0.34	.....
St. Pauls	4,150	.....	.....	0.54	4.10	5.10	2.01	0.07	0.03	0.22	0.03	1.55	T.	.....
Sun River	.....	0.16	0.21	0.82	0.60	3.51	1.45	1.05	.....	.....	.....	.....	0.01	.....
Troy	2,250	4.04	2.53	0.85	1.45	1.77	0.62	T.	0.79	1.39	0.98	7.06	3.49	24.97
Utica	4,420	0.80	0.30	1.02	0.20	3.06	2.35	3.42	1.93	2.38	0.55	4.67	0.00	20.68
Virginia City	5,480	0.67	0.65	0.98	2.15	4.28	1.25	1.19	0.86	1.73	0.72	1.84	0.25	16.57
White Sulphur Springs	.....	0.50	0.30	0.46	1.07	1.66	0.56	1.62	0.80	1.20	.....	.....	.....	.....
Wibaux	2,350	0.60	0.30	0.40	.....	7.32	3.70	1.75	0.30	1.55	0.65	2.15	0.10	.....
Yale	.....	0.55	0.30	0.71	2.36	2.04	1.01	1.81	0.18	2.21	0.58	1.99	0.20	13.94

[1] W. Kaucher. [2] S. M. Ruley. [3] F. W. Duenckle. [4] Approximated.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Nebraska.	*Feet.*													
Agee		0.11	0.06	1.04	5.50	1.35	4.35	6.33	1.12	2.73	2.27	2.00	T.	26.86
Albion	1,747	0.23	0.05	0.90	8.27	4.02	5.83	3.38	0.69	.....	2.66	1.10	0.21	.....
Alliance	3,968	0.60	0.09	2.10	0.80	2.00	4.04	3.77	0.26	1.41	0.70	0.39	0.00	16.11
Alma	1,996	.....	.....	.....	6.56	4.31	4.42	5.92	4.97	.....	.....	.....	.....	.....
Ansley	2,307	0.63	0.03	1.95	4.66	3.52	2.92	1.85	0.64	2.55	1.75	0.80	0.02	21.32
Arapahoe	2,173	0.03	.....	0.50	3.20	4.03	7.85	1.65	2.80	1.70	0.80	.....	0.09	.....
Arborville	.....	0.30	0.35	1.45	10.66	7.60	4.10	4.77	1.48	2.85	2.68	2.35	0.16	38.81
Arcadia	2,186	.....	.....	.....	5.22	4.06	7.86	2.11	0.45	2.45	2.20	.....	.....	.....
Ashland	1,100	0.21	0.30	0.98	2.97	10.57	1.80	5.56	2.85	5.45	3.28	1.88	0.35	36.20
Ashton	2,061	0.26	0.03	0.66	5.76	3.65	5.01	2.53	0.63	2.66	1.41	1.12	0.16	23.88
Auburn	1,051	1.23	0.56	2.49	2.68	9.92	3.10	4.45	6.30	4.01	4.22	1.26	0.55	40.77
Aurora	1,792	0.29	0.07	0.69	9.98	5.68	3.40	5.81	2.06	3.10	2.82	1.70	T.	35.60
Bassett	2,323	0.53	0.05	2.20	3.91	0.74	4.29	2.79	0.53	2.11	1.32	1.35	0.25	20.07
Beatrice	1,235	0.40	0.40	1.30	2.08	10.30	5.27	7.52	8.43	2.01	2.68	1.26	0.48	42.13
Beaver City	2,147	0.56	0.06	0.56	4.98	2.68	5.83	3.28	2.54	2.15	0.87	0.33	0.14	23.98
Benkelman	2,968	0.22	0.10	0.70	3.53	2.82	2.78	0.62	1.47	0.75	0.80	T.	0.15	13.94
Blair	1,240	.....	.....	.....	.....	8.32	4.85	6.25	3.09	4.25	3.08	.....	.....	.....
Bluehill	1,967	0.50	0.08	2.07	8.38	5.53	7.52	3.18	4.27	3.05	2.65	1.70	0.30	39.23
Bratton	.....	0.39	0.32	2.52	2.29	11.86	2.52	4.62	4.51	3.11	4.32	1.05	0.50	38.01
Brokenbow	2,477	0.07	0.01	2.45	6.10	2.73	4.89	2.73	.....	2.14	2.35	0.30	0.20	.....
Burchard	1,377	0.09	T.	.....	2.65	11.05	.....	7.50	3.60	2.53	1.90	1.85	0.00	.....
Burwell	2,180	0.35	0.10	1.85	3.85	1.71	4.70	3.77	1.47	0.92	1.29	0.70	T	20.71
Callaway	2,555	0.25	0.05	1.33	5.69	1.53	3.58	1.93	1.95	2.20	1.00	0.20	T.	19.71
Central City	1,708	0.28	0.02	1.30	7.55	5.80	4.72	3.20	1.12	2.37	2.40	2.10	0.14	31.00
Chester	1,618	0.37	0.38	1.65	3.78	5.78	3.92	3.05	4.84	2.96	3.07	1.75	0.17	31.72
Columbus	1,442	0.44	T.	0.48	6.78	5.50	4.42	4.12	2.32	2.37	2.25	2.23	0.03	30.94
Cook	.....	.....	.....	4.07	3.23	8.81	4.86	3.84	4.11	2.79	.....	.....	.....	.....
Cornlea	.....	0.52	0.01	0.80	.....	.....	2.78	4.20	0.45	3.48	1.85	2.38	0.22	.....
Creighton	1,600	.....	0.05	0.48	8.00	3.90	5.01	5.27	[d]1.15	[1]1.51	3.23	2.57	0.12	.....
Crete	1,368	0.54	0.19	2.45	4.41	7.98	3.71	8.21	3.66	3.85	3.89	1.58	0.52	40.99
Culbertson	2,576	0.56	0.00	0.57	4.38	2.77	3.08	0.53	2.67	1.97	1.80	0.10	T.	18.43
Curtis	2,553	0.31	0.12	2.20	5.85	2.55	5.03	3.89	2.71	1.67	3.00	0.60	0.52	28.45
David City	1,619	0.60	0.25	2.70	10.25	7.60	2.80	6.90	1.45	4.25	3.30	2.60	0.25	42.95
Divide	.....	0.24	T.	0.76	4.89	2.60	3.79	2.12	0.48	2.52	1.37	0.65	0.22	19.64
Dunning	2,621	0.12	0.05	1.85	6.43	0.98	4.18	3.03	0.00	0.72	1.30	0.76	0.24	19.66
Edgar	1,722	0.70	0.35	2.35	6.00	6.29	3.50	2.90	5.17	4.14	2.92	2.00	T.	36.32
Elba	.....	.....	.....	.....	8.51	4.06	8.68	3.18	0.56	3.06	2.47	.....	.....	.....
Ericson	2,029	0.05	T.	1.10	6.20	2.71	4.86	4.36	2.07	2.63	1.90	0.60	0.25	26.73
Ewing	1,888	.....	0.00	1.40	8.74	2.06	.....	0.02	2.08	1.96	2.70	0.90	1.00	.....
Fairbury	1,316	0.18	0.18	0.45	2.34	8.75	5.77	2.78	5.49	3.22	2.82	1.14	0.40	33.52
Fairmont	1,652	0.53	0.19	1.97	7.76	5.80	3.91	4.43	1.57	4.26	3.15	1.67	0.20	35.44
Filley	1,397	.....	.....	.....	.....	.....	.....	.....	.....	2.38	2.85	.....	0.45	.....
Fort Robinson	3,764	1.30	0.50	1.50	0.65	2.05	1.30	0.80	0.50	2.20	1.20	0.80	0.00	12.80
Franklin	1,820	0.70	0.00	0.85	6.87	4.28	.....	.....	.....	2.00	1.23	0.70	0.00	.....
Fremont	1,203	.....	.....	.....	.....	.....	.....	7.04	1.50	5.48	2.68	1.04	0.41	.....
Geneva	1,633	0.47	1.25	1.56	7.11	5.38	4.25	1.98	4.96	4.11	3.32	1.98	0.19	36.56
Genoa	1,584	0.46	0.09	0.54	7.57	4.09	5.47	3.27	1.41	2.40	2.03	2.41	0.27	30.01
Gering	.....	0.40	0.36	1.50	0.66	2.42	3.44	1.90	1.31	1.89	0.33	0.48	T.	14.69
Gibbon	2,068	T.	T.	1.70	6.34	7.47	1.93	3.65	2.10	.....	1.20	2.20	0.50	.....
Gothenburg	2,557	0.36	.....	.....	6.81	2.21	3.06	2.39	1.55	1.84	1.85	1.05	T.	.....
Grand Island	1,860	0.14	0.22	1.43	9.38	7.60	3.94	3.67	1.31	2.40	2.76	1.58	0.14	34.57
Greeley	2,021	T.	T.	1.20	7.50	2.54	16.17	4.60	0.05	1.30	1.60	0.45	0.15	35.56
Haigler	.....	0.42	0.10	0.85	2.67	3.14	3.75	1.70	0.94	0.85	0.60	0.02	0.52	15.56
Hartington	1,309	0.25	0.27	1.67	5.68	6.24	7.74	5.56	1.66	1.81	3.28	3.85	0.23	38.19
Harvard	1,812	0.30	0.25	1.45	9.27	6.55	1.85	3.19	2.27	3.04	2.94	1.49	0.06	32.66
Hastings	1,932	0.30	T.	1.69	9.26	6.13	4.20	3.50	2.42	2.52	2.70	1.36	T.	34.08
Hayes Center	.....	0.75	.....	1.20	3.43	1.56	3.31	2.12	2.54	.....	1.45	.....	0.30	.....
Hay Springs	3,821	0.49	0.81	2.30	3.22	1.79	4.85	1.64	0.86	1.73	0.80	1.37	.....	.....
Hebron	1,458	0.40	0.13	1.03	3.52	6.00	4.45	4.63	4.65	3.21	3.31	1.67	0.26	33.26
Hickman	1,252	0.31	0.10	2.50	1.85	7.48	4.53	4.67	2.60	3.74	2.72	1.10	0.45	32.05
Holdrege	2,324	.....	.....	1.20	5.80	4.97	.....	3.12	.....	2.36	0.70	.....	.....	.....
Imperial	3,278	0.50	0.20	1.10	4.30	1.34	4.60	3.15	1.45	1.40	1.00	0.20	0.35	19.59
Indianola	2,372	T.	0.00	1.00	3.70	2.44	3.59	1.37	2.95	1.54	1.87	0.15	T.	18.61
Indianola (near)	.....	.....	.....	.....	.....	3.27	4.66	1.68	3.77	2.27	1.40	.....	.....	.....
Kearney	2,146	0.30	T.	2.10	4.96	0.90	3.26	3.49	3.49	1.98	1.25	1.55	0.54	29.82
Kennedy	.....	0.28	T.	1.95	2.82	1.31	3.91	4.89	0.25	2.76	1.45	1.01	0.30	20.93
Kimball	4,697	0.40	.....	.....	1.75	2.26	1.48	2.43	2.22	1.66	0.20	0.30	0.00	.....
Kirkwood	.....	0.50	0.05	2.25	3.62	0.56	5.24	3.08	1.02	3.24	1.49	1.50	0.08	22.83
Lexington	2,385	0.38	0.20	2.06	4.66	3.90	1.97	2.27	1.69	3.02	1.60	0.28	0.20	22.23
Lincoln [1]	1,181	0.32	0.27	1.28	4.57	10.11	3.05	5.63	3.39	4.57	3.02	1.48	0.37	38.06
Lincoln [2]	1,181	.....	.....	.....	.....	9.77	2.91	5.33	3.93	5.03	3.30	0.79	0.29	.....
Lodgepole	3,820	.....	0.50	2.80	1.73	2.94	3.29	3.01	0.96	1.32	0.60	0.50	T.	.....
Loup	2,067	0.26	T.	1.14	7.11	3.93	11.78	3.86	0.80	2.98	1.82	0.64	T.	34.42
Lynch	.....	0.16	0.03	1.13	6.45	1.89	5.86	4.76	1.25	2.17	1.93	1.47	0.05	27.15
Lyons	1,285	0.30	0.16	0.53	8.25	4.80	5.10	8.98	1.32	3.86	2.55	2.24	0.24	38.33
McCook	2,506	0.24	T.	1.00	4.96	4.01	3.61	0.83	3.32	1.68	0.83	T.	T.	20.48
McCool	1,575	0.53	T.	0.60	[d]8.77	5.83	2.58	3.98	1.77	3.71	2.78	0.91	T.	31.41
Madison	1,585	0.27	T.	0.70	7.23	5.40	4.09	3.15	1.36	2.43	2.55	2.35	0.16	29.69
Madrid	3,294	0.50	0.20	1.90	4.13	1.78	3.75	0.90	2.10	0.95	0.80	0.10	0.40	17.51
Marquette	1,830	0.20	0.22	1.06	7.30	7.15	4.24	5.29	0.90	2.22	2.76	1.65	0.12	33.11
Milford	1,414	0.51	0.26	1.75	4.33	7.84	3.60	7.85	2.74	4.53	2.96	2.45	0.52	39.34
Minden [3]	2,169	0.75	0.15	1.72	10.82	6.28	2.61	3.54	2.61	2.63	1.87	1.77	0.09	34.84
Minden [4]	2,169	0.37	0.02	1.49	8.23	6.65	2.08	3.59	2.60	2.71	1.87	1.64	0.11	31.30
Nebraska City	941	0.28	.....	3.97	2.48	.....	[f]3.64	5.74	5.11	3.49	4.56	0.62	.....	.....
Nemaha	902	0.50	.....	3.40	3.93	11.01	2.48	6.71	5.33	5.60	4.20	0.70	0.55	.....
Nesbit	.....	0.16	0.01	0.58	3.59	1.53	2.42	4.02	0.57	1.97	1.89	0.20	0.80	17.75
Norfolk	1,532	0.27	0.02	0.67	5.92	3.30	5.26	5.65	1.08	2.25	2.50	2.54	0.15	29.61
Norman	2,100	.....	.....	.....	[f]7.69	5.89	2.18	2.98	2.74	2.56	2.17	1.27	.....	.....
North Loup	1,961	0.24	T.	0.83	7.25	3.44	8.00	4.32	0.55	2.44	2.18	1.12	T.	.....
North Platte	2,826	0.27	0.06	0.87	3.44	1.47	2.76	1.86	2.07	1.84	1.51	0.16	0.21	16.52

[1] University of Nebraska. [2] C. W. Ernst. [3] J. Hull. [4] H. Hapeman.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Nebraska—Continued.	*Feet.*													
Oakdale	1,722	0.13	0.05	1.14	6.94	2.51	4.50	6.17	1.12	1.76	2.39	2.66	0.07	29.44
Odell	1,278	0.15	0.18	2.00	2.64	12.33	5.58	9.52	4.85	2.37	2.84	1.33	0.38	44.17
*Omaha	1,123	0.33	0.33	1.31	4.28	9.51	1.90	4.53	3.50	3.97	3.72	2.02	0.50	35.90
O'Neill	1,975	0.32	0.04	1.36	6.86	1.77	5.87	3.85	1.56	3.41	1.84	1.37	0.10	28.35
Ord	2,062	0.21	T.	1.29	4.37	2.38	8.37	2.67	0.32	1.96	2.91	0.99	T.	25.47
Osceola	1,644	0.55	T.	1.33	9.52	7.15	3.49	5.13	1.80	2.78	2.53	2.55	0.10	36.93
Ough	.....	0.71	0.10	0.90	2.58	1.74	3.68	0.73	0.85	0.99	0.60	T.	0.25	13.13
Palmer	1,796	0.00	0.60	0.90	7.55	6.55	4.35	2.50	0.45	2.05	2.50	1.30	0.35	29.10
*Plattsmouth	979	0.54	0.32	2.15	2.87	10.55	3.23	5.55	3.49	4.14	3.56	1.72	0.56	38.68
Potter	4,387	0.27	<0.60	3.20	1.71	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ravenna	1,997	0.35	0.12	1.67	5.72	4.58	2.66	5.37	0.89	3.25	1.45	1.30	0.14	27.50
Redcloud	1,667	0.49	0.05	0.94	5.31	5.48	2.85	1.68	5.69	2.39	2.39	1.56	0.25	29.08
Republican	1,939	0.25	0.00	1.04	7.17	2.75	2.45	5.70	3.68	1.50	1.04	1.45	T.	27.03
Rulo	842	0.40	0.20	0.95	3.46	13.77	.....	4.72	5.47	5.85	2.35	0.32	0.90	.....
St. Libory	1,887	0.21	0.05	0.96	7.66	6.71	2.98	3.09	0.47	2.58	2.33	2.00	0.16	29.24
St. Paul	1,796	.....	.....	.....	7.23	4.57	5.54	3.95	1.05	2.96	2.37	2.04	0.10	.....
Salem	909	0.32	0.15	1.10	2.66	8.16	2.84	6.76	4.80	4.92	2.90	0.48	0.70	35.79
Santee Agency	.....	0.07	0.11	1.23	5.59	4.21	4.25	3.97	1.76	2.40	3.31	2.00	0.05	28.95
Sargent	.....	.....	.....	0.91	.....	2.01	3.97	3.09	0.42	2.25	2.20	1.29	T.	.....
Schuyler	1,357	0.22	0.03	0.84	8.05	6.17	4.52	6.11	1.09	2.76	2.15	3.05	0.00	34.99
Seneca	2,971	0.20	0.20	1.40	6.75	1.00	2.00	4.34	0.20	[c]1.48	0.20	0.50	0.24	18.51
Seward	1,435	0.51	0.02	1.75	4.69	8.08	2.51	4.13	1.79	4.74	3.49	1.29	0.47	33.47
Spencer	.....	0.35	0.08	.....	7.91	2.55	6.05	.....	.....	.....	.....	.....	.....	.....
Springview	.....	0.25	0.04	1.01	4.47	0.92	6.05	3.41	1.27	2.10	1.12	0.92	T.	21.56
Stanton	1,472	0.12	0.18	0.98	5.83	5.45	3.08	6.76	1.65	2.78	2.21	2.79	0.16	31.94
State Farm	.....	0.28	.....	.....	3.99	9.76	2.88	4.29	3.18	4.90	3.06	1.43	0.31	.....
Stockham	.....	.....	.....	.....	.....	.....	.....	3.30	1.20	1.90	2.50	.....	.....	.....
Strang	1,638	0.42	0.38	1.30	5.38	7.79	3.60	2.91	4.80	5.90	3.90	1.85	0.18	38.41
Stratton	2,804	0.42	0.05	0.50	3.85	1.96	2.80	1.07	1.45	1.20	1.25	0.08	0.10	14.73
Stromsburg	1,649	0.47	.....	0.48	9.34	7.26	2.06	5.90	1.80	2.68	1.87	1.91	0.23	.....
Superior	1,574	0.42	0.14	1.80	5.86	9.09	2.72	5.05	6.46	4.88	3.98	1.43	0.00	41.83
Sutton	1,676	0.77	0.76	3.83	9.84	8.41	4.67	5.77	3.12	4.90	3.47	2.13	0.11	47.78
Syracuse	1,059	0.15	0.03	1.37	2.40	8.64	3.47	6.64	1.99	2.79	3.54	1.24	T.	32.26
Tecumseh	1,113	0.80	0.30	2.77	2.44	9.73	3.26	4.58	4.43	3.41	.....	.....	.....	.....
Tekamah	1,060	0.45	0.30	1.26	7.00	7.68	4.25	6.51	2.85	4.62	2.95	2.40	0.30	40.57
Thedford	? 842	0.35	0.10	1.82	4.10	1.80	4.80	6.60	0.20	1.60	1.15	1.15	0.80	24.47
Turlington	1,214	0.57	0.32	2.08	2.91	8.54	2.39	4.78	4.31	4.09	3.62	1.57	0.44	35.62
Valentine	2,593	.....	.....	.....	3.06	0.67	4.48	4.25	0.77	2.73	0.35	2.57	0.46	.....
Wakefield	1,387	0.31	0.20	0.98	5.60	4.65	5.46	6.14	1.83	2.42	3.02	3.17	0.21	33.99
Wallace	3,116	0.50	0.20	2.60	4.59	0.80	3.38	6.06	1.86	0.96	0.70	0.10	0.50	22.25
Weeping Water	1,080	0.59	0.42	1.51	2.85	11.45	2.70	5.75	4.18	4.16	3.01	1.86	0.38	38.86
Whitman	3,588	0.05	T.	1.20	1.02	2.80	2.63	3.46	1.29	1.30	0.70	0.90	0.50	15.85
Wilber	1,325	0.32	0.28	1.32	3.16	7.23	4.35	9.39	5.22	4.98	4.00	1.55	0.45	42.25
Wilsonville	2,298	0.35	0.05	0.35	6.70	3.25	3.60	1.62	3.27	2.07	1.19	0.27	0.00	22.72
Wisner	.....	.....	.....	1.03	7.02	5.44	4.23	8.10	1.30	3.90	2.62	3.00	0.40	.....
Woodlawn	1,186	0.38	0.31	0.96	5.00	7.59	1.30	5.47	3.60	3.98	3.12	1.04	0.35	33.10
York	1,642	0.90	0.00	1.94	11.22	7.19	3.32	3.71	1.25	4.12	2.46	1.40	0.21	37.72
Nevada.														
Austin	6,594	1.39	0.05	1.30	1.41	1.76	0.11	0.85	0.58	0.39	0.00	0.41	0.18	8.43
Battle Mountain	4,511	0.60	0.10	0.85	0.55	0.90	0.00	0.00	0.00	0.00	0.18	0.85	0.20	4.23
Belmont	8,132	1.79	0.01	0.85	0.79	[b]1.23	1.10	2.48	2.02	0.05	0.16	.....	.....	.....
Beowawe	4,695	0.25	T.	0.85	0.15	3.04	T.	0.90	0.20	0.25	0.20	0.20	0.00	6.74
Candelaria	5,783	0.90	T.	0.37	0.35	0.23	0.31	1.03	0.32	0.16	T.	T.	0.50	4.17
Carlin	4,897	0.37	0.05	0.98	0.29	1.00	0.00	0.25	T.	T.	T.	0.17	0.50	3.61
Carson City[1]	4,600	4.82	0.10	2.23	1.47	1.06	0.12	0.63	1.30	0.38	0.30	1.53	0.70	14.64
*Carson City	4,720	5.26	0.02	1.82	1.35	0.93	0.12	0.63	1.30	0.38	0.30	1.58	0.80	14.44
Cloverdale	4,800	0.63	T.	0.75	0.02	8.11	0.07	0.60	0.04	T.	T.	0.25	0.05	10.52
Clover Valley	6,000	1.61	1.62	3.26	2.10	4.08	0.13	0.66	0.54	0.33	0.63	3.43	1.15	19.54
Cranes Ranch	5,350	1.00	0.26	2.31	1.40	2.48	0.16	0.28	0.36	0.23	0.51	0.89	0.38	10.26
Darrough Ranch	4,500	1.05	0.00	0.70	1.00	0.82	.....	1.70	1.02	0.06	0.25	0.11	0.23	.....
Downeyville	4,125	0.68	T.	0.83	0.81	1.16	0.20	0.73	0.02	.....	0.28	0.20	0.30	.....
Duckwater	5,600	.....	.....	.....	.....	1.20	.....	.....	1.04	0.14	T.	0.30	T.	.....
Elko	5,063	0.94	0.30	3.75	1.16	2.71	0.30	0.20	0.50	0.25	0.35	1.60	0.45	12.51
Elko (near)	.....	3.35	0.05	.....	0.50	.....	.....	.....	.....	.....	.....	1.40	T.	.....
Ely	6,000	0.65	0.20	1.00	2.25	3.55	T.	0.79	1.05	0.30	0.70	1.10	0.23	11.82
Empire Ranch	6,995	0.35	0.09	0.39	2.33	6.31	0.07	1.32	2.40	0.04	0.02	0.10	0.10	13.52
Fenelon	6,128	0.98	0.55	2.60	1.45	3.70	0.50	0.15	1.28	0.53	0.40	1.44	0.55	14.13
Golconda	4,392	0.65	T.	1.02	0.88	1.85	0.00	0.00	0.05	0.00	0.30	0.62	0.10	5.47
Halleck	5,229	0.97	0.20	2.82	0.80	2.83	0.32	0.14	0.34	0.22	0.32	0.89	0.22	10.07
Hamilton	7,977	1.71	0.66	1.87	2.68	4.34	.....	.....	.....	.....	.....	.....	.....	.....
Hawthorne[2]	4,569	1.03	0.00	0.26	0.78	1.27	.....	0.82	.....	0.05	0.20	0.75	0.09	.....
Hawthorne[3]	4,569	1.03	0.00	0.16	0.10	1.27	0.05	0.82	1.53	0.05	0.20	0.40	0.09	5.70
Hot Springs	4,072	0.81	0.00	1.12	0.60	0.25	0.00	.....	.....	.....	T.	0.32	T.	.....
Humboldt	4,236	0.71	0.10	1.45	0.86	1.19	T.	T.	0.30	0.21	0.30	1.02	T.	6.14
Keysers Springs	5,400	0.02	0.01	.....	2.10	1.56	.....	.....	.....	.....	0.10	0.17	.....	.....
Knickerbocker Mills	.....	.....	.....	.....	.....	.....	0.19	2.44	1.05	0.12	0.22	0.56	0.47	.....
Lewers Ranch	5,200	10.70	0.30	3.99	3.99	2.83	T.	0.58	0.94	0.68	0.68	3.70	2.11	30.50
Los Vegas	2,074	0.11	0.06	0.36	T.	0.25	0.00	0.61	0.97	T.	0.26	0.24	0.38	3.24
Lovelock	3,977	0.40	0.04	0.46	0.07	1.14	0.00	0.12	0.00	0.00	0.11	0.14	0.20	2.68
Mill City	4,225	0.60	0.10	0.75	0.40	0.00	0.00	0.80	0.00	0.00	0.30	0.70	0.02	3.27
Osceola	6,500	1.36	0.05	0.85	0.60	4.47	0.05	0.75	1.08	0.15	0.37	0.34	0.06	10.13
Palisade	4,821	0.27	0.09	1.85	0.80	1.10	0.00	0.00	0.60	0.10	0.05	1.30	0.27	6.43
Palmetto	6,500	2.10	T.	3.70	0.50	1.45	0.57	2.87	3.05	1.15	0.30	0.35	1.20	17.24
Reese River	.....	1.34	T.	1.45	1.72	2.00	T.	1.61	0.56	T.	T.	0.30	0.09	9.07
Reno	4,484	2.35	0.00	0.95	4.60	1.75	0.00	1.00	.....	.....	.....	.....	T.	.....
Reno State University	.....	2.87	T.	1.15	1.31	1.23	0.00	1.03	0.79	0.93	0.08	0.89	0.31	10.39
Ruby Valley	6,000	0.92	0.32	1.23	1.53	1.70	.....	0.49	0.83	0.17	1.02	2.52	0.48	.....
St. Clair	4,000	1.04	0.00	0.49	0.06	1.68	0.03	0.52	0.18	0.20	0.24	0.37	0.90	4.90

[1] C. W. Friend. [2] Pacific Railway system. [3] C. P. Mengel.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Nevada—Continued.	*Feet.*													
St. Thomas	1,600	0.60	T.	0.60	0.00	T.	T.	0.58	0.48	0.00	0.92	.....	0.30	.....
San Antonio	4,500	1.12	T.	0.84	0.07	[d]0.50	1.80	2.20	1.89	0.95	T.	0.30	0.06	9.82
Silverpeak	4,445	0.06	0.00	0.53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sodaville	4,665	.....	.....	0.29	0.05	0.86	0.40	0.91	0.45	0.10	T.	0.12	0.20	.....
Stofiel	.....	1.88	1.30	3.75	2.45	3.04	0.44	1.10	.....	[f]0.55	0.00	4.29	1.01	.....
Sunnyside	.....	1.03	0.37	0.35	0.52	1.30	0.15	1.71	.....	.....	0.17	.....	.....	.....
Tecoma	4,812	0.43	0.35	0.50	0.30	1.85	2.98	.....	0.20	0.20	0.00	0.40	0.10	.....
Toano	5,975	0.25	1.00	1.25	1.05	2.05	0.80	0.53	0.62	0.25	0.45	1.75	0.55	10.55
Tuscarora	6,400	1.87	0.59	2.81	2.12	[d]2.39	.....	.....	.....	0.56	0.42	3.22	0.42	.....
Tybo	6,500	0.92	T.	0.74	0.47	2.32	T.	2.10	1.42	0.05	0.00	0.12	0.24	8.38
Verdi	4,895	9.40	0.08	2.78	3.66	2.29	0.00	1.11	0.74	1.00	0.18	2.05	1.60	24.89
Wadsworth	4,077	3.22	0.01	0.22	0.35	1.04	0.00	2.04	1.20	0.41	0.10	0.44	0.05	9.08
Wells	5,628	1.55	0.32	1.91	0.20	2.10	0.20	0.10	0.20	0.36	0.62	1.13	0.30	8.99
*Winnemucca	4,340	1.16	0.26	1.43	1.95	2.77	0.18	0.29	0.70	0.67	0.27	1.17	0.23	11.08
New Hampshire.														
Alstead	.....	0.84	4.40	5.83	1.18	1.42	1.44	3.05	5.01	5.60	3.35	2.78	0.88	35.78
Belmont	.....	0.84	4.38	8.45	1.39	2.94	3.14	3.18	2.73	5.44	.....	.....	.....	.....
Berlin Mills	.....	1.61	4.90	8.18	1.80	1.98	2.25	3.45	2.72	2.73	2.43	2.09	.....	.....
Bethlehem	1,470	0.57	2.69	5.06	1.25	2.44	2.09	6.01	3.73	3.98	3.37	2.68	0.98	34.85
Brookline	.....	1.67	6.97	5.54	1.05	2.31	1.92	3.17	2.76	6.71	3.60	3.11	1.78	40.59
Concord	283	1.23	5.80	6.56	1.02	3.34	2.35	3.10	3.75	4.92	4.00	2.97	0.96	40.00
Dublin	.....	1.81	4.82	7.93	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Durham	88	1.15	5.83	6.71	0.98	2.23	3.04	2.86	3.69	9.48	3.50	3.47	1.76	44.70
Grafton	863	0.54	3.74	6.36	0.99	1.63	1.24	2.34	3.70	5.04	5.67	3.69	0.81	35.75
Hanover	603	0.67	3.95	8.25	0.83	1.27	2.31	3.23	3.07	5.36	3.92	2.30	0.71	36.87
Keene	506	0.89	2.88	6.19	1.45	2.05	1.46	3.09	2.81	5.51	3.24	2.37	0.81	32.75
Lakeport	.....	0.92	6.12	8.49	1.31	3.03	2.76	3.27	2.70	4.59	.....	.....	.....	.....
Lancaster	1,100	.....	.....	3.33	1.32	2.42	2.66	4.88	4.37	3.86	3.38	3.64	1.20	.....
Mine Falls	.....	1.92	5.57	6.39	0.92	2.15	1.61	2.99	3.11	6.14	2.84	2.79	1.27	37.79
Nashua	125	1.93	5.61	6.45	1.00	2.02	1.78	2.52	3.40	5.88	2.85	2.52	1.87	37.83
Newton	.....	1.62	5.84	4.44	1.32	2.27	1.62	3.71	2.37	7.09	3.28	3.22	1.48	38.26
North Conway	575	0.85	6.00	9.86	1.46	3.35	2.40	2.75	3.60	5.97	4.18	5.30	1.90	47.62
Pennichuck Station	.....	1.57	5.82	4.42	1.10	2.04	1.18	2.26	3.14	5.18	2.66	2.30	1.98	33.65
Peterboro	724	1.39	4.94	8.35	0.65	2.08	1.59	3.27	1.84	5.31	4.24	2.40	1.33	37.39
Plymouth	500	0.39	5.51	7.83	0.94	1.69	1.34	2.92	3.61	5.55	5.09	5.26	1.07	41.20
Sanbornton	830	0.55	3.81	6.41	1.02	2.83	3.04	3.41	4.04	5.01	5.37	4.01	0.84	40.34
Stratford	950	0.67	3.48	4.52	1.21	2.38	2.79	5.95	3.19	4.01	3.39	3.60	0.96	36.15
Warner	498	.....	.....	.....	0.94	2.34	1.50	2.90	3.31	5.33	4.78	3.56	0.93	.....
Weirs Bridge	.....	0.56	4.24	7.64	1.08	2.80	1.63	3.41	2.73	5.46	.....	.....	.....	.....
West Milan	1,016	2.30	4.83	7.38	2.66	2.23	.....	4.34	3.50	3.74	2.62	3.38	1.37	.....
Wolfboro	.....	0.58	5.93	6.10	0.90	3.09	1.92	2.72	2.27	5.39	.....	.....	.....	.....
New Jersey.														
Asbury Park	22	1.65	7.28	4.89	1.77	3.67	3.59	4.25	0.91	2.98	1.67	2.18	1.52	36.36
	53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.98	0.85	.....
*Atlantic City	36	1.50	6.12	4.68	1.25	2.60	4.30	3.16	2.72	2.28	[d]1.43	1.37	1.09	32.50
Barnegat	50	1.05	6.39	5.44	1.51	2.92	6.99	5.84	2.77	4.48	1.88	2.80	1.64	43.71
Bayonne	10	1.59	.....	3.63	1.17	2.71	4.74	2.81	1.27	1.37	.....	[e]1.40	[j]1.06	.....
Beachhaven	239	0.68	6.90	5.71	1.39	3.82	4.41	13.29	2.32	3.88	3.04	4.50	1.03	50.97
Belvidere	30	2.22	5.89	5.86	1.34	2.14	5.22	3.65	0.50	2.84	2.45	3.12	1.25	36.48
Beverly	39	2.21	6.77	5.65	1.18	2.62	6.60	2.76	1.35	4.16	2.40	3.43	1.38	40.51
Billingsport	351	1.08	5.40	5.47	1.12	3.46	3.68	10.25	1.93	4.74	2.12	4.40	0.89	44.54
Blairstown	413	1.62	8.15	6.86	2.26	4.19	4.96	5.40	2.64	6.25	1.99	4.08	1.45	49.85
Boonton	30	1.81	8.35	5.59	1.11	3.38	7.53	3.19	2.55	4.01	2.28	2.37	1.61	43.83
Bridgeton	31	2.26	6.96	4.74	1.17	1.62	4.82	2.45	0.68	2.71	2.67	3.01	1.00	34.09
Camden	11	1.30	5.55	3.14	0.86	3.30	2.64	6.55	1.02	3.19	4.58	2.15	1.80	35.88
Cape May	19	1.19	4.82	5.21	0.98	2.23	4.46	5.55	0.93	2.70	3.52	2.05	1.15	34.79
Cape May C. H	719	1.89	10.06	6.04	0.69	3.83	5.02	5.77	2.47	8.77	2.24	5.68	1.40	53.86
Charlotteburg	860	1.35	8.25	6.40	1.41	2.72	6.04	6.39	2.80	7.35	2.78	5.36	1.55	52.40
Chester	100	1.68	.....	.....	1.41	3.70	4.93	4.37	2.42	4.81	1.62	2.95	1.59	.....
College Farm	442	1.39	5.69	5.40	0.80	2.86	4.52	7.75	1.93	5.12	3.07	3.62	1.22	43.37
Deckertown	575	2.12	8.39	7.16	0.64	3.48	3.55	4.59	3.27	8.07	2.03	4.45	1.08	48.83
Dover	63	2.56	7.07	5.93	1.25	2.53	7.09	4.66	1.73	3.18	2.83	2.13	1.11	42.07
Egg Harbor City	33	1.39	7.82	5.17	2.30	4.54	7.21	5.26	1.65	4.26	1.81	2.35	2.60	46.26
Elizabeth	45	1.57	8.45	6.05	1.62	4.22	5.87	4.00	2.30	3.46	2.15	2.94	1.92	44.55
Englewood	580	1.47	5.71	6.02	0.89	3.88	5.29	8.06	3.06	5.89	2.45	4.00	1.31	48.03
Franklin Furnace	187	2.26	6.93	4.96	1.92	4.33	3.80	5.15	0.68	4.02	1.99	3.66	0.93	40.63
Freehold	143	1.23	6.76	4.96	1.33	1.62	6.59	4.68	0.97	3.44	2.13	2.27	0.71	36.69
Friesburg	400	1.29	6.21	5.53	0.97	2.37	5.26	7.70	1.15	[e]4.96	1.95	2.77	2.04	42.70
Gillette	80	2.37	5.01	4.82	1.20	4.15	7.41	3.04	1.44	3.15	2.53	2.24	1.65	39.01
Hammonton	213	1.41	6.14	5.17	1.02	2.69	4.77	6.06	2.56	4.17	1.92	2.56	1.40	39.87
Hanover	85	2.30	6.22	5.70	1.63	4.07	4.00	5.36	0.71	4.65	2.18	3.28	1.66	41.76
Hightstown	106	2.13	6.08	4.56	1.38	3.51	3.46	3.91	0.70	3.78	1.82	3.05	1.60	35.96
Imlaystown	508	1.29	7.60	5.28	1.54	3.40	3.30	10.64	2.54	6.93	1.99	4.47	1.05	50.03
Junction	81	.....	.....	4.95	1.67	2.41	3.80	5.02	0.58	6.04	2.23	4.01	1.53	.....
Lambertville	.....	.....	.....	.....	.....	[c]2.37	13.07	5.00	3.09	[f]2.21	.....	.....	.....	.....
Linwood	96	1.43	6.94	4.68	0.89	3.24	7.70	5.42	2.78	2.43	.....	.....	.....	.....
Millville	71	2.81	6.41	6.13	1.25	2.77	4.48	3.12	0.76	4.15	2.54	3.18	1.25	38.85
Moorestown	55	1.32	7.18	.....	1.22	3.29	6.59	8.68	2.73	4.08	1.62	2.89	1.67	.....
Newark[1]	30	1.26	6.82	6.45	1.27	3.57	6.80	10.28	2.91	4.18	1.76	3.14	1.72	49.96
Newark[2]	61	1.65	6.30	5.83	1.53	3.96	4.91	4.51	2.33	5.02	1.66	3.40	1.67	42.77
New Brunswick[3]	65	1.57	5.73	5.01	1.80	4.02	4.86	4.87	2.28	[c]3.84	1.70	3.24	1.65	40.57
New Brunswick[4]	678	0.63	8.56	6.17	.....	2.81	4.83	.....	.....	.....	.....	4.50	1.24	.....
Newton	12	2.30	7.38	5.18	1.05	2.99	13.45	3.97	1.98	2.52	3.05	1.43	1.55	46.85
Ocean City	16	1.38	7.64	5.15	2.09	2.48	4.41	6.31	1.44	4.71	1.50	3.32	1.87	42.25
Oceanic	110	0.84	8.09	6.84	1.09	3.75	4.96	4.88	2.39	4.36	1.81	3.44	1.48	43.93
Paterson	61	1.58	.....	.....	.....	.....	6.68	4.00	2.82	5.07	1.96	2.98	1.80	.....
Perth Amboy														

[1] F. W. Ricord. [2] G. C. Sonn. [3] C. V. Myers. [4] Mrs. G. H. Cook.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
New Jersey—Continued.														
	Feet.													
Plainfield	100	1.68	7.15	6.30	1.28	3.18	6.91	7.05	2.08	5.72	2.16	2.96	1.44	47.91
Rancocas	68	1.78	4.89	4.76	1.11	2.57	4.50	3.62	0.54	3.84	2.05	2.93	1.51	34.10
Rivervale	70	0.86	9.60	7.38	1.71	4.03	6.10	4.48	2.93	4.51	2.12	3.09	2.70	49.51
Sergeantsville	345	.....	.....	.....	.....	.....	6.09	4.88	1.45	6.09	2.12	4.00	1.38	.....
Somerville	91	1.46	6.74	5.95	1.19	3.83	6.76	7.09	2.51	4.67	1.56	3.26	1.02	46.04
South Orange	187	1.45	7.85	4.58	1.47	2.21	5.85	7.93	1.81	4.90	1.50	3.03	1.83	44.41
Staffordville	29	.....	.....	4.48	1.98	2.88	4.46	3.53	1.37	3.42	3.16	1.93	0.94	.....
Toms River	33	1.75	7.61	5.72	1.62	3.87	4.81	2.86	1.22	3.79	2.81	2.27	0.93	39.26
Trenton	60	1.32	5.36	4.85	1.62	4.13	3.72	5.56	1.21	4.12	1.97	2.66	1.73	38.25
Vineland	118	1.90	6.28	4.50	1.21	2.75	9.67	3.31	1.65	2.87	2.53	2.15	0.88	39.70
Whiting	174	2.12	4.90	4.58	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Woodbine	43	2.44	6.85	5.77	1.15	3.26	5.76	5.32	1.12	2.63	3.38	1.70	1.18	40.56
New Mexico.														
Albert	4,700	0.35	0.11	0.08	1.02	0.23	1.87	2.56	0.51	4.40	3.37	0.43	3.25	18.18
Albuquerque	5,008	0.06	0.07	0.01	T.	0.07	0.32	1.98	0.81	0.72	2.55	0.05	0.38	7.02
Alma	5,500	0.21	T.	0.14	0.03	T.	0.30	1.70	4.88	1.24	5.97	0.27	0.35	15.09
Aztec	5,590	0.16	0.23	0.10	0.05	T.	T.	1.02	0.87	1.32	2.55	0.32	0.66	7.38
Bernalillo	5,260	0.01	T.	0.00	0.00	T.	0.62	0.80	1.17	1.37	3.71	T.	0.21	7.89
Bluewater	6,200	.....	.....	.....	.....	0.00	.....	2.05	1.20	2.25	2.90	T.	0.30	.....
Buckman	8,500	.....	.....	.....	.....	.....	.....	.....	1.04	1.28	1.87	1.04	0.68	.....
Chama	7,862	1.65	2.10	2.20	2.30	0.05	0.19	2.16	0.78	1.80	1.47	2.15	1.80	18.65
Clayton	5,178	.....	0.25	0.23	2.68	0.12	1.51	2.63	0.45	.....	2.00	0.90	0.22	.....
Deming	4,315	0.60	T.	0.00	0.20	0.00	0.15	4.30	1.95	2.00	3.25	0.25	0.00	12.70
East Lasvegas	.....	0.19	0.32	0.83	1.00	0.11	2.02	3.87	2.13	4.38	4.35	0.02	0.51	19.73
Eddy	3,122	0.14	0.68	0.00	0.00	0.00	2.57	1.02	0.65	2.87	2.22	0.00	0.82	10.97
Engle	4,750	0.00	0.00	0.00	0.00	0.02	0.27	2.84	2.10	1.10	4.10	0.15	0.26	10.84
Espanola	5,590	0.04	0.32	0.06	0.50	0.04	0.92	1.36	0.71	1.18	2.42	T.	0.53	8.08
Estalina Springs	.....	.....	.....	.....	.....	.....	.....	5.87	4.26	3.48	4.12	0.01	0.15	.....
Fort Bayard	6,040	0.25	0.10	T.	T.	0.10	.....	7.25	2.35	2.35	6.15	T.	0.10	.....
Fort Union	6,750	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.52	T.	0.08	.....
Fort Wingate	6,649	0.12	1.20	0.45	0.90	T.	T.	1.94	2.05	1.17	2.35	0.30	0.15	10.63
Galisteo	6,074	0.28	0.90	0.03	0.60	T.	0.84	4.21	1.07	1.19	2.32	0.00	0.78	12.22
Gallinas Spring	5,272	T.	0.02	0.15	0.52	0.02	1.68	3.46	4.74	2.69	2.72	0.04	1.24	17.28
Gila	4,040	0.14	0.31	0.33	0.01	0.17	1.33	3.93	3.39	2.18	5.27	0.44	0.37	17.87
Hillsboro	5,100	0.18	0.23	0.06	T.	T.	0.35	3.01	1.85	2.06	4.44	0.01	0.02	12.21
Labelle	9,626	.....	0.16	0.89	1.30	0.60	1.13	5.05	1.60	1.36	2.67	0.51	2.04	.....
Lasceruces	3,500	0.31	0.11	0.00	0.11	0.10	1.01	2.50	0.47	1.24	2.14	0.00	T.	7.99
Lordsburg	4,245	T.	T.	0.48	0.00	0.20	0.30	1.91	2.34	1.51	6.46	0.20	0.15	13.55
Los Lunas	4,900	T.	T.	0.00	0.00	0.00	0.10	1.65	0.95	1.55	3.00	T.	0.40	7.65
Lower Penasco	5,250	0.80	0.40	0.10	T.	T.	2.05	3.56	1.38	1.57	6.01	T.	0.40	16.27
Monero	7,356	0.78	0.54	0.42	0.44	0.05	0.22	1.71	1.22	1.15	3.82	1.06	1.13	12.54
Ocate	7,500	0.05	0.30	0.55	0.75	0.01	1.90	3.15	3.16	3.71	3.81	0.20	1.16	18.75
Puerto de Luna	5,350	0.15	0.05	0.10	0.15	T.	2.00	2.13	2.42	2.00	3.40	0.10	2.05	14.55
Raton	6,400	0.13	2.05	T.	2.03	0.00	0.14	1.08	.....	1.14	0.09	T.	0.25	.....
Rincon	4,030	0.09	0.01	0.05	0.08	0.04	0.32	3.63	0.31	.....	1.83	0.12	0.01	.....
Roswell	3,570	0.60	0.14	0.02	T.	0.12	1.97	1.79	0.40	1.98	5.46	0.00	0.64	13.12
San Marcial	4,554	0.01	T.	T.	0.00	T.	0.18	1.29	0.59	0.95	3.53	T.	T.	6.55
*Santa Fe	6,998	0.36	0.57	0.53	1.11	0.27	0.69	3.78	1.47	1.39	3.19	0.25	0.67	14.28
Shattucks Ranch	6,000	0.52	1.26	0.33	0.01	T.	3.00	5.84	1.68	4.25	7.64	0.17	0.67	25.37
Socorro	4,600	.....	.....	.....	.....	.....	0.43	3.00	0.88	1.35	4.89	0.00	0.02	.....
Springer	5,857	0.17	0.66	0.30	0.27	0.14	1.61	2.12	1.35	2.32	3.82	T.	2.10	14.86
Sulphur Hot Springs	.....	0.70	1.39	1.96	.....	0.10	0.27	.....	.....	.....	.....	.....	.....	.....
Taos	6,983	0.52	0.39	0.48	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Valley Ranch	7,000	.....	1.00	0.12	0.16	0.12	0.73	5.83	2.13	3.00	2.71	T.	0.58	.....
White Oaks	6,470	.....	.....	.....	.....	T.	0.45	2.01	2.22	1.17	4.01	0.34	1.12	.....
Winsors Ranch	8,000	0.25	0.30	0.49	0.65	T.	1.73	8.77	2.24	3.40	2.65	0.34	1.26	22.08
New York.														
Adams	585	.....	.....	.....	.....	1.99	1.88	4.33	2.60	3.36	1.77	2.89	1.65	.....
Addison	1,000	1.47	3.18	3.05	1.07	4.50	5.78	4.45	0.77	3.67	5.73	0.83	0.88	35.38
Akron	765	3.08	3.02	3.95	1.04	1.96	2.32	5.45	3.29	6.03	1.80	2.53	1.26	35.73
*Albany	85	0.98	4.03	4.66	0.98	1.55	2.49	3.57	2.25	3.31	1.53	1.80	0.73	27.88
Alfred	1,795	2.51	3.28	4.33	1.69	2.62	4.07	4.49	1.11	5.04	5.02	2.15	1.64	37.95
Angelica	1,340	2.34	4.16	4.21	1.58	1.99	3.26	5.66	2.63	4.96	3.18	2.08	1.23	37.28
Appleton	301	3.10	3.25	2.65	0.43	2.96	1.60	5.27	0.72	4.17	1.15	2.00	1.11	28.41
Arcade	1,707	2.35	3.86	3.50	1.36	2.48	3.19	6.39	3.77	6.18	3.22	3.68	1.66	41.64
Atlanta	.....	2.13	2.50	2.41	.....	.....	.....	.....	2.61	2.66	3.42	1.82	0.85	.....
Avon	585	1.97	.....	3.23	1.05	1.98	1.97	4.87	3.92	3.82	1.48	1.82	0.78	.....
Baldwinsville	390	3.53	6.39	4.52	0.76	2.70	1.49	4.34	3.06	5.63	2.07	3.07	1.72	39.28
Bedford	290	1.40	9.51	7.03	0.91	3.16	4.52	7.29	3.14	5.69	2.35	4.69	2.18	51.87
Binghamton[1]	870	.....	4.28	4.68	0.63	3.11	2.64	3.85	1.42	4.62	3.08	2.66	1.20	.....
*Binghamton	875	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.63	1.78	0.77	.....
Bloomville	1,550	2.26	3.64	2.84	1.69	2.76	3.31	5.82	2.49	4.06	3.25	3.86	.....	.....
Bolivar	1,800	1.95	2.93	3.79	1.48	4.70	4.29	7.75	1.25	4.86	4.03	1.42	1.38	39.83
Boyds Corners	.....	1.09	8.41	8.30	1.13	3.48	3.47	3.98	4.60	6.54	2.21	3.96	2.72	49.89
Brentwood	80	.....	.....	2.82	0.73	2.18	5.00	4.70	4.20	.....	4.10	5.10	2.70	.....
Brookfield	1,350	1.50	5.69	4.23	1.20	1.54	2.75	3.27	2.82	1.97	1.37	.....	.....	.....
Brooklyn	107	1.54	6.19	6.14	0.87	2.31	6.67	4.23	3.22	4.49	1.73	3.06	1.70	42.15
*Buffalo	690	3.28	5.02	3.61	0.93	2.51	1.46	6.35	3.68	4.39	1.90	3.32	0.84	37.29
Canton	304	2.25	5.45	4.49	2.66	1.51	3.39	3.25	3.89	5.46	1.02	3.26	0.80	37.43
Carmel	450	1.10	7.69	6.90	1.20	2.79	3.32	3.54	4.32	5.18	2.63	3.43	2.10	44.20
Catskills	450	.....	.....	.....	.....	.....	.....	5.09	2.30	5.24	2.39	3.46	1.35	.....
Cherry creek	.....	3.60	5.62	4.29	2.69	3.22	2.93	5.22	3.63	4.64	2.54	4.09	2.97	45.44
Cooperstown	1,250	1.48	5.36	4.74	1.25	2.33	4.70	4.60	3.49	4.33	2.23	3.56	1.21	39.28
Cortland	1,120	1.86	4.50	4.54	0.93	2.73	3.44	4.38	2.15	3.70	3.32	3.17	2.32	37.02
De Kalb Junction	441	1.40	3.81	3.30	1.28	1.84	5.31	4.56	3.03	5.61	1.08	2.76	0.91	34.89
Dempster	.....	1.61	4.76	3.53	1.13	2.45	2.33	5.97	2.47	4.31	2.31	3.33	3.82	36.02
Deposit	1,009	1.30	3.25	3.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[1] Superintendent State hospital.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
New York—Continued.	*Feet.*													
Eagle Mills	.....	1.30	6.53	2.60	1.60	0.80	4.75	3.23	3.17	4.04	2.83	[2.00]	0.35	[33.20]
Easton	.....	0.75	4.61	4.52	.....	.....	.....	5.76	3.78	5.30	3.17	4.30	1.20	.....
Elka Park	.....	.....	.....	.....	.....	.....	.....	7.12	3.62	7.42	.....	.....	.....	.....
Elmira	863	1.56	3.40	3.22	0.77	3.14	3.31	5.55	0.94	2.73	4.86	1.40	0.61	31.49
Fleming	1,000	1.80	4.29	3.95	1.40	2.42	2.41	4.29	2.72	4.93	3.10	2.88	0.40	34.59
Fort Niagara	263	2.80	2.71	2.54	0.51	2.36	1.79	3.77	1.00	3.71	1.39	1.86	0.56	25.00
Friendship	1,550	2.03	3.23	3.45	1.58	3.09	3.22	4.54	1.83	5.65	4.03	2.29	1.40	36.34
Fulton	318	3.93	7.35	4.74	.....	2.94	2.49	3.64	2.76	5.88	2.52	4.11	2.29	.....
Glens Falls	340	1.08	5.41	6.52	1.20	1.53	3.01	4.53	2.80	4.81	3.65	5.55	1.29	41.38
Gloversville	850	1.47	5.90	6.59	0.96	3.19	3.79	4.95	2.01	6.21	3.06	5.37	1.67	45.17
Hamilton	920	1.38	3.02	3.52	0.90	2.72	.....	.....	.....	.....	.....	.....	.....	.....
Haskinville	.....	2.16	3.41	2.43	0.64	1.72	3.19	5.46	1.86	4.84	3.80	1.46	0.99	31.96
Honeymead Brook	450	0.91	5.47	5.34	0.83	3.17	2.40	7.60	4.35	7.21	2.96	2.24	1.47	43.95
Humphrey	1,950	2.43	4.83	3.33	1.31	3.35	3.63	7.50	4.49	5.05	3.00	2.93	1.62	43.47
Ithaca	810	1.46	4.61	4.75	1.02	2.64	4.26	3.69	2.43	3.84	4.37	2.00	1.00	36.17
Jamestown	1,328	3.08	5.57	5.21	2.48	3.77	3.39	7.96	3.46	5.48	2.17	3.70	2.63	48.90
Kings Station	1,324	1.15	6.20	6.40	0.70	3.47	2.21	4.30	2.19	6.79	4.25	6.17	1.17	45.00
Lebanon Springs	930	0.87	4.92	5.22	1.86	1.50	4.49	4.26	4.48	5.83	3.07	3.15	0.91	40.56
Lockport	650	.....	.....	.....	0.40	1.15	1.43	6.50	1.36	4.45	1.27	2.12	1.35	.....
Lowville	900	2.32	4.73	4.88	0.80	2.03	1.83	3.50	2.45	3.09	2.15	5.23	1.46	34.47
Lyons	407	3.57	4.28	5.25	1.02	2.27	2.42	.....	3.05	3.72	1.26	3.24	1.64	.....
Madison Barracks	266	1.05	5.30	1.96	0.38	2.41	1.54	4.02	3.70	5.84	2.24	2.96	1.61	33.01
Malone	810	1.34	5.27	4.75	2.17	1.26	4.57	5.71	3.63	.....	.....	.....	.....	.....
Manhattan Beach	.....	2.50	.....	3.93	1.93	1.94	4.91	3.59	2.92	4.37	1.64	2.10	1.46	.....
Middletown	700	1.89	7.00	8.09	1.40	2.86	6.34	5.07	.....	.....	3.52	.....	.....	.....
Mohonk Lake	1,245	1.49	4.99	11.07	.....	2.11	2.22	4.32	2.70	6.64	3.11	4.79	1.90	.....
Mount Morris	525	2.60	5.35	1.92	0.46	1.66	2.82	4.91	[d]1.85	3.94	1.41	2.60	1.50	31.02
Newark Valley	966	1.30	4.55	3.98	0.39	2.95	3.00	5.71	1.08	3.24	4.26	2.21	1.22	33.89
New Lisbon	1,234	0.86	4.31	3.96	0.80	2.42	3.77	5.12	2.45	5.07	2.09	2.96	0.95	34.76
*New York	314	1.25	5.50	6.13	1.24	2.01	6.38	4.45	2.46	3.04	1.71	2.12	1.70	37.99
Niagara Falls	574	.....	.....	.....	.....	.....	.....	.....	2.11	3.98	2.03	2.66	1.09	.....
North Hammond	300	1.06	3.20	3.34	1.33	2.78	2.36	2.43	4.06	4.50	1.35	2.31	1.02	29.74
North Lake	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.59	2.90	6.21	2.70	.....
Number Four	1,571	3.04	7.93	6.55	1.84	2.16	2.81	7.05	3.47	5.01	3.44	4.75	2.59	50.64
Ogdensburg	258	1.09	.....	.....	0.72	2.10	2.57	3.98	4.76	3.64	0.73	3.01	1.06	.....
Oneonta	1,100	.....	7.44	4.79	1.39	2.25	3.39	7.02	3.61	3.13	2.26	2.20	0.96	.....
*Oswego	335	2.04	4.90	4.79	1.06	2.46	1.57	5.89	3.00	4.05	1.45	3.95	3.16	38.32
Oxford	550	1.99	4.97	5.56	0.77	3.53	2.96	5.37	2.71	2.17	2.69	2.66	1.72	37.10
Palermo	460	2.00	5.13	3.67	0.41	2.36	2.31	5.07	2.13	2.51	2.02	3.60	2.36	33.57
Perry City	1,038	1.68	3.58	3.70	1.58	3.81	3.67	4.18	2.54	3.97	4.07	2.44	1.40	36.62
Phœnix	.....	1.52	5.23	6.26	0.90	2.59	1.54	2.35	3.27	5.15	2.46	4.27	0.86	36.40
Pine City	.....	1.82	4.04	3.16	0.97	.....	.....	.....	.....	3.35	5.04	0.93	0.88	.....
Pittsford	502	*1.91	4.29	4.84	0.89	2.05	2.07	5.04	3.34	3.73	1.19	2.28	2.04	33.67
Plattsburg Barracks	125	2.05	6.21	4.95	0.85	1.85	2.80	5.00	5.95	2.85	1.68	2.19	0.87	37.25
Port Jervis	470	1.55	6.51	6.60	1.63	2.88	5.54	8.71	2.51	5.43	3.53	5.31	1.14	51.34
Potsdam	300	1.80	4.66	3.81	1.37	1.46	2.76	3.13	3.31	5.10	1.14	2.02	0.83	31.39
Poughkeepsie	180	0.88	5.98	6.20	1.11	2.50	2.71	3.33	2.28	5.70	2.66	1.45	1.67	36.47
Ridgeway	.....	3.00	2.95	2.00	0.57	2.51	2.28	6.18	1.11	4.13	0.96	2.38	0.89	28.96
*Rochester	523	3.38	5.37	6.32	1.09	1.64	2.80	4.75	2.71	3.50	0.58	2.49	2.21	36.84
Rome	445	2.17	7.59	4.74	1.25	2.85	1.51	6.04	1.92	4.57	1.90	5.06	2.52	42.12
Romulus	719	2.34	3.66	4.47	2.90	4.50	2.43	4.92	3.17	5.10	3.30	2.92	2.08	41.79
Rose	386	2.63	4.87	4.73	0.98	3.04	1.32	4.71	2.68	4.59	1.76	3.64	2.07	37.02
Saranac Lake	1,606	1.11	4.28	4.31	1.37	1.98	3.70	4.19	2.78	4.75	1.31	2.80	1.44	34.02
Scottsville	563	.....	.....	.....	0.90	1.44	3.68	4.24	2.44	3.36	0.59	.....	.....	.....
Setauket	40	1.48	6.46	4.81	1.02	3.10	4.10	2.74	2.35	3.62	2.87	3.21	1.62	37.38
Sherwood	799	1.82	5.09	4.85	0.63	3.03	2.97	5.41	2.64	4.33	3.66	2.14	1.06	37.63
Skaneateles	.....	2.08	3.84	5.56	0.97	2.15	2.31	5.39	4.05	5.08	3.48	2.73	1.44	39.08
South Canisteo	1,480	2.76	5.62	3.62	1.25	4.03	6.22	5.01	1.62	5.10	6.49	1.82	1.14	44.68
Southeast Reservoir	.....	1.30	7.18	6.80	1.48	2.93	4.00	4.28	3.74	5.17	2.39	3.38	2.03	44.68
South Kortright	1,700	.....	4.81	3.76	1.48	2.94	2.75	5.50	2.12	3.66	2.35	2.83	1.37	.....
Turin	.....	4.42	9.11	4.63	1.48	2.96	.....	.....	.....	.....	.....	.....	.....	.....
Tyrone	.....	1.67	2.28	.....	.....	1.90	3.30	4.73	2.18	3.78	4.02	.....	1.08	.....
Varysburg	.....	3.38	4.93	3.95	1.93	3.27	3.06	5.71	3.79	5.15	2.63	.....	.....	.....
Victor	.....	2.36	4.72	.....	0.92	2.33	2.05	4.14	4.29	.....	1.61	.....	.....	.....
Wappingers Falls	.....	1.36	6.19	7.84	1.18	3.58	3.52	5.40	2.46	7.01	3.34	3.17	1.93	46.98
Warwick	502	0.97	4.97	4.86	1.49	2.83	6.21	6.05	2.19	8.12	2.66	3.67	1.22	45.24
Watertown	486	.....	.....	5.23	1.37	2.36	3.28	3.71	3.26	4.43	1.72	4.42	1.48	.....
Waverly	825	1.66	4.07	3.40	1.18	2.41	2.85	5.81	1.57	3.57	4.90	2.58	1.01	35.01
Wedgwood	1,350	1.72	5.02	3.43	2.52	2.98	6.23	5.02	1.54	5.02	4.42	2.03	1.42	41.35
Westfield	758	2.00	4.65	2.58	1.22	1.94	2.90	3.67	4.05	4.73	1.40	4.81	1.36	34.71
Westpoint	167	0.83	4.46	12.02	1.98	2.89	4.07	2.50	1.96	5.74	2.36	5.10	1.63	45.54
Willets Point	405	1.10	7.99	7.41	1.13	2.66	6.01	5.79	1.64	5.68	2.43	2.62	0.50	44.96
North Carolina.														
*Asheville	2,250	3.38	2.84	1.92	2.50	4.11	4.46	7.26	0.87	3.87	0.87	5.57	0.84	38.49
Beaufort	12	.....	.....	2.52	1.87	0.87	2.69	7.52	1.93	5.44	3.07	2.58	5.77	.....
Biltmore	2,150	.....	.....	.....	.....	2.77	3.65	9.03	1.58	2.97	0.65	5.57	0.70	.....
*Bryson City	2,000	2.68	5.48	3.92	2.95	1.45	0.05	10.30	3.19	3.70	1.09	8.05	1.02	52.88
*Chapelhill	500	3.39	6.46	2.54	2.23	6.80	5.06	8.52	1.28	8.39	1.08	3.09	2.23	51.07
*Charlotte	773	2.26	5.40	1.55	1.90	1.68	3.35	6.38	1.05	4.69	0.98	3.67	1.87	34.78
Currituck Inlet	.....	0.65	4.13	1.10	1.60	3.92	3.60	.....	.....	.....	.....	.....	.....	.....
Edenton	30	[12]2.14	4.07	2.26	2.13	5.64	4.84	5.60	[12]2.17	5.91	2.70	3.76	3.11	44.93
Experimental Farm	475	3.32	6.35	2.93	1.73	5.26	3.85	5.28	2.58	3.44	.....	3.58	1.96	.....
*Fairbluff	67	3.36	6.33	2.05	1.21	2.95	4.06	7.14	5.48	6.26	1.33	4.76	3.46	48.39
Falkland	.....	2.27	7.09	3.09	2.63	11.22[e]	3.21	4.10	4.90	5.56	3.20	.....	4.15	.....
*Fayetteville	170	2.98	5.52	2.13	1.15	8.06	7.15	5.52	1.74	9.01	1.36	2.51	3.45	51.58
Flatrock	2,214	.....	.....	.....	1.97	4.28	6.37	13.77	3.12	6.70	2.08	.....	.....	.....
*Goldsboro	102	.....	.....	.....	.....	4.89	3.78	5.06	2.00	4.38	1.79	2.51	.....	.....

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
North Carolina—Continued.	Feet.													
*Greensboro	843	2.16	5.53	1.91	2.74	2.85	8.51	9.55	1.18	7.73	1.20	4.11	1.34	48.81
Greenville	75	2.81	3.68	2.59	6.00	8.42	4.44	2.99	3.12	3.35	2.01	.....	2.82	.....
*Hatteras	11	4.05	5.96	3.52	1.71	1.50	2.34	6.25	1.44	3.75	5.28	3.86	5.59	45.25
Henderson	490	3.75	6.20	3.90	1.83	5.66	5.60	8.16	1.56	4.42	1.37	2.04	2.85	47.34
Highlands	3,817	4.24	6.58	2.82	0.92	4.66	6.74	8.56	1.54	4.96	4.40	11.74	1.21	58.37
Highpoint	3,098	.....	5.40	3.05	1.20	.....	.....	.....	.....	.....	.....	.....	.....	.....
Horse Cove	2,800	4.74	6.19	2.80	1.86	7.19	5.90	11.58	1.26	4.02	3.89	12.15	1.29	62.87
Jacksonville	.....	.....	.....	.....	3.59	3.67	3.20	13.67	3.04	4.04	2.21	3.51	5.33	.....
Jefferson	.....	.....	4.44	5.08	1.10	2.72	5.58	8.83	2.58	8.00	.....	.....	.....	.....
*Kittyhawk	9	2.77	7.16	2.41	2.04	4.23	3.62	9.77	2.65	3.63	3.59	3.13	4.33	51.33
Lenoir	1,186	2.32	4.73	2.87	2.69	2.80	2.70	7.83	3.24	5.74	1.01	6.61	1.80	44.44
Linville	3,800	3.82	5.66	3.58	4.80	2.67	4.62	11.24	1.58	9.38	1.58	6.74	1.62	57.29
Littleton	380	3.00	5.60	3.26	1.20	5.71	3.60	7.12	3.88	5.93	1.49	2.33	3.76	46.88
Louisburg	375	2.97	6.58	2.48	1.46	7.00	4.72	7.22	1.27	3.15	1.76	2.85	2.91	44.37
*Lumberton	102	4.65	5.15	1.80	0.89	2.99	4.51	4.81	4.28	5.41	.....	.....	.....	.....
Lynn	1,500	3.61	5.46	2.34	2.78	5.43	6.31	9.87	1.35	3.34	2.66	10.21	1.02	54.38
Marion	1,425	2.25	3.28	2.26	2.62	2.98	8.36	7.28	2.02	3.43	1.46	9.60	1.85	47.39
Mocksville	651	2.24	5.55	2.04	1.27	2.12	4.11	7.17	2.71	5.09	0.74	5.59	1.54	40.17
*Moncure	145	1.53	6.37	2.30	1.61	3.72	5.13	6.77	2.63	6.78	1.60	4.04	1.68	44.16
Monroe	586	.....	5.53	1.50	3.00	4.24	7.38	9.21	1.42	.....	1.58	3.37	2.37	.....
Morganton	1,135	3.35	4.64	3.93	1.58	2.72	4.13	9.47	1.08	7.44	0.76	6.47	2.23	47.80
Mountairy	1,048	1.96	4.66	5.01	0.94	1.60	6.85	7.89	3.27	7.91	0.45	7.05	1.22	48.81
Mount Pleasant	650	2.06	5.89	2.19	1.19	2.48	4.33	6.83	2.86	3.88	0.95	4.61	1.52	38.79
*Murphy	1,614	2.64	4.13	2.62	3.23	3.15	6.33	9.82	2.21	3.55	2.07	8.71	1.16	49.62
*Newbern	12	3.55	4.65	1.87	2.37	1.99	2.02	11.61	3.86	4.37	2.17	1.52	4.29	44.27
*Oakridge	885	1.82	9.40	2.75	1.88	3.63	10.08	8.75	0.73	9.57	1.26	4.44	1.67	55.98
Pantego	.....	3.31	3.72	.....	3.77	3.55	11.57	9.92	6.30	5.30	3.26	2.25	4.20	.....
Pittsboro	480	3.80	6.82	2.90	1.42	5.50	7.11	8.80	2.66	6.15	1.28	4.73	1.94	53.11
*Raleigh	388	2.87	6.73	3.26	1.50	6.53	3.41	5.23	4.19	3.78	2.07	2.50	1.84	43.91
Rockingham	210	1.12	5.90	1.88	2.31	3.75	6.24	9.82	4.42	6.36	1.90	3.94	2.29	49.93
Roxboro	600	2.96	5.15	2.10	2.79	4.30	4.28	12.56	0.80	5.79	0.36	3.65	2.01	46.75
Salem	1,000	1.98	6.20	2.33	2.11	1.34	6.96	6.45	1.30	5.79	1.34	3.78	1.72	41.30
Salisbury	760	2.04	5.93	2.42	1.09	0.98	3.91	9.28	2.14	5.63	1.00	4.35	1.50	40.27
Saxon	900	1.92	4.55	2.98	1.84	4.26	6.81	10.44	1.98	8.80	0.62	5.29	0.58	50.07
Selma	225	2.80	7.10	2.23	2.58	3.90	2.52	3.23	1.80	1.80	2.25	3.05	4.75	38.01
Settle	.....	1.63	6.25	3.23	2.72	1.42	6.67	11.08	0.80	6.93	1.00	4.74	2.08	48.55
Skyuka	3,200	4.42	3.82	1.83	2.90	7.07	6.39	11.04	3.00	4.45	2.43	10.76	0.60	58.71
Sloan	50	3.08	6.42	2.10	3.65	3.46	2.92	9.51	1.95	3.82	3.64	4.22	4.53	49.30
Soapstone Mount	.....	2.57	6.30	2.76	1.45	5.10	5.52	10.19	1.44	8.11	1.47	4.39	1.80	51.10
Southern Pines [1]	400	3.02	.....	0.90	0.50	3.40	.....	7.90	.....	5.00	2.10	4.89	2.98	.....
Southern Pines [2]	400	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.91	4.27	2.45	.....
Southport	34	4.42	5.67	2.66	0.90	0.52	7.02	7.46	2.02	2.99	2.72	4.07	4.14	44.59
Springhope	.....	1.85	6.15	1.60	1.50	4.65	5.45	3.40	2.95	6.50	1.45	2.55	3.30	41.35
Tarboro	50	2.45	6.35	1.69	.....	8.56	5.16	4.71	2.09	6.20	2.38	4.94	4.36	.....
Waynesville	2,756	1.91	4.31	3.06	1.81	6.11	5.14	12.05	0.79	4.14	0.71	6.20	0.79	47.02
*Weldon	81	2.61	6.84	3.01	1.94	7.23	6.17	9.02	2.34	6.48	1.59	1.79	3.91	52.73
Wilkesboro	.....	.....	.....	.....	.....	.....	4.04	9.85	2.59	.....	.....	[c]4.40	.....	.....
Willeyton	45	.....	4.40	2.15	1.27	10.61	10.18	7.42	1.36	5.47	1.81	3.80	3.40	.....
*Wilmington	78	2.45	4.74	1.98	0.64	3.13	5.37	5.72	2.48	3.10	4.08	3.52	3.21	40.42
North Dakota.														
Amenia	954	0.60	0.20	1.04	6.41	3.56	2.25	0.82	1.48	2.99	0.78	1.67	0.35	22.15
Ashley	.....	0.81	1.05	3.27	4.92	3.34	4.20	2.75	2.45	0.75	[b]0.90	1.14	.....	.....
*Bismarck	1,681	0.81	0.31	0.84	2.23	1.98	2.64	1.03	1.77	1.42	0.48	3.10	0.03	16.64
Bottineau	1,638	.....	.....	.....	.....	4.05	5.94	1.47	T.	2.06	.....	.....	.....	.....
Buxton	930	.....	.....	1.04	5.85	6.66	5.38	1.71	1.74	1.27	0.91	1.62	0.56	.....
Churchs Ferry	1,458	1.03	0.17	1.44	5.98	4.06	4.68	0.77	1.33	2.82	0.91	2.30	0.70	25.69
Coalharbor	.....	1.85	0.10	1.20	2.72	3.67	3.55	1.27	1.11	1.71	T.	3.17	0.94	21.29
Dickinson	2,453	0.92	0.56	1.01	2.35	5.16	2.54	1.55	0.58	0.30	0.71	2.65	0.15	18.48
Ellendale	1,449	0.50	1.00	2.21	.....	.....	2.23	2.32	1.47	1.28	0.92	3.40	0.10	.....
Falconer	.....	0.50	0.10	0.39	2.30	2.56	3.00	1.48	0.63	1.39	0.06	.....	0.06	.....
Fargo	903	0.19	0.06	0.48	3.64	4.70	2.41	0.91	2.17	2.58	1.96	0.70	0.26	20.06
Forman	1,315	0.49	0.38	2.11	5.32	2.72	3.31	1.75	0.89	1.12	[j]1.93	1.07	.....	.....
Fort Berthold	.....	0.65	0.30	0.40	4.04	7.71	7.08	1.60	0.22	0.12	.....	.....	.....	.....
Fort Yates	1,670	0.56	0.22	T.	3.51	1.98	3.55	1.76	1.00	3.15	0.45	3.60	0.30	20.08
Gallatin	.....	0.75	0.25	0.88	6.26	5.43	2.18	2.41	1.10	3.59	1.39	1.81	1.22	27.27
Glenullin	2,070	.....	.....	0.40	2.10	3.13	5.92	.....	.....	.....	.....	2.40	.....	.....
Grafton	827	0.53	0.02	0.39	4.75	6.72	3.31	0.90	2.15	0.95	0.23	2.50	0.60	23.05
Grand Rapids	1,321	0.60	1.86	1.45	5.12	4.01	3.22	1.27	4.55	.....	1.96	3.40	0.59	.....
Jamestown	1,395	1.00	0.90	1.20	6.20	2.58	2.04	2.49	1.55	3.08	1.33	3.50	0.32	26.19
Keleo	897	1.04	0.81	[i]1.10	7.19	6.35	0.94	1.08	.....	.....	.....	.....	.....	.....
Lakota	1,514	.....	.....	.....	.....	4.90	3.82	.....	2.45	.....	.....	.....	.....	.....
Langdon	1,610	.....	.....	.....	.....	.....	4.33	1.71	2.95	2.20	.....	.....	.....	.....
Lemert	.....	0.55	.....	1.40	4.87	.....	.....	.....	.....	.....	.....	.....	.....	.....
McKinney	.....	0.78	T.	1.24	2.03	4.45	6.82	1.41	0.16	0.97	0.10	1.80	0.30	20.06
Mayville	978	.....	0.59	0.91	5.85	8.61	.....	.....	.....	2.91	1.05	4.33	0.35	.....
Medora	2,225	.....	0.80	0.45	0.99	5.17	4.97	0.93	0.14	0.27	0.38	1.02	0.00	.....
Milton	1,586	0.50	0.40	1.67	8.51	8.55	5.07	1.75	*2.90	*1.55	0.00	2.00	0.55	33.45
Minto	820	0.78	0.08	0.59	5.23	6.30	2.93	0.47	3.50	1.08	0.63	0.74	0.32	22.65
Napoleon	.....	1.05	0.60	1.72	2.65	2.63	3.44	1.23	2.48	2.56	0.62	2.60	0.20	21.78
New England City	.....	.....	0.30	0.92	0.63	6.00	3.40	1.90	[d]0.20	0.20	0.00	2.30	0.10	.....
Oakdale	.....	0.49	0.59	1.32	2.40	6.70	5.08	0.67	0.55	1.40	[d]0.47	2.30	.....	.....
Portal	.....	.....	.....	1.62	2.40	4.16	4.24	1.74	0.50	0.81	0.07	.....	.....	.....
Power	.....	0.66	1.02	1.21	4.19	3.28	3.52	[k]1.50	2.02	3.38	1.57	1.83	0.25	24.38
St. John	1,945	0.74	.....	1.02	4.14	5.28	4.35	1.24	0.16	[k]2.91	0.75	3.90	0.66	.....
Sheyenne	1,480	.....	.....	2.05	8.61	6.28	5.20	1.35	0.79	2.35	0.38	2.60	1.60	.....
Steele	1,857	[d]0.65	0.35	*1.17	3.87	2.81	2.18	*2.66	.....	2.26	0.11	.....	.....	.....
Towner	1,475	.....	0.15	0.91	3.84	5.50	6.30	0.82	0.71	1.92	0.00	.....	.....	.....
University	830	0.50	0.15	0.46	5.59	7.06	3.15	0.60	2.53	1.39	1.12	2.10	0.55	26.10
Valley City	1,218	.....	.....	.....	.....	.....	.....	2.29	1.55	3.32	[d]0.84	[l]1.20	.....	.....
Wahpeton	962	0.35	1.20	1.78	5.10	7.43	5.76	4.78	2.56	2.69	0.53	0.75	0.15	53.13

[1] S. S. Thomas. [2] A. Rhodes.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
North Dakota—Continued.														
	Feet.													
Wildrice	911	0.81	0.74	1.71	3.79	4.08	2.20	1.74	2.51	2.61	2.73	1.60	0.54	25.06
*Williston	1,875	2.02	0.71	1.80	2.86	5.79	3.45	1.22	0.72	0.89	0.34	2.10	0.14	22.04
Willow City	1,471	0.30	.....	0.40	3.60	5.71	3.18	1.44	T.	2.20	0.00	1.20	.....	.....
Woodbridge	.....	0.58	0.15	0.94	7.78	4.88	3.77	1.07	0.70	2.74	0.70	1.07	0.57	24.95
Ohio.														
Akron	1,081	1.78	3.21	3.20	5.06	2.52	7.79	8.49	1.55	4.75	0.81	1.77	3.04	43.97
Annapolis	.....	0.20	1.54	4.16	2.55	3.10	.....	8.78	[2]2.07	4.67	1.49	3.16	1.83	.....
Ashland	1,079	1.58	2.43	5.12	3.84	3.09	3.70	7.20	3.41	6.21	0.68	2.18	2.81	42.25
Ashtabula	580	2.34	4.09	3.80	2.96	2.03	6.14	4.37	2.17	4.82	1.93	3.18	1.90	39.73
Athens	657	2.24	2.56	3.83	1.88	2.47	6.54	7.91	.....	.....	.....	.....	.....	.....
Atwater	.....	1.90	3.03	2.66	5.88	1.99	4.36	7.23	2.12	5.90	1.24	1.65	3.00	40.06
Auburn	.....	1.53	3.02	2.75	4.50	2.09	5.93	4.69	4.08	4.46	0.93	2.05	1.71	37.74
Bangorville	1,360	1.71	2.47	4.10	4.03	3.19	3.76	9.44	3.91	5.97	0.99	2.34	3.01	44.92
Basil	879	1.84	1.37	4.07	2.47	2.20	6.97	9.79	3.40	6.96	0.85	4.06	1.63	45.61
Bellefontaine	1,540	1.77	1.17	3.92	2.57	2.87	4.38	[1]6.82	1.69	7.33	0.60	0.93	1.54	35.09
Bement	.....	.....	.....	.....	.....	1.54	9.31	7.88	3.74	3.97	0.93	2.84	2.14	.....
Benton Ridge	.....	2.07	2.00	3.15	2.04	1.79	5.18	8.41	2.91	4.55	0.56	1.94	2.70	37.30
Berlin Heights	623	.....	.....	.....	3.71	1.86	3.43	8.13	3.69	4.98	1.60	.....	.....	.....
Bethany	.....	2.04	1.76	4.13	0.91	2.18	4.12	6.79	5.49	5.89	1.11	3.63	1.21	39.26
Bigprairie	.....	1.58	1.87	4.02	3.18	2.88	4.45	8.00	5.79	5.69	1.02	1.67	2.65	42.80
Bincla	.....	1.33	3.68	3.06	4.90	2.14	9.92	7.50	1.53	4.37	1.16	2.05	2.31	43.95
Bissells	.....	1.45	3.23	2.90	3.25	2.05	7.34	5.19	4.10	4.20	1.01	2.04	1.60	38.36
Bladensburg	.....	1.99	2.19	3.57	2.76	2.85	5.53	8.56	1.76	5.20	0.69	.....	2.47	.....
Bloomingburg	988	1.38	1.64	2.68	1.65	3.37	3.15	8.12	3.36	5.58	0.88	3.35	1.05	36.21
Bowling Green	703	1.45	1.75	2.76	2.93	2.55	3.19	8.23	2.44	3.99	0.56	2.00	2.44	34.29
Bucyrus	1,001	2.10	2.20	2.12	4.03	2.58	3.30	4.93	.....	.....	.....	.....	.....	.....
*Caledonia	996	1.68	2.53	3.52	5.08	1.83	4.25	.....	.....	.....	.....	.....	.....	.....
Cambridge	803	1.43	2.39	4.17	2.87	2.82	6.68	12.72	3.48	5.18	1.09	3.52	1.81	48.16
Camp Dennison	570	1.64	1.48	3.47	0.64	2.91	4.28	7.24	4.12	3.35	2.00	3.83	1.28	36.24
Canal Dover	884	1.99	2.74	3.55	3.28	3.25	6.04	10.07	2.85	4.17	1.11	2.21	3.28	44.54
Canfield	1,160	.....	1.31	2.62	2.63	1.59	7.23	7.02	1.50	4.50	2.25	.....	.....	.....
*Canton	1,070	1.98	2.39	3.83	3.69	3.11	8.48	8.43	2.78	6.24	1.01	1.94	3.01	46.89
Cardington	1,011	1.38	.....	2.99	2.44	2.84	.....	.....	2.73	7.64	0.77	.....	.....	.....
Carrollton	1,142	0.86	2.79	3.25	4.13	3.58	6.39	9.95	3.45	4.35	1.10	2.64	2.42	44.91
Cedarville	1,035	2.46	2.14	3.38	1.88	4.65	3.92	9.07	3.79	6.64	1.39	3.07	2.34	44.73
Celina	910	0.73	1.04	2.50	2.23	4.60	3.10	7.22	5.10	5.01	0.46	1.46	2.01	35.46
Cherryfork	.....	1.59	2.29	3.93	0.61	3.29	4.17	8.32	3.20	3.12	2.23	4.20	1.74	38.69
*Cincinnati	628	1.49	1.56	3.20	0.59	2.17	2.70	7.40	3.70	5.00	2.29	3.29	1.09	34.48
Circleville	720	1.81	1.71	2.88	1.61	2.96	7.03	6.27	3.08	5.28	1.25	1.74	0.44	36.06
Clarksville	1,020	1.99	1.79	4.03	1.03	2.39	5.10	6.50	5.41	4.40	1.20	3.82	1.35	.....
Cleveland [1]	627	1.73	2.97	3.18	4.45	1.91	6.48	5.23	3.04	4.19	1.16	2.23	2.04	38.61
*Cleveland	740	1.58	3.72	2.64	4.72	1.53	6.10	4.84	3.10	3.72	0.84	1.59	2.30	36.68
Clifton	1,035	2.13	1.67	2.92	1.63	3.77	3.67	9.85	3.41	6.14	1.17	3.80	1.46	41.62
Coalton	718	1.65	2.23	4.21	1.56	3.72	5.79	7.23	3.31	5.38	.....	2.81	1.13	.....
Colebrook	.....	1.07	2.58	3.02	2.88	2.44	4.78	7.07	3.97	6.08	1.52	2.38	1.59	39.38
*Columbus	824	2.34	1.93	3.04	2.70	2.61	3.38	9.47	3.53	5.93	0.55	3.53	1.52	40.53
Dayton [2]	790	1.82	1.62	3.12	2.17	3.34	4.34	8.13	4.93	6.02	0.80	3.12	1.44	40.85
*Dayton [3]	790	1.89	1.34	2.23	1.54	3.36	5.17	5.52	3.39	4.71	0.43	1.78	0.89	32.25
Defiance	712	0.92	1.67	2.50	4.03	2.11	1.63	8.18	2.83	2.93	1.40	2.05	1.64	31.89
Delaware	927	.....	1.50	4.02	3.00	.....	.....	.....	3.53	5.56	0.74	2.26	2.12	.....
Demos	.....	2.00	1.39	2.85	2.78	2.12	6.92	16.13	4.34	3.92	1.84	2.70	1.64	49.23
Dupont	724	3.40	1.85	2.15	4.63	3.59	3.44	8.87	2.68	3.17	0.45	1.76	1.83	37.82
Elyria	755	1.73	2.58	1.41	4.67	1.21	5.99	7.25	2.37	4.59	1.09	1.95	2.37	37.21
Fayetteville	.....	1.80	2.22	4.49	1.01	2.82	2.17	6.00	5.28	4.33	1.45	5.50	1.18	38.25
Findlay	782	1.37	2.18	3.18	1.92	1.65	5.23	11.10	2.57	5.01	0.64	1.14	2.55	38.64
Fostoria	790	0.66	2.23	1.94	3.27	1.58	3.58	8.90	1.84	3.69	3.52	1.76	3.11	36.18
Frankfort	750	1.12	1.94	3.27	3.20	3.36	3.72	6.85	4.01	5.62	1.47	3.60	0.43	38.59
Garrettsville	1,020	1.62	3.23	3.31	4.93	1.94	4.76	5.53	2.51	5.08	1.04	1.95	2.31	38.16
Granville	1,110	2.88	2.41	3.25	2.75	2.73	5.54	5.89	3.49	6.64	0.96	4.13	2.73	43.40
Gratiot	.....	1.87	2.43	3.34	2.80	2.01	4.69	11.69	3.29	6.54	1.01	3.48	1.18	44.33
Greenfield	.....	1.17	1.70	1.69	1.20	2.85	2.71	5.75	1.35	4.52	0.55	5.49	0.74	29.72
Greenhill	.....	1.78	2.38	2.64	3.22	2.39	5.54	6.47	2.24	4.41	1.11	1.46	2.42	36.06
Greenville	1,060	1.53	1.37	3.41	1.65	3.61	4.77	9.11	5.50	5.82	0.46	2.73	1.82	41.78
Hackney	.....	1.89	2.97	4.43	2.80	3.14	6.60	10.27	3.45	5.96	1.72	1.77	2.33	47.33
Hanging Rock	550	1.35	3.29	5.36	0.81	2.51	4.76	7.20	3.87	4.12	2.29	2.98	1.00	39.54
Hedges	.....	1.54	1.33	2.68	2.91	1.24	3.11	5.41	3.34	3.26	0.35	1.04	3.00	29.21
Hillhouse	.....	1.50	4.75	3.30	3.83	2.26	5.92	6.88	4.21	5.19	2.03	4.03	1.97	45.87
Hillsboro	1,129	1.72	1.94	3.95	1.35	2.22	4.75	5.14	3.52	4.38	1.38	4.58	1.09	36.03
Hiram	1,200	2.23	2.87	3.50	4.89	2.18	3.95	4.57	2.06	4.69	1.10	1.97	2.43	36.14
Hudson	1,053	1.37	2.75	4.00	3.70	1.49	7.70	7.07	1.96	4.44	1.09	2.30	1.82	40.29
Jacksonboro	975	1.85	1.55	2.70	1.65	2.95	3.95	4.75	3.80	6.60	0.70	2.70	1.35	34.55
*Kenton	1,015	1.53	2.55	4.03	3.04	2.59	4.31	7.30	3.42	5.04	0.75	2.29	2.19	39.04
Killbuck	.....	1.63	2.33	2.66	3.74	3.50	5.59	9.18	2.98	5.15	1.87	2.84	3.12	44.59
Lancaster	898	2.31	1.33	3.48	2.71	2.88	4.42	10.12	1.88	7.33	0.95	3.37	1.05	41.88
Leipsic	740	1.10	2.13	3.01	3.83	2.02	3.63	7.47	1.97	4.80	0.60	1.74	2.55	34.85
Levering	.....	1.47	1.04	2.77	3.19	3.99	3.45	8.90	3.61	6.95	1.04	2.62	2.92	41.95
Logan	740	2.19	2.27	4.29	3.53	2.10	6.08	7.32	1.89	5.35	1.17	3.68	0.84	40.71
Lordstown	1,000	1.62	3.14	2.58	3.74	1.70	5.13	6.73	1.98	3.99	0.89	1.60	3.00	36.10
Lowell	826	.....	.....	.....	.....	2.40	7.48	9.94	.....	.....	.....	.....	.....	.....
McArthur	780	1.91	3.54	5.02	1.49	2.67	3.86	8.52	3.78	4.49	2.52	3.64	0.99	42.43
McConnelsville	710	1.92	2.19	3.35	3.12	1.95	6.44	8.89	3.11	3.79	1.72	3.14	1.13	40.75
*Mansfield	1,154	1.47	3.25	4.06	4.93	2.47	3.96	.....	.....	.....	.....	.....	.....	.....
*Marietta [3]	650	1.43	3.07	3.85	2.03	3.01	5.38	9.33	5.52	3.02	2.62	2.72	1.60	43.58
Marietta [4]	650	1.83	2.28	4.46	2.69	2.74	5.81	7.77	.....	.....	3.49	2.92	1.70	.....
Marion	980	0.66	1.40	2.88	4.81	1.55	3.43	9.13	4.16	6.47	1.10	.....	1.87	.....
Medina	1,086	1.51	3.21	3.07	4.00	1.71	4.54	8.46	2.60	4.37	0.83	1.95	2.38	38.63
Milfordton	.....	1.83	1.56	3.31	2.16	2.31	4.91	7.77	3.65	6.15	1.09	3.07	2.93	40.74
Milligan	.....	1.61	1.94	3.95	2.83	2.92	6.35	8.48	1.88	4.77	1.65	2.92	0.92	40.22
Millport	.....	1.64	2.97	3.04	3.12	1.71	4.43	7.49	3.61	3.60	1.20	1.85	2.52	37.18

[1] G. A. Hyde. [2] Miss E. L. Boyer. [3] River observer. [4] J. C. Shedd.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Ohio—Continued.	*Feet.*													
Montpelier	*880*	*1.65*	*1.65*	*1.89*	*6.87*	*3.20*	*3.49*	*10.62*	*6.39*	*5.15*	*1.09*	*2.33*	*1.67*	*46.00*
Napoleon	*680*	*1.40*	*1.78*	*2.18*	*2.56*	*2.35*	*3.49*	*7.71*	*1.59*	*4.77*	*1.23*	*2.41*	*2.43*	*33.90*
Neapolis	.....	.....	.....	.....	*3.69*	*3.30*	*3.57*	*11.43*	*4.20*	.....	*1.52*	*1.99*	*1.76*	.....
New Alexandria	*1,050*	*2.78*	*3.18*	.....	*4.66*	*3.15*	*5.31*	*11.28*	*3.25*	*4.11*	*1.60*	*3.85*	*2.55*	.....
New Berlin	*1,073*	*1.65*	*2.06*	.....	*5.47*	*1.97*	*6.15*	*7.42*	*2.78*	*4.85*	*0.75*	*2.04*	*2.58*	.....
New Bremen	*1,038*	*1.16*	.....	*2.00*	.....	*2.47*	*2.83*	*7.98*	*1.72*	*5.75*	*0.15*	*1.26*	*1.51*	.....
New Comerstown	800	1.91	2.08	3.39	2.98	2.40	5.77	9.77	3.69	5.61	0.82	3.02	1.79	43.23
New Holland	868	1.85	1.50	4.32	1.82	2.03	5.09	5.71	3.52	4.60	0.91	3.45	0.68	35.48
New Moscow	.....	1.78	2.16	2.87	3.06	1.30	6.35	10.94	3.25	5.78	0.94	3.46	2.28	44.27
New Paris	1,020	1.56	1.32	3.91	1.34	2.72	3.33	5.33	9.35	6.85	0.81	2.35	1.90	40.77
New Waterford	.....	1.74	3.07	3.13	4.52	1.98	8.09	8.11	3.24	4.46	1.39	1.54	2.46	43.73
North Lewisburg	1,095	1.00	3.85	4.60	2.40	3.40	4.20	14.15	2.35	7.00	0.70	2.45	1.60	48.30
North Royalton	.....	1.53	3.39	2.33	3.52	1.52	8.51	6.53	3.47	5.40	1.50	2.54	1.91	42.15
Norwalk	719	0.97	2.70	3.95	3.35	1.35	2.10	7.26	2.00	4.65	0.97	1.00	1.50	31.80
Oberlin	855	0.60	2.28	1.38	2.72	1.70	1.80	7.35	2.09	.....	0.67	1.34	1.03	.....
Ohio State University	*760*	*1.67*	*1.50*	*2.60*	*2.59*	*2.97*	*4.12*	*7.90*	*1.75*	*6.57*	*0.80*	*3.52*	*1.80*	*37.79*
Orangeville	945	1.35	3.00	2.35	2.35	2.10	5.52	3.60	1.75	3.60	0.63	1.75	1.95	29.95
Ottawa	713	1.57	1.84	3.41	2.67	1.88	5.09	7.83	3.55	4.47	0.49	1.76	2.72	37.28
Pataskala	.....	2.27	2.05	3.36	2.05	2.71	5.32	11.83	4.69	8.11	0.96	4.24	1.80	49.39
Peoli	.....	1.81	2.40	.....	1.72	3.63	5.00	8.68	3.08	4.81	.....	.....	.....	.....
Perry	706	.....	3.06	4.66	3.67	1.91	5.31	6.15	2.27	4.64	1.88	2.93	2.02	.....
Philo	.....	1.78	1.81	2.64	4.65	2.09	6.36	9.02	2.98	4.76	1.20	2.47	0.86	40.62
Plattsburg	.....	1.92	2.03	4.73	1.47	3.35	3.67	10.30	3.71	6.53	1.42	3.29	1.37	43.79
Pomeroy	590	0.80	2.43	3.88	0.46	3.08	4.69	9.47	3.51	2.49	2.06	2.14	0.86	35.87
*Portsmouth [1]	527	1.39	3.24	4.45	1.53	2.92	4.55	7.33	3.64	3.87	2.92	3.39	1.17	40.40
Portsmouth [2]	527	1.98	3.01	4.55	1.56	3.01	3.73	7.28	3.53	4.19	2.61	3.30	1.19	39.94
Richwood	.....	1.40	1.89	2.70	2.88	2.57	4.27	6.45	2.44	5.18	0.42	1.98	1.96	34.14
Ridgeville Corners	.....	1.26	1.62	1.80	3.72	3.38	3.47	10.75	1.96	3.90	0.87	2.37	1.59	36.69
Ripley	.....	1.71	2.34	3.98	1.18	3.52	7.25	7.79	4.94	3.34	2.21	4.23	1.84	44.33
Rittman	.....	1.84	1.93	2.66	3.76	2.92	2.37	8.70	2.85	5.84	0.70	2.20	3.85	39.62
Rockyridge	658	.....	2.30	2.57	3.40	1.82	1.44	6.90	1.60	4.89	0.95	2.02	1.55	.....
Rosewood	.....	1.70	1.07	4.80	2.47	3.49	2.73	8.90	2.54	7.61	0.23	2.37	1.60	39.51
*Sandusky	629	1.39	1.72	2.38	4.12	1.67	2.94	5.55	2.71	4.52	1.14	1.53	2.09	31.76
Sharon Center	.....	0.92	1.87	2.63	3.10	1.72	6.07	7.04	3.26	4.84	0.95	1.19	2.50	36.09
Shenandoah	.....	2.40	2.76	2.59	3.76	3.58	2.97	7.69	3.25	5.03	0.79	1.75	3.15	39.72
*Sidney [3]	.....	1.58	1.51	4.34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sidney [4]	.....	.....	.....	.....	2.95	3.64	2.65	7.64	4.01	6.20	0.77	2.99	2.24	.....
Sinking Spring	.....	1.73	2.27	3.79	1.01	2.98	2.81	7.32	5.12	3.33	2.17	4.77	1.01	38.31
Springboro	.....	2.20	1.31	1.61	1.71	2.85	3.75	6.31	6.28	6.33	1.13	3.05	0.80	37.33
Spring Valley	758	1.92	1.90	2.99	1.89	3.35	4.79	6.00	4.91	6.38	1.45	3.15	1.69	40.42
Strongsville	.....	.....	.....	.....	4.67	1.28	9.65	7.95	1.60	5.97	0.73	1.96	2.96	.....
Sylvania	651	1.70	2.14	3.09	4.87	4.97	3.12	7.14	4.73	2.76	1.88	1.94	1.31	39.65
Thurman	.....	1.00	1.57	3.93	1.04	2.11	4.45	6.65	4.19	3.85	2.24	2.61	0.65	34.29
Tiffin	759	1.50	2.09	4.51	3.13	2.76	4.67	4.89	3.49	4.73	0.89	1.58	2.82	37.66
*Toledo	674	1.19	2.44	2.51	3.30	2.22	2.96	6.65	3.66	4.09	1.20	1.71	1.17	33.10
Upper Sandusky	880	1.62	2.24	3.74	3.19	1.88	5.77	5.93	3.59	4.47	0.53	1.69	2.59	37.44
Urbana	1,031	1.49	1.52	3.45	1.87	3.57	5.11	10.10	3.20	7.39	0.38	2.74	1.10	41.92
Vanceburg	.....	0.83	2.90	5.06	0.25	2.98	3.08	6.12	5.05	3.96	1.95	2.76	1.00	35.94
Vanwert	784	1.48	1.65	3.26	3.20	2.93	2.98	10.18	4.13	4.71	0.53	1.86	1.94	38.25
Vermilion	603	1.92	2.23	3.62	4.52	1.68	2.37	5.16	3.12	4.41	1.08	1.43	2.25	33.79
Vickery	603	1.68	2.13	2.61	3.61	2.04	3.24	7.64	2.10	4.60	0.82	1.44	2.02	33.93
Walnut	.....	1.92	2.16	3.08	2.23	2.22	8.23	9.85	2.76	5.29	1.09	3.29	0.93	43.05
Warren	900	2.01	3.39	3.65	3.06	1.79	10.78	5.19	2.30	3.81	0.83	2.11	3.39	42.31
Warsaw	.....	1.72	1.41	1.41	3.60	1.88	6.76	7.27	2.34	4.05	.....	.....	0.77	.....
Wauseon	800	2.20	2.24	2.80	6.65	3.44	4.12	11.01	4.24	4.58	1.20	2.25	1.84	46.61
Waverly	604	1.57	2.19	3.88	1.25	2.66	3.86	7.12	4.21	3.99	2.16	3.64	1.04	37.57
Waynesville	.....	2.14	1.66	3.43	1.88	2.64	4.89	4.84	4.47	5.65	1.26	3.00	1.67	37.53
Wellington	856	1.42	3.08	2.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westerville	875	1.71	1.53	2.58	2.31	3.12	5.44	7.87	3.43	6.33	0.88	2.89	2.01	40.10
Willoughby	649	1.53	2.93	3.35	2.21	.....	3.90	7.43	1.79	4.03	1.10	2.16	2.44	.....
Wooster [5]	920	1.73	2.27	3.67	3.34	3.41	3.98	8.05	1.96	5.16	0.71	1.78	3.04	39.10
*Wooster [3]	920	1.49	2.56	3.15	3.58	4.42	3.54	.....	.....	.....	.....	.....	.....	.....
Youngstown	863	1.45	3.15	1.59	3.32	1.88	5.31	6.60	2.23	4.56	0.95	1.60	2.38	35.02
Oklahoma.														
Alva	1,320	1.00	0.25	0.50	2.80	0.80	4.65	3.45	0.90	2.80	5.50	0.50	1.25	24.40
Anadarko	.....	0.85	0.18	1.07	1.45	2.30	1.03	1.36	0.50	1.85	3.55	1.25	1.90	17.29
Arapaho	.....	1.51	0.22	0.86	1.70	1.60	5.04	4.77	1.26	2.36	2.37	0.65	2.85	25.19
Beaver	.....	.....	T.	0.57	1.22	0.78	2.08	2.28	0.34	2.10	1.35	0.19	0.93	.....
Buffalo	.....	1.20	T.	0.15	.....	.....	.....	.....	1.40	3.72	.....	.....	.....	.....
Burnett	1,200	0.91	0.78	1.27	0.83	10.21	1.14	1.50	1.18	2.04	1.63	3.48	1.11	26.08
Clifton	.....	0.77	0.23	0.95	0.69	2.01	3.12	1.96	1.96	2.51	1.21	3.31	0.71	19.43
Edmond	1,191	.....	.....	.....	.....	2.59	4.00	2.07	1.40	2.51	2.32	2.03	1.09	.....
Enid	.....	0.94	0.25	0.75	0.87	3.92	4.81	.....	.....	.....	.....	.....	.....	.....
Fort Reno	1,400	0.40	0.30	0.60	1.05	1.50	1.29	4.05	3.30	1.85	2.18	1.30	1.30	19.12
Fort Sill	1,200	1.40	0.41	1.23	1.63	1.26	1.38	1.21	1.66	0.81	1.55	1.83	2.75	17.12
Guthrie	947	0.45	0.28	1.38	1.56	6.00	6.01	5.45	1.57	2.50	3.10	2.11	1.30	31.71
Hennessey	.....	0.59	0.19	0.72	0.86	1.74	.....	.....	0.85	1.49	1.85	1.10	0.98	.....
Keokuk Falls	.....	0.65	0.55	1.77	0.95	5.50	3.90	2.06	1.55	2.10	1.21	.....	0.90	.....
Mangum	1,600	1.67	0.90	0.10	1.75	1.76	3.38	4.97	0.95	1.34	1.87	0.61	3.55	22.85
Norman	.....	0.74	0.42	1.12	0.85	6.36	3.23	2.12	1.28	1.90	1.45	3.20	1.31	23.98
*Oklahoma	1,239	0.45	0.14	1.03	1.02	4.62	3.32	1.81	1.83	2.14	1.91	2.41	1.22	21.90
Ponca	.....	1.13	T.	1.70	1.29	1.93	3.76	3.49	0.40	.....	.....	.....	.....	.....
Pondcreek	1,062	0.65	0.20	0.86	1.25	1.00	4.76	5.69	0.72	4.17	5.85	0.38	0.48	26.01
Prudence	.....	1.54	0.25	1.64	1.58	3.77	3.97	5.77	0.38	3.56	6.16	0.66	1.69	30.97
Sac and Fox Agency	.....	0.80	0.30	1.40	1.90	7.20	3.30	2.50	0.95	[6] 2.10	1.80	3.00	0.70	25.95
Stillwater	.....	0.55	0.19	1.21	0.94	5.93	7.26	5.85	1.64	2.54	2.38	1.56	0.85	31.40
Winnview	.....	2.10	0.08	0.67	0.99	0.71	3.71	6.14	1.33	2.46	1.96	0.41	1.26	21.82
Woodward	2,300	1.04	0.02	0.10	3.67	0.81	5.30	1.70	1.00	.....	.....	.....	.....	.....

[1] River observer.
[2] Dr. D. B. Cotton.
[3] Rainfall observer.
[4] H. B. Blake.
[5] Agricultural experiment stations.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Oregon.	*Feet.*													
*Albany	224	8.98	3.85	3.66	5.55	5.81	0.51	0.00	0.58	.....	.....	.....	.....	.....
Arlington	855	1.48	0.46	0.45	0.47	0.95	0.12	0.03	0.16	0.06	0.26	.....	1.44	.....
Ashland	1,940	4.09	1.39	2.73	2.53	1.72	0.30	0.39	0.43	0.81	0.94	5.43	3.49	24.25
*Astoria	50	12.54	10.48	5.72	9.19	6.96	3.35	0.01	1.81	2.62	6.44	16.56	19.14	94.82
Aurora	140	6.09	3.73	2.57	4.49	4.46	0.96	0.00	0.88	0.56	2.50	15.55	9.40	51.19
Aurora (near)	.....	6.60	4.76	2.75	4.60	4.39	1.27	T.	1.40	0.48	2.78	16.73	8.43	54.19
*Baker City	3,430	1.57	0.84	1.09	1.07	2.38	1.49	0.97	0.36	0.20	0.31	1.91	1.18	13.37
Bandon	55	18.49	4.39	3.93	9.14	4.51	0.16	0.00	0.54	0.52	2.78	11.68	6.69	62.83
Bay City	.....	.....	.....	.....	.....	.....	4.15	0.00	1.72	2.18	6.30	17.59	12.71	.....
Beulah	4,400	3.26	0.67	0.90	0.90	3.08	0.52	0.10	.....	0.51	.....	.....	.....	.....
Brownsville	.....	9.11	3.74	3.74	4.98	4.62	0.55	0.00	1.45	0.53	2.88	9.52	4.82	45.94
Burns	.....	1.50	.....	2.10	1.30	.....	.....	0.60	.....	0.70	0.00	1.00	0.60	.....
Cascade Locks	125	11.85	11.18	7.68	9.44	7.54	3.02	0.00	0.65	1.66	3.85	23.65	14.85	95.37
Comstock	468	9.65	5.87	5.37	7.77	6.12	0.25	0.00	1.41	0.68	3.95	15.00	9.29	65.36
Corvallis	319	8.35	3.24	3.13	6.98	5.71	0.98	0.00	1.16	0.41	3.50	16.69	7.81	57.76
Corvallis (near)	.....	10.13	5.12	4.42	6.79	6.89	0.61	.....	.....	.....	.....	.....	.....	.....
Crook	.....	1.40	0.80	1.09	2.35	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dayville	.....	3.44	0.86	0.95	1.85	2.47	0.24	0.70	0.57	0.30	0.55	1.43	1.52	14.88
Detroit	1,542	14.86	9.52	8.92	7.85	10.48	1.18	0.00	1.80	1.08	4.97	.....	.....	.....
Eugene[1]	435	7.56	3.52	4.37	5.89	4.57	0.36	0.29	1.87	0.66	.....	11.86	5.81	.....
*Eugene[2]	435	8.48	3.52	4.79	5.66	5.10	0.39	.....	.....	.....	.....	.....	.....	.....
Falls City	.....	.....	.....	.....	.....	.....	.....	.....	0.99	0.78	5.50	24.61	16.29	.....
Fife	3,375	1.86	1.00	1.00	2.02	1.42	T.	0.30	0.60	0.30	0.10	1.52	0.81	10.93
Forestgrove	229	10.84	4.14	2.46	5.21	5.35	0.60	.....	.....	0.62	2.78	18.37	10.45	.....
Fort Klamath	4,200	.....	.....	.....	.....	.....	0.35	0.01	0.06	0.18	2.16	7.13	6.22	.....
Gardiner	72	16.58	7.67	5.66	14.70	10.24	1.28	0.00	1.58	0.82	4.82	18.18	13.59	95.12
Glenora	.....	27.12	19.34	8.99	13.60	11.34	4.43	0.00	1.92	2.78	8.46	39.26	30.05	167.29
Government Camp	3,580	14.02	14.16	13.93	13.29	15.36	3.33	0.00	2.98	1.95	5.25	25.31	14.77	124.35
Grants Pass	964	8.95	1.77	3.66	3.45	4.80	0.10	0.00	0.73	0.78	2.13	6.31	6.88	39.56
Happy Valley	.....	1.76	0.55	.....	.....	2.02	0.34	0.20	1.51	0.71	0.89	2.08	0.74	.....
Heppner	1,950	1.96	.....	.....	.....	.....	.....	.....	0.16	.....	.....	.....	.....	.....
Hood River (near)	920	7.61	4.53	5.00	3.17	3.78	0.54	0.00	0.22	0.98	1.81	16.55	7.17	51.36
Hubbard	270	8.29	4.22	2.87	5.71	5.74	1.16	0.00	1.15	1.10	2.45	17.53	.....	.....
Jacksonville	1,640	5.90	2.61	2.11	2.25	2.85	0.25	0.00	0.45	1.01	1.28	4.79	5.28	28.78
Joseph	4,400	1.47	1.02	1.24	1.27	2.71	1.16	0.75	0.99	0.39	1.25	3.74	1.13	17.12
Junction City	.....	10.15	4.39	3.01	4.95	5.35	0.35	0.00	0.60	1.36	3.45	13.96	7.49	55.06
Lafayette	.....	7.98	3.98	2.76	3.88	4.65	0.53	0.00	0.36	0.40	2.29	17.05	7.41	51.29
Lakeview	5,060	3.55	1.00	2.32	3.94	2.21	0.10	0.50	0.51	1.17	0.60	2.96	1.45	20.31
Langlois	500	22.10	9.08	7.42	18.37	10.26	0.79	0.00	1.28	0.80	4.75	26.95	16.21	118.01
Lonerock	2,000	1.05	2.60	1.66	3.26	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lorella	.....	10.23	1.45	9.22	8.52	1.60	0.00	0.00	0.00	0.75	.....	.....	.....	.....
McMinnville	180	9.32	4.68	3.25	4.55	5.46	0.80	0.00	1.57	0.78	2.91	20.47	11.13	64.92
Merlin	.....	11.08	2.69	4.65	4.00	5.47	0.00	0.00	0.00	0.70	1.19	8.21	5.72	43.11
Monmouth	.....	3.03	2.97	3.01	5.00	3.76	0.23	0.40	0.43	0.43	2.46	18.05	7.89	47.66
Mount Angel	140	8.10	4.00	3.50	6.01	5.72	1.37	T.	1.15	0.99	2.78	13.02	8.62	55.26
Nehalem	.....	18.41	15.12	8.52	15.23	8.99	5.71	0.00	2.14	5.13	6.71	26.32	19.81	132.09
Newberg	400	8.36	4.61	2.97	5.34	5.16	1.04	0.00	1.84	0.47	3.03	18.64	11.65	63.11
Newbridge	1,900	1.10	0.90	0.38	0.52	0.67	0.28	0.02	0.07	T.	0.04	3.01	.....	.....
Newport	68	11.09	7.76	5.54	12.95	9.10	2.35	.....	1.85	0.96	5.79	21.01	13.46	.....
Oakhurst	.....	.....	.....	.....	.....	.....	.....	.....	0.99	0.78	5.50	24.61	16.29	.....
Pendleton	1,122	1.34	1.37	1.09	1.99	1.86	0.97	0.17	1.19	0.26	1.07	1.84	1.84	14.99
*Portland	157	6.52	3.44	2.10	4.09	3.55	1.41	T.	1.32	0.47	1.76	13.12	6.26	44.13
Riddles	732	8.57	1.21	2.12	3.13	3.07	0.00	0.00	0.05	1.60	1.37	8.09	4.81	34.02
*Roseburg	523	8.33	3.01	4.15	4.18	4.52	0.27	0.00	0.99	0.67	2.06	9.91	5.60	43.69
*Salem	120	6.35	3.31	2.69	6.12	5.54	0.99	0.00	1.00	0.66	2.97	16.99	8.31	54.93
Sheridan	.....	8.49	2.79	1.67	4.82	5.59	0.42	.....	1.59	0.67	2.76	16.93	8.85	.....
Silverlake	4,300	.....	.....	.....	1.89	0.64	0.30	*0.13	0.39	0.18	0.49	2.32	.....	.....
Silverton	.....	9.53	3.90	3.46	5.88	6.62	1.39	0.00	1.82	0.66	2.88	15.70	9.62	61.46
Siskiyou	4,135	8.72	2.30	3.85	7.20	1.10	1.14	0.00	1.50	.....	1.90	8.47	6.85	.....
Sparta	4,125	4.19	2.30	0.82	1.93	4.41	2.98	0.68	0.67	0.35	1.22	5.09	5.85	30.49
Springfield	472	10.61	4.58	5.04	6.34	4.17	0.00	0.00	2.09	*0.62	2.81	.....	5.77	.....
Stafford	.....	.....	.....	.....	5.77	5.12	1.26	T.	0.93	0.52	2.77	19.27	10.82	.....
*The Dalles	116	3.45	0.72	1.00	0.95	0.63	0.10	T.	0.28	0.42	0.60	5.87	2.74	16.76
Tillamook Rock light-house	146	6.38	6.63	3.89	7.12	4.30	2.61	0.00	1.71	1.59	4.25	7.71	9.45	55.64
Toledo	30	14.68	10.86	5.74	19.86	7.62	.....	0.00	0.24	0.64	5.31	18.72	12.00	.....
*Umatilla	334	.....	0.69	0.32	1.04	0.98	0.01	0.00	0.93	0.10	0.36	.....	1.07	.....
Vale	4,400	2.78	0.58	0.68	1.16	1.79	1.13	0.29	0.39	0.16	0.20	1.62	1.74	12.52
Vernonia	1,238	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.88	13.00	10.35	.....
West Fork	1,045	14.80	3.77	5.60	6.58	6.80	0.12	0.00	0.65	0.88	1.92	12.09	9.45	62.66
Weston	1,800	3.52	2.01	1.25	4.81	2.99	0.72	T.	1.63	0.43	1.72	4.33	2.35	25.76
Williams	.....	7.60	3.89	3.49	3.50	4.62	0.07	0.00	0.31	0.84	1.36	6.74	7.14	39.56
Pennsylvania.														
Altoona	1,181	0.87	1.94	1.77	1.38	2.70	7.69	4.22	1.70	6.03	1.66	2.59	0.89	33.44
Aqueduct	367	1.25	5.65	4.08	1.28	2.65	4.85	7.11	2.00	2.59	4.33	3.47	0.63	39.89
*Beaver Dam	603	1.82	2.44	3.32	2.70	2.39	6.07	8.46	4.64	3.52	1.54	2.31	1.55	40.76
Bethlehem	237	1.26	6.41	5.82	1.27	6.30	3.60	6.13	2.22	3.68	2.77	4.32	0.70	44.48
Blooming Grove	.....	.....	7.97	7.98	0.99	2.98	2.49	5.80	2.71	6.03	3.81	6.40	1.18	.....
*Brookville	1,173	0.80	2.82	2.47	2.28	1.51	4.42	10.91	3.58	5.55	3.19	3.13	1.84	42.50
Browers Lock	.....	1.27	6.65	5.09	1.40	3.37	3.51	5.36	0.74	8.57	3.47	3.56	0.69	43.68
Cameron	964	1.28	3.05	3.12	1.70	3.56	5.75	5.89	1.85	6.23	3.83	2.49	1.22	39.97
Cannonsburg	936	.....	.....	.....	.....	1.19	6.71	11.07	1.15	1.73	*0.74	1.64	1.23	.....
Carlisle	480	1.72	6.41	4.20	2.36	2.92	4.27	4.64	0.78	2.75	2.78	3.59	0.70	37.12
Cassandra	2,100	2.10	4.38	5.24	2.89	2.33	6.33	6.75	3.53	6.77	2.89	3.10	1.46	47.82
Cedarrun	760	1.80	3.17	2.35	1.30	1.90	5.23	5.05	1.57	4.98	4.21	.....	0.85	.....
Centerhall	1,100	2.18	.....	3.77	1.41	2.00	4.06	5.66	1.26	6.23	3.92	3.11	1.63	.....
Chambersburg	1,000	1.10	2.81	4.58	0.97	3.05	7.19	4.09	0.99	2.52	1.52	4.20	0.48	33.50
Contesville	380	1.36	6.54	5.01	1.38	2.62	2.85	3.04	0.63	8.31	2.96	4.25	0.59	39.54
*Confluence	1,324	1.27	3.32	4.21	2.89	4.03	4.77	12.11	2.47	6.77	2.52	3.88	1.98	50.22

[1] University.

[2] River observer.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Pennsylvania—Continued.	*Feet.*													
Coopersburg	520	1.13	6.88	5.43	1.35	4.15	3.45	8.46	0.66	6.08	3.29	4.87	1.04	46.79
*Davis Island Dam	.....	1.61	2.94	3.99	2.80	2.75	4.47	8.90	3.31	3.80	2.12	2.88	1.72	41.29
Derry Station	1,172	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.11	2.95	1.53	.....
Doylestown	347	1.03	7.47	5.04	1.65	2.67	4.07	5.34	1.32	5.89	2.19	3.96	1.07	41.70
Driftwood	816	1.91	3.05	2.89	1.84	2.96	6.97	7.08	2.40	7.43	3.26	1.90	0.91	42.60
*Dubois	.....	1.38	3.65	3.87	2.58	1.86	5.22	7.46	3.79	5.21	3.05	3.67	1.98	43.72
Duncannon	356	1.14	6.00	3.98	1.59	3.95	5.56	8.31	1.51	2.69	4.46	4.48	0.65	44.32
Dyberry	1,100	1.43	5.10	4.86	0.67	3.58	1.89	4.44	1.40	4.10	3.07	3.42	0.91	34.87
East Bloomsburg	.....	0.96	4.95	2.55	1.03	3.43	4.85	5.82	2.69	3.23	4.09	5.00	0.61	39.21
East Mauch Chunk	553	1.89	7.16	6.95	1.32	3.24	5.52	6.20	2.85	6.31	4.13	6.74	1.21	53.52
Easton	325	1.03	6.24	3.99	1.23	4.41	3.98	10.28	3.47	4.49	2.38	4.46	0.49	46.45
*Elwood Junction	.....	1.67	2.13	3.74	2.65	2.36	5.93	5.24	2.99	2.89	0.94	1.95	1.83	34.32
Emporium	1,050	1.17	3.68	4.36	1.88	3.36	6.75	5.11	1.62	5.69	3.31	3.60	1.82	42.35
*Erie	714	1.52	3.97	3.41	1.46	2.63	4.67	5.50	3.47	3.72	2.01	2.90	1.76	37.02
Farrandsville	583	0.60	3.98	2.70	1.12	1.64	4.82	5.68	3.34	4.58	5.26	3.44	1.23	38.39
Forks of Neshaminy	304	1.80	9.08	5.59	1.81	3.16	4.46	4.62	0.83	8.49	2.17	4.55	1.12	47.68
Frederick	.....	0.83	5.82	4.28	1.88	2.72	5.24	7.74	0.66	5.18	4.05	3.80	0.56	42.76
*Freeport	770	1.64	3.08	4.20	2.24	4.43	3.90	7.79	2.66	4.73	2.42	3.58	1.84	42.51
Girardville	.....	1.39	6.40	6.00	1.88	2.23	5.14	11.30	1.28	3.26	5.55	8.05	1.20	53.68
Gramplan	1,450	1.22	3.57	4.02	2.40	2.20	5.76	8.83	3.98	4.45	2.62	3.26	1.82	44.13
*Greensboro	768	1.51	3.21	4.10	2.69	3.36	5.26	12.72	1.93	4.19	3.20	3.13	1.40	46.70
Hallstead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.28	3.28	0.99	.....
Hamburg	380	0.80	4.68	5.02	2.05	4.96	4.03	6.00	1.96	4.84	4.25	4.75	0.97	44.31
*Harrisburg	377	1.00	5.48	3.85	1.19	2.99	3.82	6.32	1.45	1.81	3.45	3.30	0.40	35.06
Hollidaysburg	947	1.81	3.70	4.96	2.07	2.64	7.38	7.10	1.76	6.33	1.81	1.73	1.31	42.60
Honesdale	1,000	.....	4.78	6.08	0.20	.....	.....	.....	1.68	4.88	3.29	.....	.....	.....
Huntingdon[1]	650	2.27	3.18	3.20	2.02	2.57	7.74	4.63	2.46	6.98	2.12	3.40	0.77	41.34
Huntingdon[2]	650	2.13	2.99	3.32	1.85	2.56	7.93	3.60	2.29	7.42	2.24	3.04	0.76	40.13
Indiana	1,350	.....	.....	.....	.....	.....	9.11	.....	.....	5.75	3.27	4.45	0.90	.....
Irwin	884	.....	.....	.....	.....	.....	.....	.....	.....	4.12	2.82	2.84	1.76	.....
*Johnstown	1,184	0.66	2.77	3.80	2.57	1.80	6.03	8.45	4.00	6.03	3.15	3.70	2.04	45.00
Karthaus	.....	1.00	2.99	2.35	0.80	1.50	3.43	4.94	1.65	2.89	1.73	.....	1.10	.....
Keating	1,870	2.25	3.04	2.64	1.40	2.82	5.10	6.81	3.29	6.21	3.47	2.18	1.06	40.27
Kennett Square	275	1.52	6.45	5.63	2.05	2.03	5.10	4.44	0.91	6.23	2.51	4.33	0.56	41.76
Lancaster	413	0.50	3.60	4.95	1.24	2.26	.....	.....	.....	.....	.....	.....	.....	.....
Lansdale	368	1.11	6.81	4.65	1.42	2.73	5.57	5.40	0.73	3.97	3.55	3.88	0.75	40.57
Lebanon	438	1.11	6.31	5.29	1.29	4.54	4.51	6.38	0.56	2.92	4.70	4.76	0.68	43.05
Leroy	1,400	2.00	4.66	4.58	1.44	2.46	2.66	5.84	2.22	3.87	5.04	2.92	0.79	38.48
Lewisburg	450	1.98	4.46	3.74	1.11	2.16	4.70	5.62	1.39	3.66	5.58	5.35	1.29	41.04
Lockhaven[3]	560	1.20	5.20	5.48	1.21	1.70	4.33	5.75	3.93	5.80	4.92	3.05	1.42	44.05
*Lockhaven[2]	560	0.85	4.44	4.05	1.02	1.49	3.67	5.16	3.59	5.46	4.44	2.64	1.02	37.83
*Lock No. 4	.....	2.00	2.67	4.03	2.73	3.30	4.00	12.35	2.37	4.57	3.19	2.66	1.46	45.33
Lycippus	1,420	1.59	3.07	4.17	2.33	2.06	3.98	12.94	4.48	4.59	3.18	3.10	1.31	46.80
Mifflin	490	2.20	4.72	3.50	1.69	3.61	4.14	6.10	0.59	4.28	3.20	3.60	1.05	38.68
Nisbet	.....	1.77	4.53	2.52	0.90	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Oil City	1,045	1.66	3.56	3.18	2.96	2.73	6.88	6.69	2.16	4.40	2.15	2.50	2.10	40.97
Ottsville	.....	0.87	7.41	4.96	1.41	3.85	3.36	9.69	0.45	6.95	2.55	4.17	1.89	47.56
*Parker	889	1.62	3.26	3.55	2.04	3.10	4.11	6.99	5.01	4.24	2.21	2.52	1.68	40.33
Philadelphia[4]	120	1.70	6.99	4.88	1.21	1.72	5.30	3.21	0.85	4.02	2.77	3.06	0.95	36.66
*Philadelphia	117	1.57	6.87	4.11	1.19	2.27	4.07	3.27	0.46	2.76	2.08	2.50	1.00	32.15
*Pittsburg	842	1.63	2.89	4.13	3.39	3.91	4.79	8.96	4.09	4.17	2.26	2.76	1.37	44.35
Point Pleasant	.....	1.32	8.75	6.55	1.39	2.81	5.34	7.12	3.20	3.24	2.25	3.37	1.25	46.59
Pottstown	150	1.97	7.08	5.39	1.83	3.07	3.01	6.30	0.55	6.33	3.95	4.28	0.63	44.39
*Quakertown	536	1.30	7.44	4.67	1.61	2.91	3.93	8.20	0.67	7.11	3.50	4.51	0.79	45.74
Reading	280	1.08	4.88	4.85	1.10	4.00	2.85	3.92	0.48	3.66	2.81	3.45	0.40	33.48
Renovo[2]	672	2.12	3.36	2.37	1.25	2.31	7.32	5.17	4.47	5.59	4.21	2.49	0.74	41.90
Renovo[5]	672	.....	.....	.....	.....	.....	.....	.....	4.12	5.49	4.15	2.34	0.86	.....
*Ridgway	.....	1.76	2.75	3.21	2.56	2.66	5.57	7.49	2.45	5.44	2.91	2.41	1.35	40.46
Saegerstown	1,200	1.33	4.10	3.42	2.95	1.66	6.97	5.48	3.29	4.31	2.25	3.71	2.01	41.48
St. Marys	1,740	.....	.....	.....	.....	.....	7.47	6.36	2.83	5.15	1.63	3.02	1.76	.....
Salem Corners	.....	2.19	7.11	5.96	1.18	2.89	2.01	5.08	3.93	4.64	4.35	4.22	1.09	44.65
Scranton	746	0.78	4.91	4.78	0.97	3.52	1.99	4.81	2.50	2.33	4.83	3.13	.....	.....
Seisholtzville	.....	1.09	6.11	4.58	1.81	4.69	3.83	10.86	1.75	5.18	5.40	5.77	0.83	51.90
Selinsgrove	455	0.90	5.71	4.04	1.16	2.40	2.49	6.36	2.18	3.81	4.36	3.47	0.73	37.61
Shawmont	69	.....	.....	4.59	0.96	2.09	4.04	3.26	1.14	4.71	2.96	3.42	2.00	.....
Shinglehouse	1,475	2.40	3.36	2.70	1.34	5.22	3.96	6.14	.....	6.83	3.80	2.87	2.00	.....
Sinnamahoning	794	0.84	1.31	1.65	0.90	1.45	4.04	7.28	1.39	4.10	3.35	1.93	0.23	28.47
Smethport	1,500	1.60	3.55	4.23	1.88	3.34	5.38	7.19	2.27	6.82	3.52	2.41	1.85	44.04
Smiths Corners	.....	1.23	8.13	5.57	1.49	3.14	4.55	7.21	2.20	6.09	2.39	4.28	0.82	47.10
Somerset	2,250	1.71	4.24	4.72	3.27	3.01	7.68	10.55	1.75	6.50	2.72	3.84	2.62	52.61
South Eaton	660	10.52	4.11	4.45	1.13	2.86	2.62	4.66	3.06	2.45	4.94	4.16	1.11	36.07
Spruce Creek	777	2.20	4.33	4.97	1.82	1.80	6.46	.....	.....	.....	.....	.....	.....	.....
State College	1,191	1.40	4.10	2.82	1.47	1.37	5.02	5.56	1.56	5.02	3.29	3.11	1.04	35.76
Sunbury	450	0.80	.....	3.40	0.57	1.30	2.10	3.27	1.35	2.53	3.28	3.30	1.50	.....
Swarthmore	190	1.72	6.62	.....	1.93	1.59	4.90	.....	.....	5.35	1.64	3.58	1.00	.....
*Towanda	754	0.84	3.96	3.88	0.93	2.38	2.17	4.57	2.97	2.73	5.57	2.75	0.57	33.32
Uniontown	681	2.14	3.15	4.61	2.62	3.16	3.12	15.59	2.82	3.78	3.64	3.22	1.61	49.46
*Warren	1,137	1.32	3.62	3.86	2.69	3.23	4.07	6.38	2.99	6.03	2.72	2.64	1.68	41.23
Waterville	624	0.70	3.62	2.43	1.05	1.35	4.48	3.56	.....	.....	.....	.....	.....	.....
Wellsboro	1,327	1.50	4.34	3.00	0.91	1.87	3.92	5.67	0.88	3.03	5.40	0.82	0.95	32.29
West Chester	455	1.87	6.77	5.42	1.49	1.58	5.84	3.54	0.95	6.91	2.14	4.17	0.59	41.27
*West Newton	782	1.93	2.87	4.53	2.68	2.67	4.21	11.46	6.53	4.41	2.89	2.49	1.62	48.29
Westtown	350	.....	7.21	4.78	.....	1.51	.....	.....	.....	6.97	2.40	2.98	.....	.....
Whitehaven	1,150	0.79	4.25	5.70	1.00	2.78	3.83	7.60	2.44	3.71	4.08	5.49	0.92	42.59
*Wilkesbarre	575	1.14	6.17	6.31	1.06	3.17	2.40	6.20	2.99	2.26	2.74	3.44	1.08	38.96
Williamsport	530	1.76	3.81	4.16	1.03	1.77	3.98	4.16	2.96	3.81	5.70	2.55	0.89	36.59
York	385	0.94	4.88	4.20	1.45	2.53	3.62	4.00	1.05	2.64	3.44	3.00	0.45	32.50

[1] Prof. W. J. Swigart. [2] River observer. [3] Prof. J. A. Robb. [4] John Comly. [5] F. C. Eyster.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Rhode Island.														
	Feet.													
*Block Island	27	2.02	4.85	5.14	1.73	3.95	3.27	3.51	2.08	7.76	5.26	2.47	2.55	44.59
Bristol	53	1.91	4.11	5.22	1.27	2.86	3.61	2.88	3.19	7.34	3.14	3.33	1.39	40.25
Kingston	250	2.59	6.37	6.39	1.48	2.92	5.01	3.11	3.67	7.44	4.20	4.52	2.17	49.87
Lonsdale	66	2.41	6.16	5.60	0.99	2.11	3.26	1.57	2.52	8.27	2.72	3.99	2.40	42.00
*Narragansett Pier	22	1.59	4.55	4.53	1.38	3.35	3.36	2.15	3.97	6.30	3.29	2.62	1.56	38.65
Pawtucket	79	1.84	3.91	6.44	1.17	2.33	3.49	1.55	3.13	7.81	2.90	3.34	2.05	39.96
Providence[1]	74	3.52	6.62	6.14	1.22	3.13	3.90	1.34	2.56	8.53	2.71	3.37	2.87	45.91
Providence[2]	74	2.03	6.67	5.32	1.30	3.50	4.33	1.38	2.62	8.66	2.78	3.62	2.32	44.53
South Carolina.														
*Allendale	186	3.36	7.40	4.19	1.40	1.50	3.66	6.27	6.24	2.53	0.38	.....	.....	.....
*Anderson	764	4.36	4.00	2.02	1.02	1.67	4.73	7.44	1.11	2.91	1.85	7.46	2.48	41.05
*Batesburg	656	.....	7.80	2.40	1.50	2.96	5.30	8.63	3.85	2.20	0.85	3.00	1.10	.....
*Blackville	296	2.38	8.26	1.60	2.09	1.51	5.61	6.70	2.74	1.12	0.40	1.48	4.71	38.60
*Camden	222	2.63	6.38	2.24	0.72	3.06	3.55	9.68	2.68	2.52	0.42	2.86	4.05	40.81
Central	.....	.....	3.92	1.09	1.27	3.12	.....	.....	1.07	8.06	1.89	4.62	0.78	.....
*Charleston	52	4.34	4.04	3.64	0.71	0.52	7.57	10.58	4.72	2.75	1.38	1.77	5.76	47.78
*Cheraw[3]	144	1.51	4.06	1.43	1.25	4.29	5.61	8.38	3.93	5.39	1.64	2.55	2.13	42.17
*Cheraw[4]	87	1.73	5.16	1.67	1.31	4.90	5.82	9.07	4.27	6.11	2.34	3.16	3.36	48.90
Clemson College	850	4.19	5.19	1.69	0.92	4.67	1.94	11.28	1.02	9.21	1.88	7.55	1.59	51.13
*Columbia	295	3.16	8.00	1.52	0.95	3.66	3.26	10.89	2.38	0.74	0.42	3.53	3.38	41.89
*Conway	[5]25	3.35	6.63	2.05	1.98	3.34	6.69	6.73	5.84	3.33	1.03	4.43	5.91	51.31
Darlington	.....	1.98	6.52	2.09	2.18	2.64	8.92	6.46	4.06	2.49	1.33	4.18	2.15	45.00
*Edisto	127	2.30	6.95	2.57	0.91	1.04	6.26	4.83	3.05	3.68	0.79	3.35	6.42	42.15
*Effingham	106	2.65	6.02	1.94	1.34	3.85	6.34	5.22	5.94	1.70	1.43	3.61	2.80	42.84
*Florence	136	2.61	5.63	2.06	1.69	4.31	5.49	5.77	3.93	2.35	0.63	4.39	3.17	42.03
Georgetown	12	3.45	5.60	2.20	0.69	1.62	5.33	10.47	4.75	2.87	1.66	3.95	4.50	47.09
Gillisonville	.....	2.54	5.21	2.78	0.72	1.73	6.86	4.68	3.97	.....	1.18	4.02	5.98	.....
Greenville	989	3.67	4.68	1.86	1.37	5.07	4.56	9.27	2.27	3.49	2.73	9.48	2.23	50.68
*Greenwood	671	4.48	4.40	1.65	2.26	1.94	4.21	15.72	2.62	0.56	.....	8.11	2.89	.....
Holland	.....	4.70	4.61	2.04	2.16	2.70	4.00	8.63	4.12	.....	2.21	6.44	2.50	.....
*Kingstree[3]	54	2.76	5.56	2.46	1.41	2.40	7.98	10.74	10.14	1.24	0.50	2.38	4.21	51.78
*Kingstree[4]	54	2.75	5.59	2.41	1.46	2.19	7.90	10.62	10.21	1.24	0.43	2.32	4.23	51.35
Little Mountain	.....	3.61	7.27	2.98	1.64	1.60	4.58	11.38	3.37	6.74	1.50	3.27	2.61	50.55
Longshore	530	4.54	6.45	2.62	1.04	3.43	4.18	10.14	2.94	6.64	2.57	6.29	3.24	54.08
*Mount Carmel	.....	3.81	5.79	2.40	2.46	2.55	2.09	10.27	4.26	2.53	2.37	8.17	4.63	51.33
Pinopolis	.....	2.94	8.70	2.82	1.12	6.07	7.43	6.82	8.08	2.07	1.25	2.63	5.19	55.12
Port Royal	5	3.74	3.55	2.79	0.40	2.61	7.38	5.46	4.46	1.16	1.44	2.75	3.16	38.90
*St. George	.....	2.65	6.82	2.70	1.41	2.19	10.45	5.95	3.99	2.40	0.55	2.15	6.46	47.72
*St. Matthews	.....	2.85	6.74	1.40	1.16	2.30	5.49	11.01	3.86	2.10	1.34	1.12	3.38	42.75
*St. Stephens	74	2.74	7.09	2.87	0.51	3.22	9.16	3.42	5.93	1.90	0.64	3.08	4.82	45.98
Santuck	512	3.26	6.14	1.64	0.97	2.31	3.56	8.00	2.63	6.01	1.52	4.55	3.03	43.62
Shaws Fork	.....	3.60	7.00	T.	1.52	1.58	4.01	7.55	6.83	0.50	1.25	3.88	2.35	40.07
*Smiths Mills	62	3.51	6.15	1.52	2.25	2.66	5.99	7.40	8.46	0.64	1.46	3.32	5.81	49.17
Society Hill	192	2.17	4.52	1.19	0.95	3.88	5.96	7.96	3.07	4.26	1.11	3.91	2.11	41.09
*Spartanburg	875	1.99	5.05	1.69	1.01	1.94	3.18	7.45	2.50	3.77	2.75	7.17	1.55	40.05
Statesburg	500	2.57	6.59	1.69	1.09	2.64	4.54	11.15	2.07	2.18	0.74	3.22	3.19	41.67
Trenton	620	3.62	8.67	2.29	1.99	1.82	3.50	8.83	2.94	3.60	0.84	3.08	3.31	44.49
Trial	.....	2.96	6.26	3.02	1.00	2.74	5.87	5.86	5.66	1.73	0.81	2.23	5.54	43.68
Walhalla	1,061	.....	.....	.....	.....	.....	.....	8.05	2.34	5.35	1.69	.....	0.55	.....
Winnsboro	545	.....	.....	0.80	0.91	1.77	3.08	9.91	1.05	1.73	1.16	3.20	4.04	.....
*Yemassee	23	2.18	5.19	2.96	0.19	2.37	5.11	5.98	6.83	1.77	1.47	1.83	5.91	41.79
Yorkville	680	2.64	5.57	1.55	2.22	1.82	5.05	8.13	2.47	5.73	1.58	4.45	2.01	43.18
South Dakota.														
Aberdeen	1,300	0.77	2.41	4.42	6.50	3.76	6.26	1.64	2.55	2.76	3.62	.....	0.50	.....
Alexandria	1,352	0.15	0.67	4.02	5.66	2.06	4.47	2.72	1.38	3.83	3.15	1.55	T	29.66
Armour	1,521	.....	.....	.....	7.49	1.17	3.81	2.21	2.08	3.04	2.70	2.19	0.00	.....
Ashcroft	.....	0.40	0.50	1.34	1.47	1.91	4.50	3.58	0.99	2.41	0.46	1.90	0.00	19.46
Brookings	1,638	0.13	T.	0.52	6.26	3.45	3.82	2.00	.....	1.90	1.83	0.78	0.25	.....
Canton	1,248	.....	.....	.....	5.78	3.18	6.55	2.78	0.80	4.16	3.19	2.52	0.24	.....
Castlewood	1,685	0.75	1.85	1.54	7.84	4.89	4.15	0.90	1.13	4.42	2.03	1.61	T.	31.11
Chamberlain	1,363	.....	.....	.....	.....	.....	.....	.....	1.66	1.60	1.65	0.45	0.26	.....
Clark	1,779	0.70	1.50	1.96	7.81	5.11	3.94	2.00	1.45	1.76	.....	.....	.....	.....
Cross	.....	0.25	0.22	1.28	1.39	1.16	7.39	2.17	0.82	2.78	0.83	*0.92	*0.00	19.21
Edgemont	.....	0.13	0.11	0.36	.....	0.08	1.25	0.42	0.47	0.45	0.05	0.57	0.03	.....
Farmingdale	.....	0.09	0.08	0.38	1.50	.....	4.69	1.25	0.18	2.39	0.33	0.96	.....	.....
Faulkton	1,395	0.26	0.04	1.34	5.66	2.26	2.50	3.43	0.77	1.40	2.00	.....	T.	.....
Flandreau	1,565	0.67	0.35	3.85	6.03	2.66	6.47	2.54	1.16	3.23	2.32	2.01	0.04	31.33
Forestburg	1,231	0.15	0.30	3.23	5.23	1.40	5.63	1.93	0.96	1.49	1.96	1.42	0.10	23.80
Forest City	.....	.....	.....	.....	3.00	2.06	1.35	5.25	2.70	0.52	.....	2.80	0.00	.....
Fort Meade	.....	0.66	1.14	3.43	2.51	2.69	2.62	0.72	0.05	2.46	T.	1.27	0.06	17.61
Gary	1,484	0.44	1.12	4.15	6.87	5.80	3.45	0.47	0.63	3.38	2.74	1.98	0.35	31.38
Goodyville	.....	0.19	0.50	0.91	4.57	1.36	2.14	3.69	1.50	0.88	0.53	2.58	0.38	19.23
Greenwood	.....	0.14	0.05	1.51	6.61	2.65	5.97	3.30	1.55	2.28	*2.18	1.68	0.12	28.04
Highmore	1,890	T.	0.30	0.85	2.50	0.95	2.28	6.67	.....	.....	.....	.....	.....	.....
Hitchcock	1,339	.....	.....	.....	5.82	0.99	3.91	4.56	1.18	.....	.....	.....	.....	.....
Hotch City	.....	0.14	0.15	0.52	3.81	0.57	2.46	2.34	1.10	1.42	0.49	0.92	0.14	14.06
Howard	1,594	0.20	0.05	.....	.....	2.46	2.99	1.17	0.56	5.48	2.20	1.43	0.30	.....
*Huron	1,310	0.45	0.46	1.71	6.17	2.95	5.18	1.62	1.17	2.36	1.70	1.97	0.36	26.10
Ipswich	.....	1.25	1.35	8.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kimball	1,788	0.50	0.16	1.01	5.40	1.23	5.60	5.43	2.01	1.81	2.28	1.74	0.25	27.42
Leslie	.....	0.03	0.03	0.19	2.15	0.06	3.75	5.27	2.23	0.85	0.10	1.90	T.	16.56
Mellette	1,300	.....	.....	.....	.....	2.19	3.81	2.85	0.62	0.95	3.35	2.88	0.30	.....
Menno	1,324	.....	.....	.....	.....	2.40	3.62	2.29	1.36	2.82	3.28	1.41	0.29	.....

[1] City engineer.
[2] Ladd Observatory.
[3] Cotton region observer.
[4] River observer.
[5] Estimated.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
South Dakota—Continued.	*Feet.*													
Millbank				0.50	5.95	4.80	3.08	1.04	2.21	1.70	2.09	0.60		
Mitchell	1,312	0.08	0.14	1.54	5.70	1.50	2.73	2.37	0.96	2.63	3.34	1.22	0.00	22.21
Northville	1,299	0.32	0.45	0.30	5.30	2.00	5.20							
Nowlin		T.	0.20	0.72	1.71	0.03	4.80	0.14	0.03	0.15	T.	1.00	T.	8.78
Oelrichs		1.10	0.30	1.70	3.00	4.15	1.32	1.90	0.10	0.80	0.65	2.45	0.10	17.57
Parker	1,348	0.50	0.40	3.00	4.58	2.60	4.77	3.61	0.81	4.24	3.03	2.37	0.00	29.91
Parkston	1,400	T.	T.	1.81	4.92	1.36	3.53	1.42	1.40	2.37	2.03	0.60	T.	19.44
*Pierre	1,470	0.62	0.37	0.85	3.70	0.30	2.76	3.39	0.85	1.76	0.55	1.92	0.28	17.35
Plankinton	1,528	0.24	1.20	1.62	5.42	0.88	4.49	3.08	1.62	2.05	2.18	0.97	T.	23.75
*Rapid City	3,260	0.27	0.22	1.35	1.67	0.60	3.35	1.73	0.13	2.58	0.68	1.09	0.01	13.68
Rochford		0.53	1.50	3.17				2.78	0.57		0.75	2.00		
Rosebud		0.50	0.50	2.40	3.04	0.53		6.63	1.61	2.98		1.60	0.85	
St. Lawrence	1,580							5.20	1.12	1.85	1.50	1.65	0.30	
Shiloh				0.25	4.14	0.70	1.90	6.82	0.88	0.82			T.	
Silver City							5.31	3.28	0.80	3.13	0.62	1.55	0.02	
Sioux Falls	1,420	0.41	0.51	1.85	5.96	2.59	5.92	1.67	1.17	2.63	3.39	1.97	T.	28.07
Spearfish											0.52	0.78	T.	
Tyndall	1,418	0.35		1.50	4.65	3.23	5.45	4.02	1.12	1.54	4.49	1.10	T.	
Vermilion		T.	0.25	0.49		5.11								
Watertown	1,738	0.12	0.80	0.84	8.04	5.46	3.68	[a]0.62	1.88	3.20	1.43	1.20	0.30	27.57
Webster		1.07	3.48	1.80	8.30	4.89			[a]3.23	2.62	2.79	2.24	1.21	
Wentworth		0.29	0.24	2.75	5.16	3.19	4.53	1.81	1.99	3.57	2.91	1.58	0.28	28.30
Wessington Springs	1,410	0.08	0.33	1.06	4.70	1.82	7.25	4.69	1.27	1.47				
*Yankton	1,232	0.11	0.16	1.59	5.24	3.61	3.28	3.76	1.83	2.03	2.83	2.29	0.10	26.83
Tennessee.														
Andersonville	1,167	1.58	5.01	6.17	2.50	3.42	5.11	9.61	0.73	3.59	1.60	6.40	0.34	46.06
*Arlington						3.12	2.32	0.80	1.30	2.01	2.32			
Ashwood	725	2.88	6.91	5.52	4.97	2.50	4.50	7.25	1.88	3.61	1.85	7.60	1.60	51.07
Benton (near)	880	1.50	3.04	4.15	2.43	3.14	5.58	6.82	2.56	3.50	1.48	5.89	0.69	40.78
*Bluff City		0.72	3.48	5.53									1.30	
*Bolivar	430	4.67	3.65	5.58	4.22	2.01	1.63	4.31	0.66	1.45	1.89	7.29	1.09	38.45
Bristol	1,689	1.59	2.51	7.87	1.94	3.00	[c]4.23	7.74	7.03	3.17	1.05	5.47	1.60	47.80
*Brownsville	333				2.04	0.80	6.62	4.52	1.23	6.50	3.56			
Byrdstown	1,026	1.62	3.74	9.50		6.95			1.77	5.03	[c]0.85		1.37	
Cagle	1,900										1.24	4.91	1.16	
*Carthage	450	0.95	4.80	6.51	3.60	3.89	4.04	9.24	1.16	6.06	0.86	8.01	1.77	50.89
*Charleston		2.65	5.17	3.84									0.86	
Charlotte	650	1.50	4.90	6.91	4.61	4.24							1.88	
*Chattanooga	762	2.90	4.84	3.21	3.31	3.76	2.64	5.80	1.90	2.01	1.06	5.51	0.83	37.77
Clarksville	481	1.51	4.01	7.57	3.27	4.41	4.68			3.28	1.34	8.47	0.94	
*Clinton	800	1.87	6.32	6.27	2.88	1.79	6.70	15.72	0.15	2.25	2.07	7.41	0.67	54.10
Cookeville	1,050		4.67	7.80		3.86				4.05		5.89		
*Covington	340	2.91	1.88	5.17		3.19	3.06	2.76	2.14	4.01	[c]0.84			
Decatur	850	2.39	5.83	5.99	5.50	3.93	4.09	7.67	1.68	5.47	0.95	7.59	0.78	51.87
*Dyersburg	350	3.16	1.93	6.07	4.03	4.92	5.29	3.57	1.75	3.54	2.53	5.66	1.10	43.55
Elizabethton	1,575	0.46	2.61	4.42	3.09	3.34	7.87	10.56	0.89	4.31	1.27	4.67	1.56	45.05
Elk Valley	1,129					4.26	5.27	10.68	2.57	3.46	0.70	5.50	0.69	
Fairmount	1,950	1.93	4.20	4.39	4.58	3.92	3.54	6.80	0.07	2.32	1.70	7.66	1.33	42.44
Florence	512	1.38	5.31	7.88	5.28	3.75	3.42	9.96	2.05	3.89	1.30	8.73	1.72	54.67
Franklin	650	3.16	4.09	7.18	4.75	3.73								
Greeneville	1,581	1.20	4.32	5.08	4.32	3.80	6.82	11.85	2.36	3.38	1.18	5.51	1.41	51.24
Harriman	850	1.78	4.66		3.47	2.91						6.86	0.41	
Hohenwald	925	2.99	6.08	7.17	3.83	4.78	4.97	7.82	2.17	2.49	1.51	6.41	2.14	52.36
Jackson	425	4.42	2.05	4.74	5.41	4.36	4.58	7.55	0.95	2.78	1.95	6.19	1.45	46.43
*Johnsonville	368	2.26	4.01	6.48	3.02	4.66	4.93	7.78	2.91	2.54	1.46	8.42	1.46	49.93
Jonesboro	1,740	0.80	2.50	3.80	2.23	3.07	6.48	9.57	2.76	4.43	1.02	5.66	1.20	43.52
*Kingston		2.17	6.54	5.41									0.60	
*Knoxville	980	1.49	5.51	5.30	4.24	5.31	5.01	7.36	1.25	2.02	1.50	4.32	0.95	44.95
Liberty	672	1.25	4.94	7.83	2.60	2.66	3.09	10.07	1.67	5.59	1.18	7.56	1.27	49.71
*London	750	2.23	5.87	6.30	3.80	2.15	5.15	9.85	1.75	3.30	1.47	6.03	0.92	48.82
Lynnville	734	1.95	8.61	9.73	3.63	2.46	3.30	7.18	2.22	4.68	1.16	6.67	1.50	53.09
McKenzie	515			4.30	1.70	5.89	3.75	4.13		1.90	1.13	6.21	1.20	
McMinnville	1,000	4.22	7.61	10.48	4.67	5.24	8.85	8.45	1.18	3.48	2.58	8.41	2.75	67.92
*Memphis	399	4.32	3.19	4.78	3.78	2.49	2.07	0.80	0.84	3.21	1.49	7.47	0.56	35.00
*Milan	440				3.67	5.60	3.20	4.02	1.93	2.79	1.03			
Molino					5.24	3.94	2.48	3.94	1.28	5.48	0.90	9.76	2.95	
*Nashville	545	1.37	3.65	6.45	2.92	4.05	1.82	7.33	1.40	2.74	0.98	5.71	1.79	40.21
Newport	1,280	0.99	4.14	4.57	5.03	3.50	5.76	9.60	1.78	2.77	1.13	4.90	0.94	45.16
Nunnelly	525	2.80	4.93	6.13	5.78	3.77	4.66	6.58	1.48	2.00	1.34	6.69	3.89	50.05
Palmetto		1.80	6.95	6.26	3.89	1.57	2.91	8.79	1.18	5.26	0.77	6.79	1.37	47.54
Pope		3.60	3.75			3.70	2.56	1.20	0.24	0.29	1.18	6.98	1.55	
Riddleton	549	1.31	4.68	8.29	3.13	6.44	5.07	9.91	1.18	5.93	0.87	7.57	1.32	55.79
*Rockwood	872	2.53	6.29	4.93	2.42	2.66	3.82	11.82	0.93	5.62	1.21	9.23	0.49	51.95
*Rogersville		1.49	4.25	6.88	3.11	3.41	4.46	7.83	1.85	3.48	2.14	5.30	0.90	45.10
Rugby	1,410	1.24	5.51	7.62	2.35	3.22	5.09	11.52	0.35	4.11	[b]0.51	6.02	0.22	47.76
St. Joseph		2.82	9.75	8.20	6.11	1.37	8.45	2.16	1.67	3.13	2.28	7.44	2.68	55.46
Savannah	450		6.48	9.53	2.69	3.07	6.32	3.77	2.51					
Sewanee	1,900	1.30	6.71	6.27	5.55	3.50	4.22	6.75	1.20	3.11	2.18	6.71	3.22	50.72
Springdale	1,100	1.34			3.43	4.19	4.65	14.82	1.15	2.49	1.80	3.79		
*Strawberry Plains	906	0.89	4.57	5.53									1.42	
Tellico Plains					4.68	2.64	4.10	7.43	2.03	2.81	1.71	5.32	0.81	
Trenton	321	2.26	3.81	6.94	2.66	5.95	4.92	3.87	4.24	2.77	1.77	8.37	1.11	46.67
Tullahoma	1,070	5.85	4.85	5.85	6.50	2.45	3.95	10.40	1.85	4.20	1.15	6.32	2.35	55.72
Union City	346	1.91	2.30	7.05	2.76	6.85	7.55	6.11	2.57	3.31	1.91	5.67	1.24	49.23
Waynesboro	1,050	4.00	4.43	6.12	3.00	2.70	5.43	3.60	1.65	1.12	1.95	5.17	2.67	41.84
Texas.														
*Abilene	1,749	1.44	0.78	0.14	1.11	0.70	2.17	1.68	1.54	4.14	4.18	0.38	2.48	20.74
Albany	1,429	1.96	0.60	0.14	1.10	0.74	0.64	3.48	1.59	4.15	2.97	0.53	3.18	20.88

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Texas—Continued.	*Feet.*													
Alice		0.60								2.80	4.77	1.60		
*Amarillo	3,691	0.76	0.41	0.21	1.95	2.20	2.31	7.04	0.63	2.45	3.09	0.35	2.88	24.28
Angelton		4.25	5.90	5.75										
*Arthur City	590	2.44	3.19	2.63	1.12	3.12	0.87	0.68	2.30	1.14	2.62	4.42	0.76	25.29
Aurora		2.60	2.60	1.82	0.90	3.05	0.30							
Austin	650	4.05	7.55	0.40	6.50			4.05		8.24				
*Ballinger	1,637	1.86	0.98	0.04	1.22	0.11	2.06	5.74	1.47	5.68	4.92	0.27	2.22	26.57
*Beeville		2.60	3.30	1.35	2.47	2.30	1.07	5.44	1.52	3.14	4.73	0.34	1.43	29.69
Blanco						T.	0.50	3.25	T.	10.06	4.52	T.	2.00	
Boerne	1,333	4.41	2.82	0.83	2.95	0.98	0.37	6.71	0.62	5.59	4.86	0.31	2.41	32.86
Brady	1,500	4.00	2.13		1.54	0.36	0.66	2.37	2.62	4.25			2.04	
Brazoria		3.65	3.78	4.05	2.73	1.44	0.58	7.03	1.93	4.96	3.99	5.26	3.46	42.86
*Brenham	350	6.65	4.51	3.29	3.67	0.96	0.90	2.07	1.46	4.65	1.90	4.12	1.94	36.12
Brighton						2.00	0.34	1.13	0.26	5.24	3.74	1.71	0.86	
Brownwood	1,342	5.63	1.86	0.92	1.24	1.03	1.61	2.93	2.70	7.71	8.23	0.10	2.40	36.36
Burnet		4.00	3.90	0.98	2.67	1.29	0.41	1.01	1.11	2.06	2.97	0.44	1.07	21.91
Camp Eagle Pass	800	1.13	1.65	0.00	0.40	2.01	1.52	3.00	0.05		3.35	0.42	0.57	
Chillicothe	1,406	0.87	T.	0.20	1.50	1.75	[c]1.33			1.75				
Coleman	1,710	3.00	1.16	0.20	1.56	0.50	2.15	4.75	4.01	5.20	4.18	0.41	2.43	29.55
College Station	360	10.93	4.38	2.32	1.46	3.30	0.10	0.48	0.60	9.59	3.42	1.45	1.87	39.90
*Columbia	34	3.55	6.64	4.08	2.26	1.10	0.74	6.99	2.68	5.41	3.42	4.17	4.06	45.10
Colmesneil	303				4.24	3.13	1.30	1.93	3.33	3.46	3.72	4.27	1.93	
*Corpus Christi	20	2.41	2.20	0.62	1.60	1.94	2.19	2.38	0.53	4.39	4.12	0.30	0.73	23.41
*Corsicana	445	3.90	4.24	1.27	1.07	3.27	0.58	1.32	0.25	5.34	3.86	2.21	1.44	28.75
*Cuero	177	2.84	7.56	1.44	3.99	0.73	1.77	3.36	1.22	3.81	5.46	0.79	1.57	34.54
*Dallas	466	4.74	3.07	2.61	1.23	2.93	0.50	2.69	1.85	2.62	4.22	1.05	1.86	29.37
Danevang				3.13	2.98	1.22	1.92	8.20	1.11	6.72	5.09	1.72	3.02	
Dean						2.10	1.13	6.57	1.14	3.11				
*Dublin		3.67	2.37	0.04	2.33	2.57	1.58	1.22	4.55	5.92	3.80	0.48	3.25	31.78
Durham		0.38	0.48	T.	2.17	0.98	3.47				8.01	0.59		
Duval	650	5.55	3.55	0.95	4.67	1.31	0.42	1.03	T.	6.37	3.71	T.	2.05	29.61
*El Paso	3,767	1.63	0.14	T.	T.	T.	0.60	2.73	1.09	1.48	2.02	0.04	0.06	9.79
Eatelle		3.57	3.16	1.93	1.33	3.07	1.03	2.37	2.52	2.21	4.76	0.88	1.85	28.68
Forestburg		1.44	1.45	0.94	1.14	0.76	0.71	3.35	1.40	0.65	2.80	2.40	1.47	18.51
Fort Brown	57	0.81	0.99	0.35	1.30	0.04	0.85	1.63	0.16	4.21	3.48	4.09		
Fort Clark	1,050	1.20	0.55	T.	0.60	0.16	1.02	3.66	0.50	4.60	3.69	1.07	1.50	18.55
Fort McIntosh	460	0.58	2.06	0.10	1.06	1.11	0.75	4.07	0.69	5.52	3.02	0.76	1.52	21.24
Fort Ringgold	230	0.48	0.75	0.00	1.65	0.53	4.03	1.00	0.22	2.75	4.70	0.42	0.57	17.10
Fort Stockton	3,050	0.11	0.47	0.00	T.	0.80	0.82	3.82	1.18	4.34		0.28	0.24	
Fort Worth	1,100	4.75	[i]1.80	1.59			1.02		4.78	[f]0.85	[f]4.67	1.27	2.50	
Fredericksburg	1,742	3.08	2.67	1.36	5.07	0.06	1.43	2.56	1.53	7.99	4.29	0.41	1.92	32.37
Gainesville	738	2.49	2.30		1.62	1.76	2.27	2.13	2.23	2.94	3.05	4.25	1.20	
*Galveston	42	1.91	2.70	3.59	1.49	0.82	0.34	3.90	0.35	2.20	2.14	1.94	2.33	23.71
Georgetown	750	5.10	3.30	0.49	4.11	2.79	0.20	1.97	T.	9.50	3.08	0.29	2.07	32.90
Golindo		5.55	6.65	0.95	2.10	0.75	0.15	0.90	0.55	10.30	6.80	0.75	1.75	37.20
Graham	1,040	1.64	1.27	0.49		0.94	2.38	0.69	2.98	1.57	11.90	0.55	3.12	
Grapevine	1,110	3.31	3.03	1.94	1.28	0.58	1.84	2.98	3.86	2.89	4.66	1.54	1.76	29.67
Hale Center		0.80	0.28	0.12	1.55	0.80	3.65	6.85	0.50	3.00	5.00	0.45	2.00	25.00
Hallettsville		3.33	5.72	5.15	2.03	0.60	0.66	3.01	0.85	4.67	4.37	0.97	1.20	32.56
Happy		1.35	0.15	0.15	2.46	0.95	0.90							
Hartley	3,915	0.75	T.	0.02	0.95	T.								
Haskell	4,013	1.52	T.	T.	0.81	0.40	T.	3.34	1.90	3.08		1.60	2.60	
*Hearne	305					2.50	0.25	1.60	0.25	8.33				
*Henrietta	915					0.20	0.40	2.14	0.84	0.72	0.89	1.95	1.87	
Hewitt	664	6.20	6.82	0.50	1.87	1.70	0.80	1.38	0.85	7.35	7.60	1.50	2.35	38.92
*Houston	53	4.09	7.50	8.58	3.02	1.87	1.21	3.44	2.38	2.93	3.10	1.99	5.67	52.78
*Huntsville	400	6.34	6.77	2.08	2.00	2.35	0.45	1.42	0.92	4.85	4.64	2.42	1.50	36.34
Kent		0.24	0.98	0.03	0.00	0.00	1.62	2.50	2.04	2.05	2.18	0.14	0.35	12.13
*Kerrville		3.27	1.84	0.20	6.14	0.39	1.04	2.00	0.47	7.30	4.67	0.36	1.74	29.42
*Lampasas	1,025	2.76	3.06	0.82	2.72	0.60	0.25	1.38	3.25	3.73	5.83	0.18	1.43	26.01
Leakey		2.39	1.70	T.	1.72	0.61	0.73			5.80	4.27			
Llano		2.50	1.90	1.00	2.60	0.50	0.00	1.53	1.50	2.75	6.00	0.40	1.20	21.88
*Longview	336	8.18	5.22	2.82	2.09	2.42	3.41	3.78	1.08	3.30	6.66	2.15	2.55	43.66
*Lufkin	326					*T.	2.54	2.29	0.43	4.49	4.47			
*Luling	418	5.07	3.63	1.54	1.86	0.60	0.10	3.84	0.26	5.99	4.20	1.17	0.85	29.11
Mann	450	4.58	5.10	1.23	1.77	4.27	0.28	2.35	0.09	4.14		1.90	1.22	
Marathon	4,043								T.	4.96	4.42			
Marshall	375	15.40	13.10	5.15					1.47					
Menardville	1,960	3.23	1.13	0.00	1.60	0.86	1.05	2.78	1.85	4.73	6.21	0.00	2.46	25.90
Midland	2,779	2.05	2.10	0.00	0.00	1.04								
Mount Blanco		1.08	0.06	0.10	1.13	0.04	0.19	4.10	0.11	0.14	2.40	0.08	1.05	10.48
New Braunfels	720	3.01	2.27	0.33	3.34	0.64	0.12	1.10	T.	4.59	6.19	0.00	1.90	23.49
*Orange	10	1.63	2.21	3.28	2.00	0.02	0.71	2.20	0.08	2.53	1.22	3.39	1.56	20.83
*Palestine	510	7.67	7.05	1.77	1.22	4.13	0.71	1.67	1.19	2.01	7.16	1.67	2.15	38.40
Panter		4.04	2.82	1.89	1.61	1.24	0.47	0.26	3.70	5.03	6.14	1.28	2.56	31.04
*Paris	592	2.50	3.65	2.19	1.95	1.46	0.29	0.80	1.56	2.66	2.72	1.87	0.52	22.17
Point Isabel	8			0.25	0.35	T.	T.	0.25	T.	2.20	1.85	1.05	1.50	
Rheinland		1.28	0.19	0.23	0.62	0.29	0.41	2.50	0.59	1.35	2.20	1.57	2.89	14.12
Roby		0.94	0.27	0.11	0.85	0.48	1.64	1.48	1.66	3.46	5.78	0.32	0.98	17.97
Rocksprings		2.49	1.69	T.	1.78	T.	1.31		1.61		6.32	0.45	1.28	
Roundrock	720					1.25	0.00	1.50	0.00	6.25	3.60	0.70		
Runge		2.37	7.10	0.42	2.34	1.07	1.54	2.97	0.91	4.28	3.76	T.	0.54	27.30
San Antonio[1]	781	2.72	2.23	0.52	2.80	3.33	0.72	2.57	2.88	8.81	6.41	1.05	0.77	34.81
*San Antonio	704	2.90	2.36	0.06	2.73	2.74	0.61	2.69	2.96	8.87	6.04	0.79	0.74	34.09
Sanderson	2,780									4.75	6.90	0.50	0.05	
San Marcos[2]	588	3.15	2.84	1.43	3.00	0.51	0.00	1.35	0.45	9.78	4.58	0.47	2.41	29.97
*San Marcos[2]	588					0.31	0.00	1.28	0.35	9.19	4.78	0.56	2.38	
Sierra Blanca	4,512	T.	0.85	0.00	0.00	0.10	1.54	4.45	0.93	1.23	2.75	T.		

[1] G. A. Duerler, jr.

[2] G. W. Knight.

[3] Cotton-region observer.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Texas—Continued.														
	Feet.													
Stafford	92	3.87	7.70	7.47	3.15	0.97	3.45	7.23	2.03	6.89	4.56	4.06	3.69	55.07
Sulphur Springs	530	2.98	1.92	3.46	0.24	.....	.....	.....	0.23	1.81	5.89	2.54	1.21	.....
Temple[1]	570	6.13	5.80	1.32	2.81	1.31	0.47	1.59	0.32	4.72	3.83	.....	2.33	.....
*Temple[2]	630	.....	.....	.....	.....	1.10	0.40	1.50	0.40	4.58	.....	.....	.....	.....
Twohig	440	1.57	1.26	0.03	.....	1.62	0.00	0.70	.....	.....	.....	.....	.....	.....
Tulia	.....	.....	.....	.....	.....	.....	.....	4.36	0.76	2.24	4.01	0.55	1.93	.....
*Tyler	531	6.20	5.55	2.32	1.20	2.62	0.20	1.71	0.56	2.88	4.85	0.65	2.20	30.94
Victoria	187	.....	.....	3.83	1.45	2.37	0.77	5.77	1.23	7.64	2.90	.....	.....	.....
*Waco	424	5.21	5.46	0.78	1.77	2.55	1.60	0.80	1.46	8.48	8.90	0.93	2.25	40.19
Waxahachie	.....	.....	.....	.....	.....	3.50	.....	3.80	.....	4.10	.....	.....	.....	.....
*Weatherford	864	2.92	1.99	1.07	1.34	0.60	0.19	1.32	1.65	1.60	3.50	0.91	2.42	19.51
Wichita Falls	958	0.99	0.57	.....	.....	.....	.....	0.32	0.36	0.92	1.07	1.93	2.54	.....
Utah.														
Alpine City	4,900	1.45	1.55	1.58	1.32	3.04	0.06	2.58	0.81	0.91	0.31	1.40	0.33	15.34
Blue Creek	.....	0.55	0.40	1.00	4.00	0.40	0.00	T.	.....	0.00	T.	.....	0.50	.....
Brigham City	4,315	.....	.....	2.99	1.53	3.60	0.36	1.96	0.69	0.81	1.52	2.32	1.41	.....
Castlegate	6,161	1.10	0.20	0.58	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cisco	4,447	0.23	T.	T.	T.	T.	0.02	0.12	0.84	2.06	0.88	0.03	0.05	5.23
Corinne	4,232	1.10	0.15	1.42	0.81	1.81	0.12	1.38	0.15	0.49	0.48	1.19	0.90	10.00
Deseret	4,541	0.32	.....	0.29	0.47	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fillmore	5,700	0.75	0.16	0.94	1.47	1.06	0.01	2.36	1.69	0.85	0.37	1.17	0.33	11.16
Fort Duchesne	4,941	0.06	0.09	0.14	0.21	1.40	0.03	1.45	0.64	2.23	0.54	0.20	0.00	6.99
Giles	4,000	0.10	0.00	T.	T.	0.30	T.	0.61	0.78	2.00	0.17	T.	T.	3.96
Grover	5,800	0.35	T.	0.50	0.80	0.72	0.05	0.80	1.02	1.17	0.65	0.30	0.15	6.51
Heber	5,440	2.10	0.95	2.46	2.40	1.85	0.09	3.35	0.55	1.44	.....	.....	0.75	.....
Huntsville	.....	2.45	0.70	3.46	2.78	2.86	.....	.....	0.45	0.28	0.77	3.49	1.35	.....
Kelton	4,223	0.50	0.70	0.75	.....	0.99	0.00	0.00	0.15	0.00	0.00	0.90	.....	.....
Koosharem	6,800	0.20	0.60	0.20	0.88	0.39	.....	3.85	1.43	0.67	.....	.....	0.10	.....
Levan	5,010	1.16	0.60	1.49	1.23	1.58	0.36	2.26	0.71	0.54	0.50	1.58	0.36	12.37
Loa	7,000	0.05	0.05	0.15	0.10	0.10	0.35	2.57	1.94	0.78	0.42	0.34	T.	6.85
Logan	4,507	1.31	0.35	1.73	2.11	3.17	0.46	1.40	1.49	0.91	0.68	1.97	0.57	16.15
Mammoth	6,033	.....	0.06	0.19	0.75	1.84	0.12	2.84	0.18	0.19	0.10	1.09	T.	.....
Manti	5,548	0.15	0.10	0.60	0.95	0.16	T.	1.60	0.43	0.29	0.64	0.30	0.30	5.52
Millville	.....	1.46	0.35	2.69	2.06	3.02	0.45	1.52	1.15	1.56	0.97	2.12	0.81	18.16
Moab	4,000	0.45	T.	0.18	0.11	0.17	0.03	0.66	0.51	5.97	0.83	0.30	0.32	9.53
Mount Pleasant	6,300	0.31	0.40	0.93	1.36	1.09	.....	2.69	0.87	0.75	0.46	1.75	0.20	.....
Ogden	4,307	1.62	0.30	2.87	1.25	3.57	0.10	0.20	0.28	0.58	0.70	1.93	0.95	13.95
Pahreah	4,000	0.50	0.05	0.30	0.50	0.20	0.00	.....	1.90	0.40	1.30	.....	.....	.....
Park City	6,852	.....	.....	1.01	3.83	4.22	*0.00	0.71	0.05	0.13	0.72	2.25	0.90	.....
Parowan	5,970	0.16	0.48	0.71	0.83	0.93	0.08	1.69	3.00	0.47	0.36	0.30	0.16	9.17
Promontory	4,905	.....	3.10	.....	0.10	.....	0.00	0.75	0.00	T.	0.15	1.10	0.32	.....
St. George	2,800	0.40	0.10	0.15	0.03	0.71	0.00	2.98	2.59	0.12	0.11	0.26	0.20	7.65
*Salt Lake City	4,345	1.26	0.69	1.99	2.53	3.67	0.25	1.35	1.47	0.52	0.70	3.15	0.84	18.42
Scipio	5,260	1.22	0.10	1.51	1.06	1.36	T.	2.82	1.59	0.89	1.53	1.14	0.40	13.62
Snowville	4,360	1.29	0.36	1.59	1.07	2.35	0.68	2.30	0.63	0.21	0.93	1.97	0.90	14.28
Soldier Summit	7,477	1.16	1.15	1.47	1.02	0.38	0.14	0.86	0.49	0.48	0.60	3.25	0.90	11.90
Terrace	4,544	0.15	0.40	0.95	0.63	2.28	0.00	.....	0.30	0.00	0.00	0.32	0.00	.....
Thistle	5,050	.....	0.18	1.75	1.00	1.80	2.00	2.43	0.63	.....	0.47	0.70	0.20	.....
Tooele	4,900	.....	.....	1.09	.....	.....	0.02	0.88	0.93	0.30	0.92	2.07	0.29	.....
Vernal	5,050	0.48	0.29	0.38	0.89	0.94	0.04	1.86	0.58	2.48	0.69	0.42	0.04	9.09
Vermont.														
Brattleboro	335	2.21	3.56	5.89	1.53	1.79	1.33	2.77	2.22	3.90	2.37	2.46	0.85	30.88
Burlington	320	0.63	1.94	3.54	0.60	1.25	3.13	3.83	4.09	3.59	2.53	2.43	0.83	28.38
Chelsea	1,350	0.94	4.56	5.44	0.28	1.06	1.78	3.96	2.33	4.27	2.21	3.03	0.68	30.54
Cornwall	.....	0.73	1.83	3.14	0.43	1.37	2.41	2.97	4.37	4.83	2.61	2.58	0.80	28.07
Enosburg Falls	436	1.30	5.57	6.26	1.75	2.42	4.13	4.10	2.84	2.42	3.31	3.58	0.45	38.13
Hartland	665	0.81	4.72	7.09	2.04	1.41	2.60	2.90	3.63	4.92	4.61	3.52	0.87	39.12
Irasburg	.....	1.95	4.73	5.96	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jacksonville	1,000	2.95	5.75	5.68	1.96	1.76	1.85	5.07	2.76	5.10	3.57	3.67	1.40	41.52
*Northfield	871	0.87	4.45	6.41	0.51	1.44	1.02	5.99	2.27	3.48	2.42	3.55	0.81	33.82
Norwich	406	0.64	3.74	5.75	0.89	1.31	2.28	4.34	3.82	4.43	4.03	3.01	0.77	35.01
St. Johnsbury	711	0.67	3.21	4.33	1.14	1.80	2.42	3.79	3.26	3.24	2.41	3.45	0.95	30.67
Strafford	500	1.05	4.35	4.85	0.61	0.90	1.88	4.56	3.06	3.37	3.30	3.35	0.61	31.89
Vernon	310	0.94	4.00	6.03	1.19	2.06	1.13	3.76	2.32	5.65	2.51	3.86	0.91	34.36
Wells	750	0.83	3.23	6.24	1.23	1.85	2.88	3.06	4.99	6.61	3.62	3.36	1.20	39.10
Woodstock	700	1.43	4.63	4.68	1.53	1.54	2.34	3.87	3.52	4.44	3.54	3.20	0.72	35.44
Virginia.														
Ashland	220	2.35	3.56	4.12	2.00	3.37	3.67	6.64	1.46	5.49	0.56	2.42	0.51	36.15
Avon	.....	3.09	4.98	5.55	1.39	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barboursville	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.40	0.28	4.02	0.06	.....
Bedford City	900	2.16	4.30	5.13	1.89	1.82	.....	.....	3.55	6.75	.....	.....	.....	.....
Bigstone Gap	1,966	1.43	3.83	12.73	2.46	1.92	3.77	9.90	5.50	4.19	2.71	4.48	1.00	53.92
Birdsnest	40	2.35	5.99	.....	1.10	4.80	1.35	3.35	0.10	3.30	2.90	1.95	2.19	.....
Blacksburg	2,100	1.51	3.65	6.53	3.71	2.08	5.38	7.18	3.84	4.83	1.16	4.52	0.50	44.89
Buckingham	550	3.30	3.74	.....	2.02	4.96	4.41	6.08	2.27	4.83	0.29	3.79	T.	.....
Burkes Garden	258	.....	.....	.....	3.18	4.45	6.81	[3]3.98	3.45	5.01	.....	6.16	1.19	.....
Callaville	570	2.89	6.20	4.08	1.42	5.65	5.91	10.23	1.63	3.89	1.29	1.98	2.84	48.01
Cape Henry	20	1.19	6.89	1.38	1.73	10.61	15.09	6.43	2.42	4.17	2.42	2.21	2.53	47.07
Charlottesville	482	3.54	4.22	4.95	1.39	3.01	.....	.....	.....	.....	0.25	.....	T.	.....
Christiansburg	2,160	1.07	2.64	6.36	2.80	3.91	3.76	6.94	1.21	5.20	1.15	3.72	0.60	39.36
*Clarksville	.....	.....	.....	4.16	5.40	4.46	3.17	9.47	0.28	.....	.....	.....	.....	.....
Clifton Forge	1,047	.....	.....	.....	.....	.....	.....	.....	.....	6.43	0.28	5.56	T.	.....
Dale Enterprise	1,350	1.75	3.40	3.70	1.19	1.99	5.17	5.67	1.55	7.85	0.16	4.30	T.	36.73
*Danville	413	.....	.....	3.79	1.38	3.99	4.60	9.37	0.94	.....	.....	.....	.....	.....

[1] W. G. Jones.

[2] Cotton-region observer.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Virginia—Continued.														
	Feet.													
Fredericksburg	47	1.54	3.65	3.85	1.90	4.60	5.41	5.50	1.28	4.93	0.14	2.60	0.08	35.48
Grahams Forge	2,387	.....	3.61	6.06	2.46	2.68	5.05	4.86	[b]3.95	.....	.....	4.77	[b]0.89	.....
Guinea	100	.....	.....	.....	.....	.....	.....	4.85	5.29	2.29	.....	3.87	0.01	.....
Hampton	3	1.77	4.79	1.55	1.37	7.08	7.24	10.80	2.13	6.24	1.90	2.17	4.04	51.08
Hot Springs	2,195	.....	3.68	5.80	0.94	3.63	3.79	4.47	4.16	6.42	0.47	5.16	0.19	.....
Irwin	150	2.80	3.39	4.57	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lexington	946	2.93	4.21	4.97	1.11	1.55	4.31	8.10	5.65	5.88	0.31	5.35	0.15	44.52
*Lynchburg	685	2.30	4.54	5.54	1.61	5.01	3.82	8.58	2.04	7.08	1.07	4.92	0.13	46.64
Manassas	317	2.69	5.11	4.25	1.29	5.41	4.68	3.73	2.63	2.67	0.24	2.47	0.10	35.27
Marion	2,124	.....	2.60	8.00	1.50	3.20	6.54	4.40	4.76	.....	0.50	5.60	2.10	.....
Monterey	3,008	1.30	2.80	3.77	1.43	4.31	7.98	.....	2.69	6.64	.....	.....	.....	.....
*Norfolk	57	1.89	4.39	1.67	1.18	6.63	7.91	7.26	2.05	3.47	2.15	2.41	3.21	44.22
Nottoway	18	3.26	3.55	3.61	2.12	.....	.....	.....	5.37	5.29	0.90	5.59	1.56	.....
Petersburg	11	2.58	4.64	3.33	1.91	7.25	5.90	8.33	0.70	3.05	0.63	2.53	1.93	42.78
*Radford	1,773	1.73	3.08	5.23	1.88	2.59	3.84	.....	.....	.....	.....	.....	.....	.....
Richmond (near)	96	2.98	4.21	3.98	2.22	4.21	6.11	7.13	1.26	4.61	0.89	3.27	1.27	41.94
Rockymount	33	2.93	3.94	6.63	2.55	2.85	5.24	9.70	2.61	5.45	0.50	5.60	0.43	48.43
Rural Retreat	.....	.....	.....	.....	.....	.....	6.51	3.70	2.83	.....	.....	.....	.....	.....
*Salem	1,200	2.82	4.37	5.77	2.46	2.01	4.79	6.53	1.41	4.92	0.53	5.16	0.41	41.18
Saltville	1,739	0.75	3.39	7.71	2.05	2.16	5.37	6.19	6.00	4.24	1.55	5.42	1.46	46.29
Smithville	1,150	1.85	3.15	4.05	1.43	7.15	3.34	4.69	1.93	4.18	0.52	3.49	1.30	37.08
*Speers Ferry	.....	1.22	4.06	8.11	.....	.....	.....	.....	.....	.....	.....	.....	1.52	.....
Spottsville	15	2.81	6.26	2.92	1.54	7.75	5.78	11.23	1.76	4.14	1.38	1.97	2.98	50.52
Starleyton	1,064	.....	.....	.....	.....	.....	.....	5.23	2.76	.....	.....	.....	T.	.....
Stanardsville	.....	2.41	4.79	2.74	1.83	3.73	3.13	7.41	2.97	5.41	0.11	5.34	T.	39.87
Staunton	1,380	2.55	3.81	4.41	1.33	4.13	6.58	6.10	3.92	8.08	0.23	5.01	T.	46.15
Stephens City	.....	2.73	3.68	3.91	1.35	1.43	6.78	5.97	2.14	5.80	0.86	2.92	0.67	38.24
Sunbeam	60	2.26	6.51	3.26	1.88	8.72	8.18	10.21	5.34	6.31	1.18	2.92	3.59	60.36
Warsaw	200	1.67	4.54	2.24	0.97	4.10	5.80	8.68	0.90	2.99	0.87	2.57	1.02	37.35
Wytheville	2,370	1.76	3.66	5.44	1.30	2.76	7.15	.....	4.22	.....	.....	.....	.....	.....
Woodstock	927	.....	.....	.....	.....	.....	.....	.....	.....	8.47	0.82	3.20	0.35	.....
Washington.														
Aberdeen	.....	22.22	13.10	5.51	8.98	6.09	3.49	0.55	.....	.....	.....	.....	.....	.....
Anacortes	75	4.24	3.19	1.42	4.52	1.04	.....	0.00	1.10	1.56	2.88	6.16	.....	.....
Ashford	1,775	10.91	9.00	3.80	7.66	7.74	3.25	0.00	2.38	1.26	4.56	16.15	9.88	76.59
Blaine	85	7.05	5.46	1.90	3.65	2.47	2.04	0.00	0.95	1.13	3.62	9.32	8.30	45.95
Cascade Tunnel	3,350	.....	16.70	9.96	9.30	6.10	2.10	0.12	0.09	.....	2.37	[c]12.90	.....	.....
Centerville	1,509	2.03	0.85	0.88	1.25	1.08	0.16	T.	0.51	0.23	0.36	7.29	2.77	17.41
Chehalis	204	7.76	5.51	2.81	5.47	3.69	1.35	0.00	0.59	1.44	3.60	12.19	10.63	55.04
Colfax	1,974	2.87	1.42	1.37	1.69	2.10	0.69	0.35	1.44	0.49	1.26	6.16	3.64	23.48
Coupeville	2	3.34	2.39	1.31	2.54	1.78	1.04	T.	1.12	1.11	1.75	3.60	2.88	22.86
*East Clallam	.....	26.93	14.34	4.32	4.54	4.02	2.85	0.00	.....	.....	.....	.....	.....	.....
Eastsound	[1]50	4.69	3.78	2.04	1.56	1.72	0.83	0.00	0.30	1.17	2.51	7.72	4.73	31.05
Ellensburg	1,577	1.89	0.58	0.71	0.94	1.26	0.17	0.00	.....	0.63	0.22	3.45	1.36	.....
Ellensburg (near)	1,700	2.16	0.26	0.50	1.00	0.85	0.10	0.00	0.10	0.80	0.12	3.50	0.50	9.89
*Fort Canby	179	11.53	8.15	4.83	6.99	4.84	2.70	0.00	1.22	1.75	5.40	15.12	16.04	78.57
Fort Simcoe	.....	3.12	1.43	1.24	0.80	1.14	0.17	0.00	0.54	0.12	0.03	6.89	2.30	17.78
Fort Spokane	1,400	2.55	0.34	0.23	2.65	2.70	0.21	0.00	0.83	0.19	0.95	3.20	3.18	17.03
Grand Mound	162	7.08	5.76	3.27	4.36	3.54	1.54	0.00	0.48	1.80	2.72	14.08	12.20	56.83
Hunters	.....	3.26	0.80	0.26	2.11	3.33	0.90	0.01	0.83	1.47	1.29	4.76	2.92	21.94
Kennewick	350	0.35	0.05	0.41	0.49	0.53	0.05	0.00	0.05	0.70	0.24	1.50	1.50	5.87
Lakeside	985	2.50	0.18	0.70	1.33	1.80	0.09	0.01	0.67	0.64	1.00	3.00	1.78	13.70
Lapush	.....	21.46	9.35	3.80	5.65	5.19	3.30	.....	.....	1.79	6.80	14.51	19.15	.....
Loomis	[1]1,200	.....	.....	.....	.....	.....	.....	.....	0.63	0.88	1.05	2.66	2.52	.....
Madrone	75	10.80	3.78	3.54	3.93	3.82	0.98	0.00	0.23	1.21	2.84	11.86	8.84	51.83
Mayfield	300	7.24	5.76	4.44	6.41	6.60	[c]2.78	.....	[c]1.78	1.99	3.65	16.19	10.68	.....
Montechristo	.....	16.43	15.36	8.71	6.43	5.80	5.12	T.	1.29	2.75	5.85	17.50	.....	.....
Moxee Valley	1,000	0.46	0.27	0.11	0.29	1.09	0.07	T.	0.40	0.26	0.10	1.61	1.14	5.80
*Neahbay	.....	25.83	17.50	7.21	7.87	4.90	4.49	0.08	0.00	.....	.....	.....	.....	.....
New Whatcom	60	3.16	4.29	2.25	2.95	2.47	2.06	0.10	0.68	1.30	1.96	6.35	6.54	34.11
Olga	[1]50	3.54	3.95	1.79	2.17	1.63	1.29	0.00	0.43	1.03	3.32	7.13	7.13	33.41
Olympia	36	10.86	6.53	3.59	4.06	3.98	1.31	0.00	0.83	2.30	3.88	13.98	14.14	65.46
Pine Hill	600	4.42	2.23	2.65	2.09	1.90	0.23	T.	0.62	0.64	1.12	9.95	4.59	30.44
Pomeroy	1,900	3.88	0.44	1.31	1.14	0.76	0.43	0.23	1.39	0.24	0.70	3.65	2.39	16.06
*Port Angeles	29	5.07	3.93	1.72	1.01	0.72	0.31	0.00	0.47	0.91	2.13	7.48	6.65	30.40
*Port Crescent	.....	10.10	6.53	2.46	1.73	1.58	1.45	.....	.....	.....	.....	.....	.....	.....
Pullman	2,550	2.75	1.61	1.83	1.89	2.42	1.06	0.15	1.21	0.43	0.90	6.81	4.40	25.46
*Pysht	.....	17.96	11.39	4.11	3.43	3.25	2.61	0.00	0.04	.....	4.55	13.96	14.99	.....
Quiets	.....	.....	17.11	7.84	9.91	6.58	4.67	0.21	1.44	2.88	7.88	.....	.....	.....
Rosalia	[1]2,300	2.75	1.29	0.72	1.78	2.31	0.71	0.60	1.60	0.27	1.37	6.46	4.15	24.01
*Seattle	119	7.00	3.87	2.41	3.27	3.60	0.77	0.00	0.50	1.78	2.49	9.50	7.58	42.83
Sedro	38	.....	.....	.....	.....	.....	.....	.....	0.90	1.68	4.59	9.55	9.00	.....
Silver Creek	.....	6.82	7.10	4.02	6.76	5.88	2.91	T.	1.98	1.91	4.09	14.32	11.83	67.62
Snohomish	[1]50	7.38	6.10	3.08	5.03	4.17	1.63	0.00	0.35	2.22	3.33	8.35	6.81	48.45
Southbend	[1]6	17.44	14.17	5.84	9.67	7.49	4.01	0.00	.....	.....	.....	15.65	18.98	.....
*Spokane	1,930	3.00	1.03	0.74	1.20	2.29	0.73	0.17	1.48	0.42	0.94	4.85	3.47	20.32
Stampede	2,746	.....	.....	.....	.....	.....	2.30	0.00	1.19	2.02	3.89	.....	.....	.....
Stillaguamish	[1]35	6.01	5.02	1.58	5.22	.....	0.14	T.	0.57	1.48	.....	4.05	7.73	.....
Sunnyside	764	1.44	0.17	0.20	0.57	0.58	2.02	T.	0.71	0.40	0.42	1.49	1.93	8.05
Tacoma	31	6.50	4.65	2.88	5.17	3.79	3.89	0.00	0.63	1.74	2.74	9.79	11.11	51.02
*Tatoosh Island	86	22.57	13.53	5.08	6.73	4.69	2.20	0.10	2.48	0.82	6.79	14.16	19.91	100.85
Union City	10	22.40	6.58	2.98	6.95	4.61	1.62	0.00	0.88	1.85	4.90	19.39	19.57	92.31
Vashon	110	7.44	4.03	2.53	5.27	3.21	0.88	0.00	0.44	1.66	3.36	11.24	10.78	51.58
*Walla Walla	1,018	1.88	1.20	1.15	3.85	1.68	0.39	0.15	1.24	0.17	1.57	3.09	2.55	19.41
Waterville	2,500	2.75	0.00	0.70	2.61	2.16	.....	0.00	0.85	0.89	0.81	3.10	2.82	17.08
Wenatchee Lake	.....	.....	1.94	.....	1.40	1.75	.....	T.	0.10	0.40	0.70	7.85	.....	.....
West Ferndale	.....	4.63	7.57	2.94	3.64	2.80	2.52	T.	0.84	1.30	2.79	10.80	8.60	46.43

[1] Estimated.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
West Virginia.	*Feet.*													
Beckley	2,300				0.82		3.98	3.30	2.89	1.59				
Beverly	2,250	1.63	5.53	6.41	3.17	5.50	5.04	15.60	3.26	5.68	2.20	3.92	2.88	60.82
Bloomery	700	1.96	3.10	3.02	1.27	2.69	4.05	6.13	1.45	9.04	1.08	1.56	1.31	36.66
Bluefield	2,563	1.36	2.62	6.38	2.15	2.18			5.69	5.28	1.39	4.58	1.40	
*Buckhannon	1,500	2.55	3.21	5.09	3.48	2.44	4.77	13.63	1.91	4.87	3.31	5.01	2.58	52.85
Burlington	830	1.60	4.08	3.60	2.05	3.28	5.41	7.82	2.69	5.85	0.95	3.60	1.29	42.22
*Charleston	598	1.05	4.20	6.00	3.35	4.13	4.81	4.83	4.63	3.83	2.54	3.73	1.62	44.72
Creston			6.23	4.54							2.70	2.80		
Dayton	925	1.39	2.47	4.07	3.18	4.43	5.53	14.10	2.20	4.90	1.59	2.85	1.97	48.68
Elkhorn	1,885	1.16	3.30	8.40	2.76	1.61	6.69	7.82	4.59	4.70	1.78	4.71	1.28	48.80
Ella		1.93	2.67	3.66	2.24	2.11								
*Fairmont	888	1.16	2.79	4.48	1.57	5.92	4.59	13.33	2.64	4.41	2.95	3.13	2.29	47.26
*Glenville	738	2.13	3.63	5.13	1.40	2.32	6.11	14.15	2.17	5.89	3.74	3.86	2.24	52.77
Grafton	985	1.50	2.96	4.70	2.18	4.84	4.01	11.91	2.22	4.68	2.83	3.38	2.00	47.21
Green Sulphur	1,600	0.74	1.50	4.51	0.84	2.45	4.38	2.91	1.10	1.90	0.53	3.49	1.91	26.26
*Harpers Ferry	277	1.94	4.19	2.48	1.64	4.60	5.25	5.08	0.88	4.29	0.88	2.06	1.04	34.33
Hewett	858	0.67	4.08	6.67	1.31	2.83	7.57	5.74	3.48	3.59	2.13	4.50	1.85	44.42
*Hinton	1,372	0.92	3.16	5.46	2.64	3.97	5.87	4.35	2.08	3.91	1.03	3.79	1.55	38.73
Leachtown		2.18	2.20	3.52	1.11	4.06	3.25							
Marlinton		1.45	5.26	6.99	1.82	3.74	3.71	7.80	3.28	4.48	1.22	4.93	1.08	45.76
Martinsburg	435	1.60	2.97	2.58	1.30	1.26	7.54	5.64	1.03	3.50	1.13	2.48	0.75	31.78
*Morgantown[1]	963	1.43	3.06	4.29	1.39	3.82	3.74	13.98	2.74	4.19	3.00	4.18	1.91	47.53
Morgantown[2]	963	0.96	3.74	3.35	1.68	3.57	4.16	9.80	1.91	3.78	3.08	4.17	1.36	41.56
New Martinsville		1.91	2.78	3.90	2.07	3.06	6.81	15.09	2.26	4.28	2.18	3.32	2.20	49.86
Nuttallburg		1.80	4.65	6.00	2.60	2.30	7.40	4.30	3.40	3.75	2.60	3.50	0.80	43.10
Oldfields	800	1.34	2.32	3.27	1.26	2.55	3.41	6.09	2.80	6.43	0.45	2.86	0.60	33.38
*Parkersburg	638	1.42	3.14	4.58	2.37	1.95	4.22	11.46	4.37	3.86	3.52	3.48	1.56	45.93
Pennsboro		1.29		3.46	1.91	3.23	6.71	13.54	2.39	4.84	3.35	3.60	1.85	
Philippi	1,192			5.53		3.63	4.71	15.70	2.70	8.26	2.20	4.33	2.39	
*Point Pleasant	553	1.59	3.24	4.76	1.84	2.18	3.08	8.21	5.05	3.79	2.45	2.87	1.15	40.21
Powellton	904	1.54	3.82	6.48	1.70	4.13	8.30	4.59	2.52	4.50	2.00	3.59	1.99	45.25
*Rowlesburg	1,402	1.65	3.11	1.76	1.00	3.21	6.61	12.14	1.18	3.49	2.93	2.20	1.81	41.09
Sandyville		1.43	2.83	3.86	1.42	2.15	3.04	7.83	2.49					
Spencer		1.70	2.16	4.66	2.80	1.60	2.91	7.10	2.70				1.95	
*Weston	824	2.72		4.61	1.95	3.39	7.03	15.15	3.86	4.02	4.37	3.57	2.50	
*Wheeling[1]	637	1.84	1.71	3.39	3.16	3.47	5.63	11.08	1.57	3.91	2.15	1.57	1.61	41.09
Wheeling[3]	637	2.12	2.25	3.65	4.35	2.89	5.89	11.84	2.17	3.87	2.01	2.62	1.77	45.43
White Sulphur Springs	2,000				2.76	2.13	5.08	5.30	3.80	5.15	0.90	5.07		
Wisconsin.														
Amherst	1,200	1.01	0.60	1.15	4.70	7.65	6.20	2.83	2.73	4.09	2.39	1.50	0.80	35.09
Antigo	1,489	0.99	0.12	1.07	4.69	5.61	3.67	2.63	6.32	2.42	3.26	3.23		
Apollonia		1.00	0.20	2.04	5.38	5.70	4.35	2.96	3.94	2.18	3.82	6.74	0.90	39.21
Bayfield	600	0.70	0.65	0.75	4.30	3.62	1.75	1.71	1.00	1.27	3.64	3.22	1.20	23.81
Beloit	750	0.41	0.85	1.49	2.25	5.02	3.15	5.77	2.64	7.59	0.67	1.53		
Black River Falls					3.84		2.89	3.94	3.07					
Boscobel	710	1.05	0.53	1.40	4.99	5.54	4.72	2.26	2.79	4.49	1.90	1.76	0.80	32.23
Butternut	1,400	1.54	0.49	1.70	3.18	4.04								
Centralia	926	0.67	0.20	0.80	4.21	4.63	3.21	1.28	1.23	4.30	1.78	1.90	0.80	25.01
Chilton	900	0.99	0.33	1.51	3.97	3.50	3.35	3.80	2.37	5.05	1.32	0.99	0.69	27.87
City Point	973	0.53	0.42	0.90	5.22	5.29	3.37	2.85	2.23	5.03	3.16	2.81	0.54	32.35
Crandon	1,100	0.60	0.60	1.00	1.18	3.05	0.51	3.80	2.16	1.80	1.47	5.20	1.60	22.97
Delavan	920	0.59	0.89	1.51	3.75	2.44	3.01	8.30	1.44	8.79	0.79	1.42	0.60	33.53
Depere	594	1.38	0.28	1.86	5.06	2.69	3.84	1.48	3.21	4.39				
Dodgeville	1,116								1.91	4.16	3.29	1.58	1.11	
Easton	1,073							4.27	1.93	4.75	2.45	3.21	0.43	
Eau Claire	600	1.40	0.40	0.60	6.35	4.50	6.25	2.67	3.00	3.03	3.00	3.70	0.50	35.40
Florence	1,264	0.92	0.17	1.18	3.81	3.87	1.83	1.91	4.92	1.89	2.94	4.66	1.37	29.47
Fond du Lac	800	0.94	0.29	1.52	3.68	3.85	3.44							
Grand River Lock		1.32	0.30	0.56	5.48	8.65	3.33	2.92	1.93	4.08	1.54	2.06	0.68	32.85
Grantsburg	1,100	1.15	0.50	2.57	7.10	5.91	3.47	1.30	1.53	2.63	4.22	4.75	1.35	36.48
Gratiot	1,016								0.75	5.96	2.30	1.45	0.55	
*Greenbay	616	0.98	0.26	1.19	5.48	3.60	3.35	2.45	2.96	5.21	3.13	3.00	0.88	33.09
Hartford	1,017	0.91	1.11	2.33	4.71	5.38	2.36	3.11	2.39	5.58	2.17	3.03	0.73	33.81
Harvey	897	1.16	0.82	1.41	3.87	4.49	2.16	4.34	3.07	5.66	0.90	2.58	0.98	31.44
Hayward	1,197	2.40	0.51	1.95	7.06	5.10	3.21	1.40	1.57	2.03	1.51	2.70	2.44	31.88
Hillsboro		1.57	0.45	0.35	5.40	5.37	3.38	2.57	2.15	3.35	3.10	2.91	0.45	31.05
Koepenick	1,683	1.25	0.50	1.05	4.30	5.50	1.90	2.70	3.90	2.30	3.90	4.10	0.80	32.20
*La Crosse	720	0.67	0.25	0.60	5.84	3.55	4.29	1.51	2.16	3.33	3.69	2.66	0.60	29.15
Lancaster	1,070	0.89	0.61	1.41	5.30	5.60	3.94	2.99	1.73	4.21	2.49	1.69	1.27	32.13
Lincoln	817	1.42	0.15	1.73	6.03	3.61	3.90	1.62	2.61	4.98	0.88	2.96	0.40	30.29
Madison	935	0.85	0.32	0.78	4.91	6.31	2.69	3.62	2.48	4.29	1.69	1.40	0.68	30.02
Manitowoc	616	1.05	0.25	1.95	7.51	3.98	1.88	2.91	1.98	4.81	1.31	2.94	0.66	31.23
Meadow Valley	974	0.49	0.80	0.57	5.37	6.15	2.70	3.49	1.82	4.89	2.77	2.50	0.39	31.88
Medford	1,420		0.78	0.95	2.61	5.22	4.10	6.15	3.18	2.33	2.45	3.06	0.59	
Menasha	764	0.33	0.33	1.01	5.30	3.16	3.16	2.57	2.66	3.63	0.12	1.25	0.78	24.30
*Milwaukee	673	1.22	1.36	2.82	3.85	3.21	2.03	2.64	1.77	5.72	1.02	2.48	0.76	28.98
Neillsville	600	1.16	0.50	0.95	5.16	5.26	3.21	2.65	4.96	4.88	3.73	4.27	0.40	37.13
New Holstein	925	0.78	1.00	1.38		5.00	3.14	7.10	1.22	7.92		4.54	0.44	
New London	762			1.48	5.35	4.78	5.14	3.90	1.14	4.08	2.15	1.99	0.93	
Oconomowoc	858	0.64	0.44	1.30	5.29	3.65	1.91	3.75	2.30	5.85				
Oconto	590	1.90	0.40	1.79	7.19	4.16	2.46	1.77	2.35	4.04	3.74	5.21	1.00	36.01
Osceola	806	0.71	0.10	2.34	5.67	4.86	6.63	1.83	4.38	2.77	3.54	3.20	0.79	36.82
Oshkosh	744	1.54	0.10	1.36	3.72	4.74	2.20		*0.72	4.89	2.42	1.92	1.14	
Pepin	691	0.53	0.33	1.84	5.43	3.49	4.64	0.67	1.40	2.53	2.66	2.97	0.82	27.31
Pine River		0.62	0.19	0.70	4.56	9.03	4.12	3.26	2.24	3.76	2.24	2.63	0.81	34.16
Portage	809	1.14	0.20	0.35	3.84	6.11	3.15	2.78	2.31	3.94	1.53	1.15	0.47	26.97
Port Washington	717	1.00	0.80	2.30	4.56	6.04	2.93	1.74	1.49	5.50	1.00	3.00	1.44	31.80
Prairie du Chien	690	0.50	0.25	0.94	5.59	6.93	4.53	2.18	3.12	4.27	2.49	2.23	0.31	33.84
Racine	633						1.92	4.94	1.02	9.22	0.71	1.80	0.64	

[1] River observer. * West Virginia University. [3] Christian Schnepf.

MONTHLY AND ANNUAL PRECIPITATION (IN INCHES AND HUNDREDTHS) FOR 1896—Continued.

Stations.	Elevation.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Wisconsin—Continued.	*Feet.*													
Royalton	.....	1.21	0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.50	36.09
Sharon	1,028	0.75	1.58	1.73	3.64	3.42	3.09	7.50	1.07	9.58	0.74	2.49	0.76	32.83
Shawano	800	0.99	0.25	1.40	6.25	3.26	2.36	4.20	5.03	3.42	2.57	2.34	0.70	25.97
Spooner	1,104	0.40	0.10	3.20	4.31	2.86	3.99	1.33	1.52	2.00	3.46	2.10	0.67	34.97
Stevens Point	1,113	0.67	0.19	0.38	3.67	7.68	5.20	2.94	3.49	4.94	2.38	2.76	0.45	30.85
Valley Junction	792	0.97	0.27	0.57	5.23	4.20	3.04	5.16	1.73	3.83	3.05	2.22	0.45	37.59
Viroqua	1,412	0.94	0.30	0.79	8.19	5.36	6.83	1.48	2.48	3.77	3.34	3.66	1.14	33.45
Watertown	.....	1.24	1.13	1.70	4.59	5.03	3.13	4.49	2.40	5.69	0.80	2.11	0.56	28.22
Waukesha	970	0.43	0.89	1.82	4.11	4.12	2.59	2.59	2.67	5.71	0.68	2.05	1.36	33.61
Waupaca	857	0.85	0.19	1.23	4.74	7.57	4.44	2.64	1.68	4.21	2.76	2.25	0.43	36.55
Wausau	1,212	1.02	0.38	1.19	3.26	5.03	5.02	1.45	5.84	2.26	2.91	3.99	0.45	31.20
Westbend	910	1.02	0.60	2.03	6.05	9.35	1.97	2.14	2.18	7.83	0.97	1.98	0.41	.....
Westfield	925	0.95	0.35	0.45	5.03	7.09	4.37	3.24	1.32	4.02	2.36	1.57	0.00	9.54
Whitehall	675	1.10	0.30	1.75	4.25	4.60	4.35	.....	.....	.....	.....	1.64	0.03	20.79
Wyoming.														
Bighorn Ranch	.....	0.40	0.35	0.75	1.76	1.21	0.63	1.45	0.90	0.92	0.40	0.77	0.00	14.67
*Cheyenne	6,105	0.68	0.31	2.06	2.08	2.85	1.41	6.35	2.52	2.08	0.28	0.14	0.00	11.07
Embar	.....	0.50	0.50	2.60	1.10	1.70	.....	.....	.....	.....	.....	.....	0.41	20.77
Fort Laramie	.....	1.29	0.61	1.14	0.97	2.63	2.34	1.41	[b]1.00	1.75	0.83	0.70	0.00	12.32
Fort Washakie	.....	0.25	0.20	1.62	1.60	2.13	0.60	1.67	1.19	0.93	0.46	0.42	T.	13.80
Fort Yellowstone	.....	2.21	2.07	2.62	1.29	3.85	0.73	2.09	0.37	1.10	0.06	3.92	T.	14.44
*Lander	5,377	0.24	0.26	2.63	1.20	1.75	0.12	3.00	0.49	1.08	0.74	0.81	0.46	11.59
Laramie	7,159	0.44	0.17	0.59	3.53	2.37	2.72	1.66	0.89	1.16	0.18	0.09	0.00	23.72
Lusk	5,007	0.72	0.66	1.43	1.19	2.78	2.27	1.08	0.59	1.97	0.87	0.88	0.52	.....
Sheridan	.....	1.05	0.25	1.65	1.05	0.81	0.74	1.09	T.	2.33	0.62	1.85	0.15	
Sundance	.....	0.70	1.90	4.50	2.71	1.94	3.45	2.38	0.53	3.35	0.66	1.20	0.40	
Wheatland	4,747	1.70	0.60	1.40	0.55	2.73	.....	0.52	2.19	0.40	0.12	0.85	0.00	

Blank page retained for pagination

PART VI.

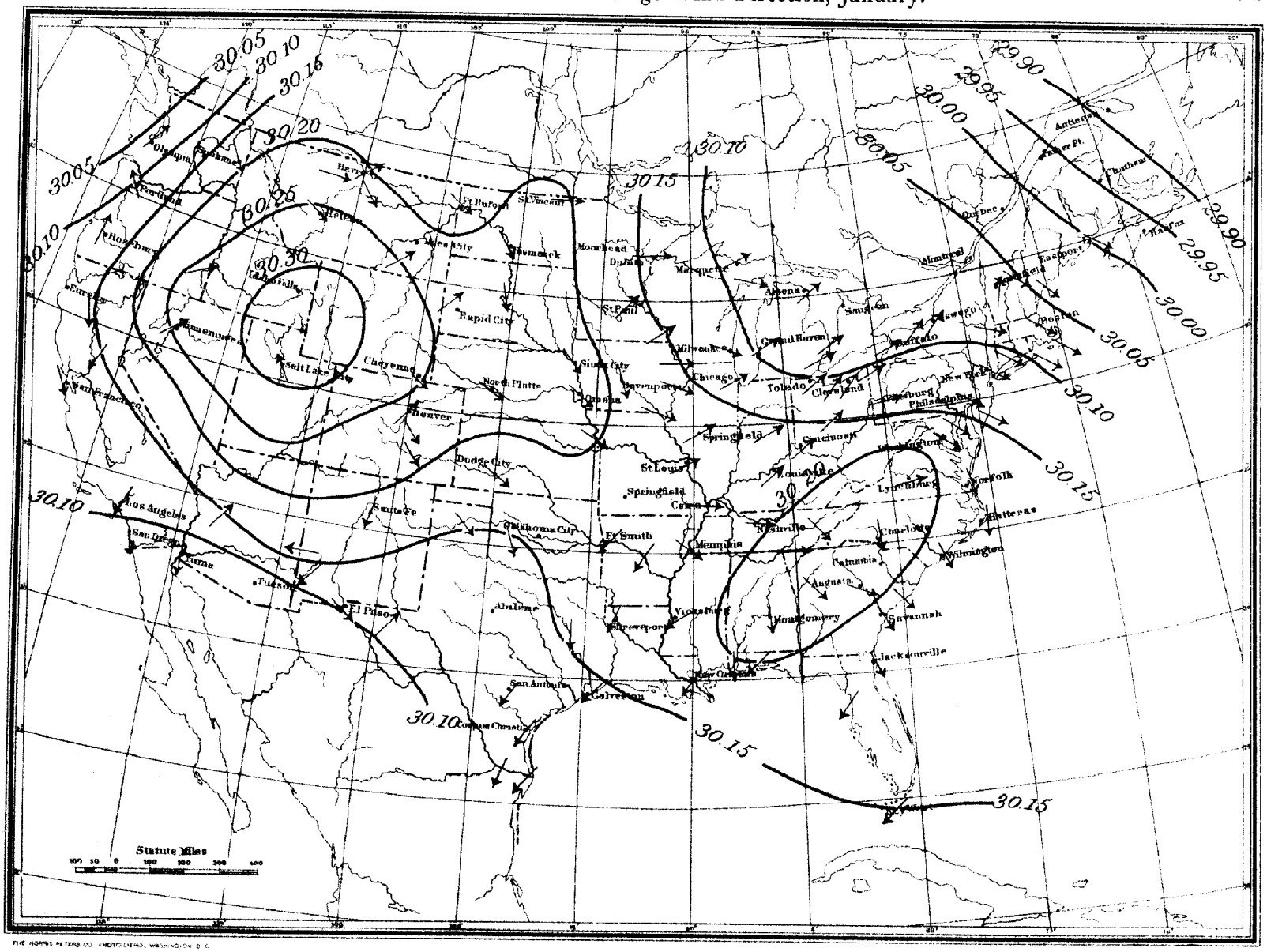
MISCELLANEOUS METEOROLOGICAL TABLES AND REPORTS.

Climatic statistics and normals of temperatures, cloudiness, relative humidity; sunshine, snowfall and severe local storms, 1896.

Blank page retained for pagination

Normal Pressure and Average Wind Direction, January.

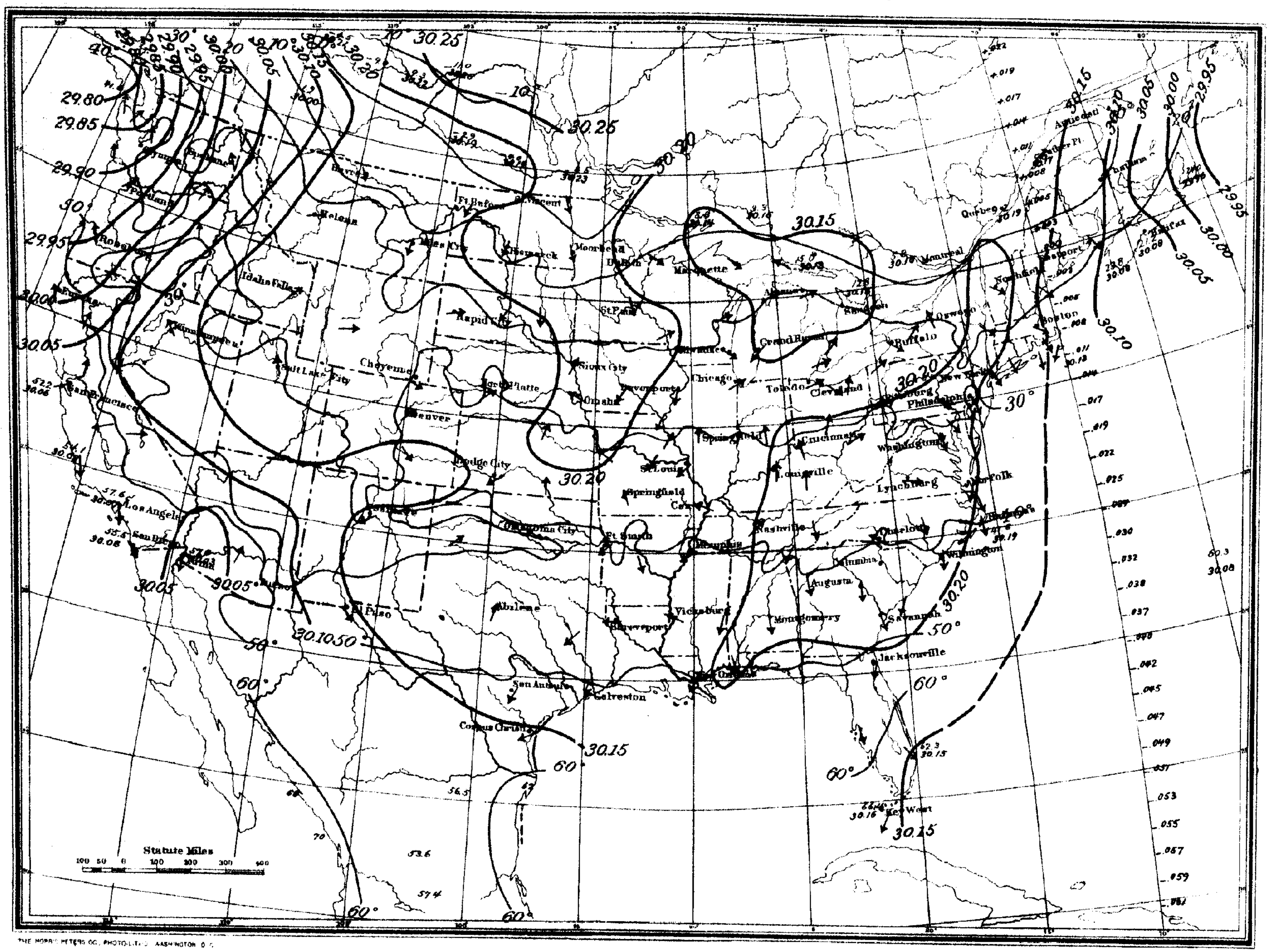
Chart I.



THE HOPKINS PETERS CO. PHOTO-LITHO. WASHINGTON, D. C.

Isobars, Isotherms, and Wind Direction, January, 1896.

Chart II.



CLIMATIC STATISTICS, 1896.

ALFRED J. HENRY, Chief of Division.

The weather of 1896, from a purely statistical point of view, is presented in Part III of this report.

The texts and charts which follow have been prepared chiefly to supplement the tabular matter of Part III, and also with a view of aiding persons having but little knowledge of statistical methods in meteorology to apprehend the true significance of the monthly means, extremes, etc., that appear in the tables.

The weather at a given moment may be defined in exact terms; thus, we may say it is clear with light northerly winds, and this formal statement enables persons at a distance to form an accurate impression of the existing weather conditions. The daily weather map gives us a glimpse of the weather throughout the United States, an instantaneous view, so to speak, of the condition of the atmosphere twice daily, at 8 a. m. and at 8 p. m., Eastern standard time, but we can not present such an accurate outline of the climate, using that term to express the successive variations of cloud and sunshine, the alternation of warm and cold periods, etc.

In the course of a year 730 observations of the weather are made at the principal Weather Bureau stations. These observations are summarized at the end of each month and the results serve as the ground work of climatic investigations.

The monthly and annual averages given in the tables of Part III have as their basis therefore the twice-daily observations at 8 a. m. and 8 p. m., Eastern standard time, which corresponds to 7 a. m. and 7 p. m., Central, 6 a. m. and 6 p. m., Mountain, and 5 a. m. and 5 p. m., Pacific standard time.

The above statement is equivalent to saying that the local time of observation between the Atlantic and Pacific coasts differs by three hours, that is to say, observations on the Atlantic coast are made three hours later in the day than on the Pacific coast although both are made at the same moment of absolute time.

Atmospheric pressure.—The figures given in the tables of Part III under the heading "Pressure" refer to the actual pressure at the station and as such are useful to the physician or traveler.

The character of the weather in middle latitudes is to a great extent determined by the daily variations of pressure and the resultant changes in the direction of the wind. While, in most cases, the minor pressure changes are obscured in the monthly averages and charts, yet the outlines of the greater variations are preserved and we are thus able to trace the shifting of the mass of the earth's atmosphere from month to month and from one region to another. In order to detect the daily and seasonal fluctuations, however, it is necessary to reduce the actual observed pressures at the various stations to a uniform height. The level of the sea is by common consent the plane to which barometric readings in all countries are reduced.

Chart I shows the normal sea-level pressure for January as deduced from nineteen years observations. The lines on the chart (isobars) connect points having equal pressures and the arrows show the prevailing direction of the wind. The January chart is typical of the conditions which obtain in the cold season. For purposes of comparison the sea-level pressures and prevailing winds for January, 1896, Chart II, the latter being reproduced from the Monthly Weather Review, have been added. Similar charts for July appear on subsequent pages and complete the series.

Chart I shows the normal conditions in midwinter. The continent is then much colder than the adjacent oceans, and the surface winds tend to blow outward toward the sea in almost all cases. The cold air of winter has a tendency also to run down mountain sides and slopes into the valleys below. This tendency is manifested on a grand scale on the plains east of the Rocky Mountains.

In New England and the Middle States the contrast between the temperature of the air over land and adjacent water surfaces is so great that the prevailing winds blow toward the ocean in obedience to the general tendency of air to flow from colder to warmer regions. This is merely another form of the statement that air flows from a region of high pressure to a region of low pressure.

An examination of the January chart will show how closely the wind directions conform to the general law expressed in the above paragraph.

In winter pressure is greatest over the Rocky Mountain plateau and the Great Basin and the South Atlantic States, these regions appearing on the maps as islands of maximum pressure in the zone of high pressure that encircles the globe. (See area inclosed by isobars of 30.20 inches.) The area of high pressure over the Rocky Mountain plateau does not preserve a symmetrical form from year to year. In some seasons it may encroach upon the North Pacific and in others it may be found inland over the upper Missouri Valley and the Dakotas. These oscillations, or rather the individual waves of high and low pressure that cause the displacement, determine to a great extent the character of the weather in corresponding months; thus, high pressure over the Northwest Territories and the Dakotas induces a circulation of air that is favorable to warm weather and heavy precipitation on the Pacific Coast. An extension or displacement of the high pressure area of the South Atlantic Coast likewise has an important bearing upon the weather of the eastern seaboard.

As the continent becomes warm under the influence of solar radiation the areas of high pressure retreat toward the sea, and if we examine the successive monthly charts we will find that by midsummer the configuration of the isobars and the prevailing winds have changed very greatly. Chart III exhibits the changed or midsummer condition. (July.)

The interior of the continent is now much warmer than the sea on all sides. The rarified air over the interior ascends; the barometric pressure is diminished and air flows in from the oceans and colder regions of the north to take its place.

The tendency of the surface air of the plains is now to flow up the slope toward the mountain region; an almost complete reversal of the conditions of winter. The winds of the Middle States and New England flow toward the region of least pressure—the Gulf of St. Lawrence—the contrast between the temperature of land and sea not being strong enough to deflect them, as in the winter season.

The seat of lowest pressure is now found over the arid region of the southwest. This region becomes warmer than contiguous territory as early as March, and an indraught sets in which reaches a maximum in June and July. The annual reversal of the wind system in that region is exhibited by the figures in the table below.

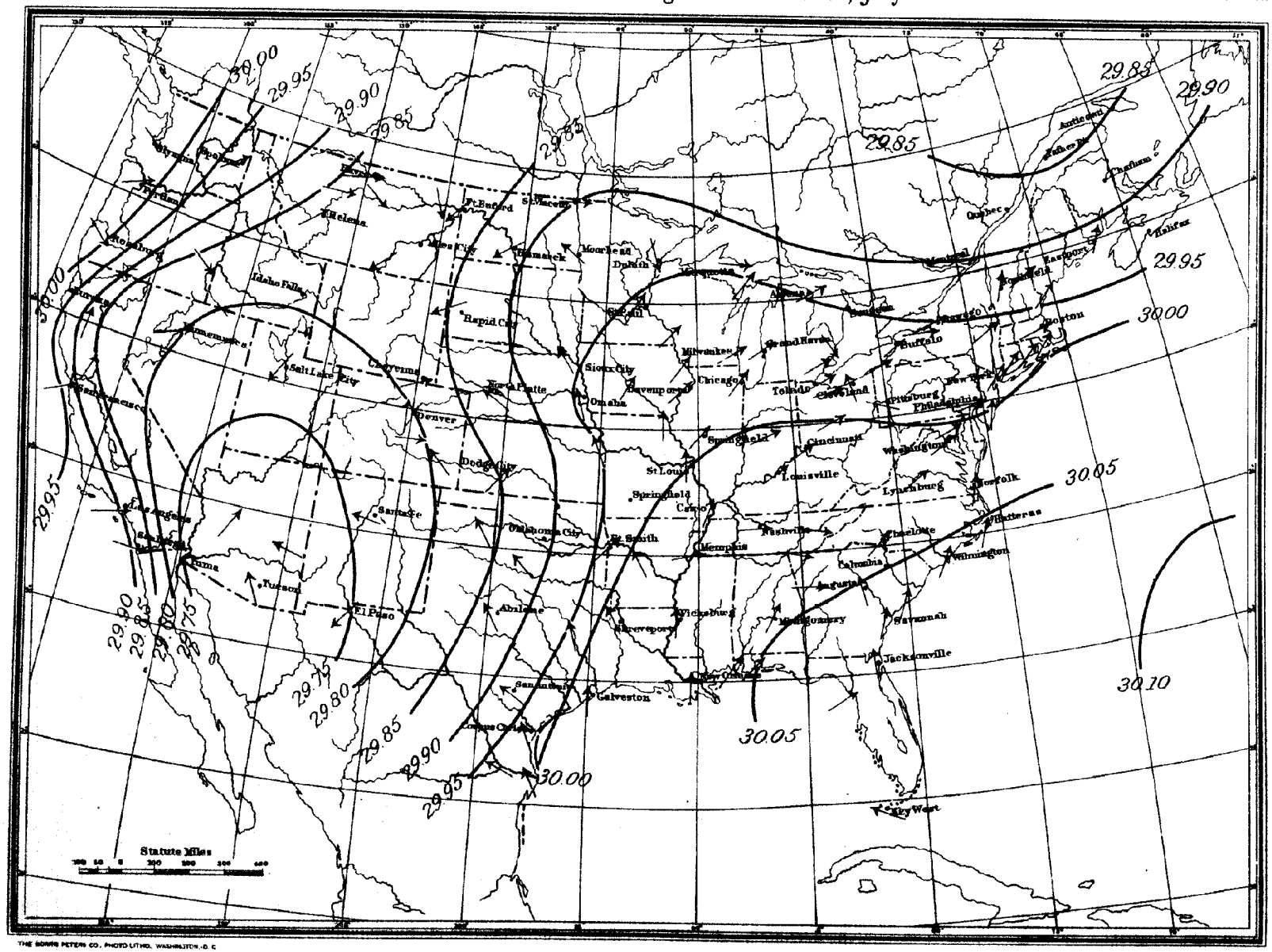
TABLE I.—RELATIVE FREQUENCY OF THE WINDS (EXPRESSED IN PERCENTAGES) AT YUMA, ARIZ., AS DEDUCED FROM TRI-DAILY OBSERVATIONS, 1876-1888.

	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
West	19	24	21	15	9	8	11	10	8	8	9	14
East	8	5	5	7	6	6	8	10	7	8	7	8
Southwest	12	17	20	21	19	19	15	9	6	3	3	7
South	11	12	13	14	23	20	12	7	4	4	6	7
Southeast	6	7	9	14	21	19	9	6	2	4	5	6
Northwest	14	14	13	7	4	4	7	11	11	12	14	16
North	12	7	5	4	2	4	6	13	26	30	28	19
Northeast	10	6	6	7	4	7	16	19	21	20	19	14
Calm	8	8	8	11	11	13	15	15	16	12	9	9

Having thus briefly sketched the broad features of pressure distribution and the prevailing winds, we may next observe wherein the winds and the configuration of the isobars (lines of equal pressure) of January, 1896 (Chart II), differ from normal conditions. (Chart I.)

Normal Pressure and Average Wind Direction, July.

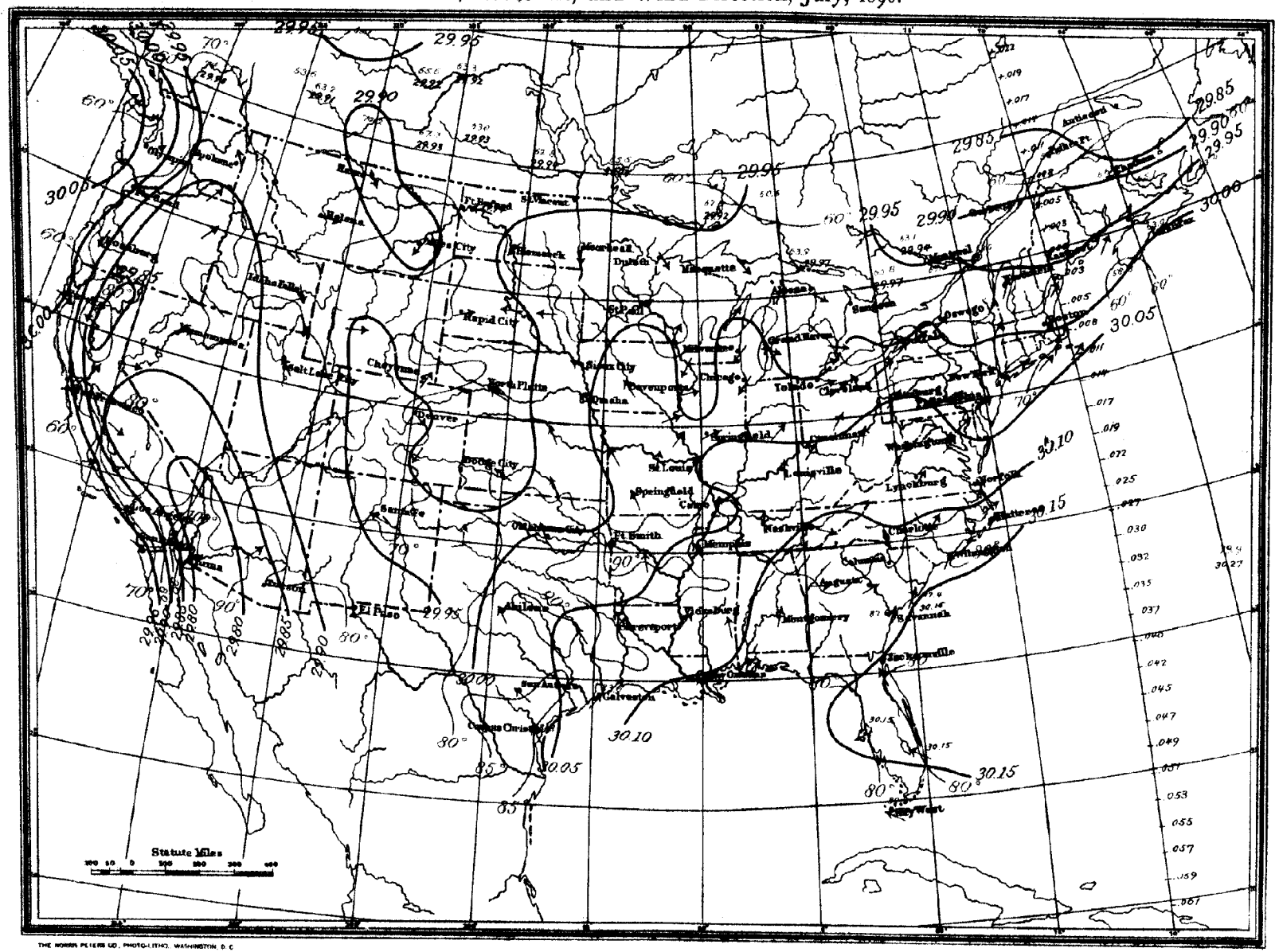
Chart III.



THE BOWIE PETERS CO. PHOTO-LITHO. WASHINGTON, D. C.

Isobars, Isotherms, and Wind Direction, July, 1896.

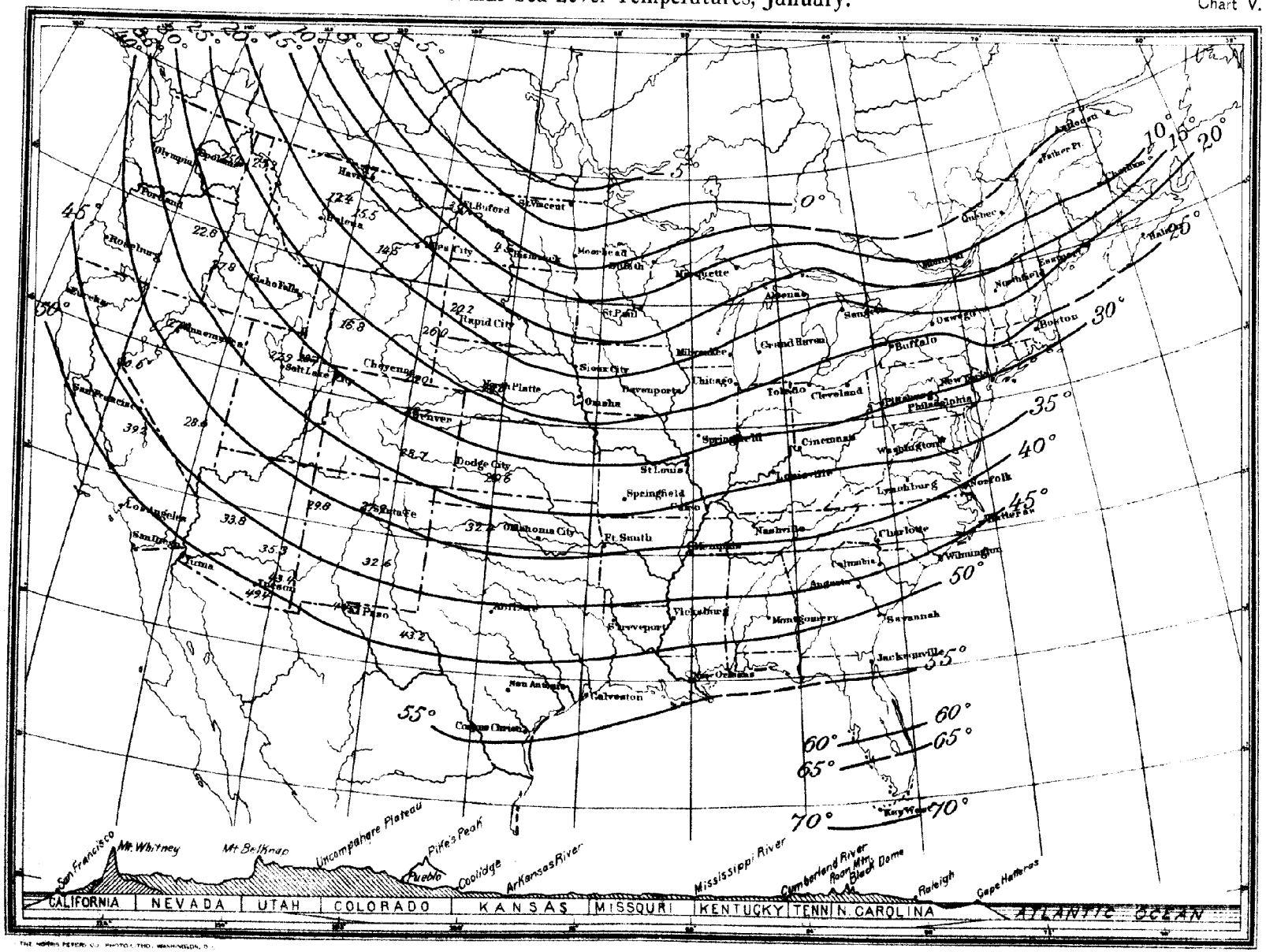
Chart IV.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

Normal Sea-Level Temperatures, January.

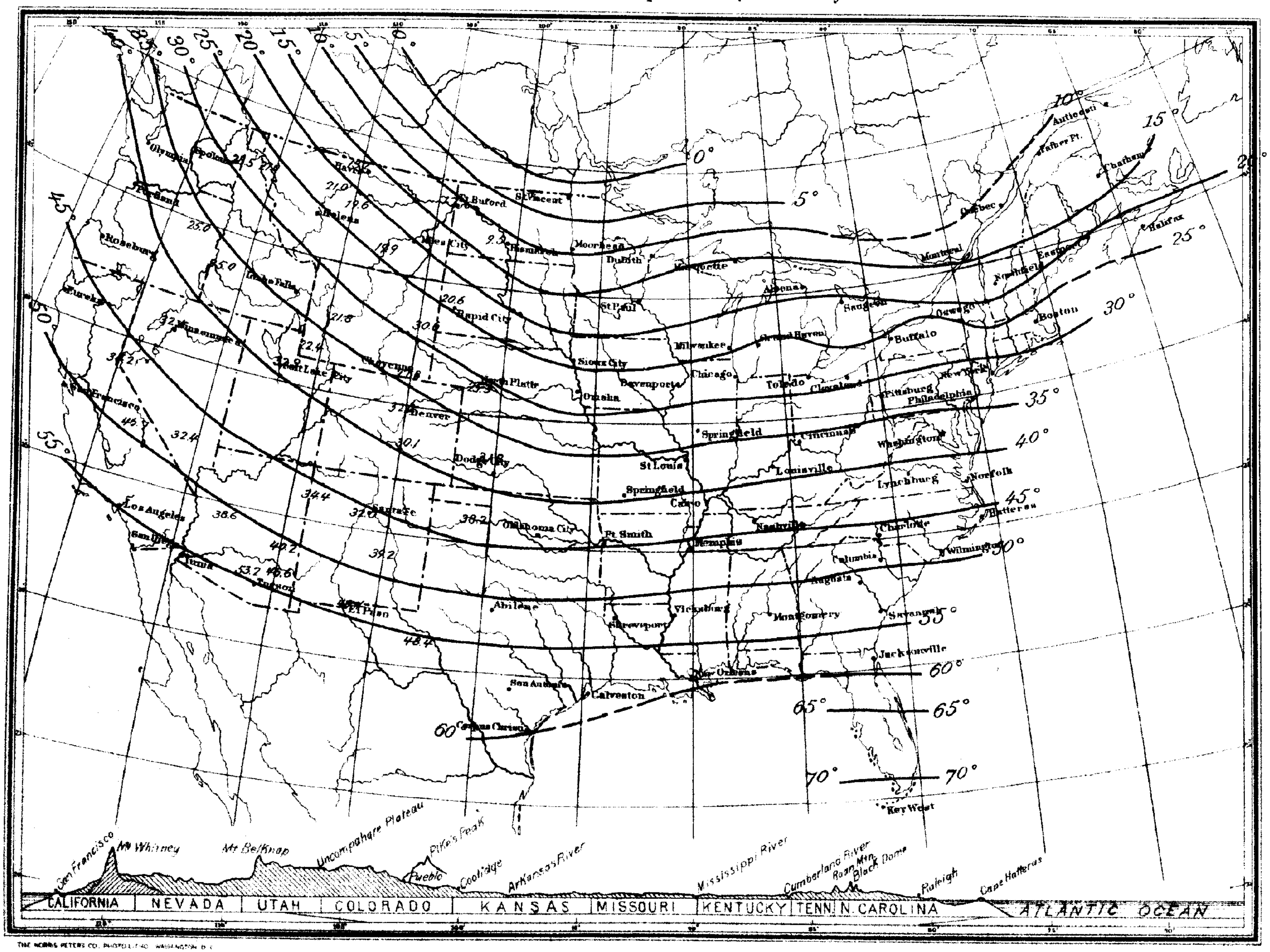
Chart V.



THE HOBBS PETERS CO. PHOTO-LITHO. WASHINGTON, D. C.

Chart VI.

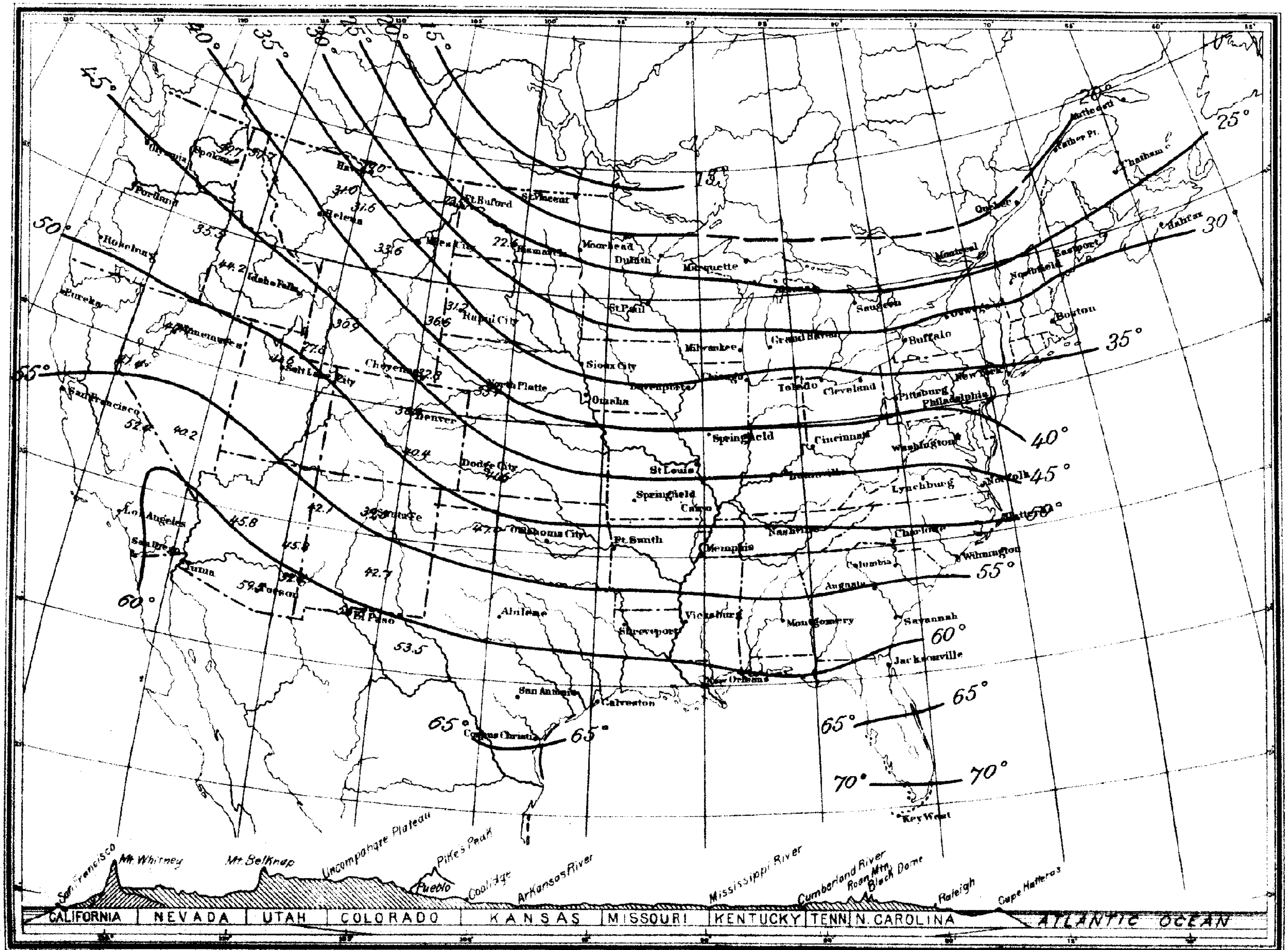
Normal Sea-Level Temperatures, February.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

Normal Sea-Level Temperatures, March.

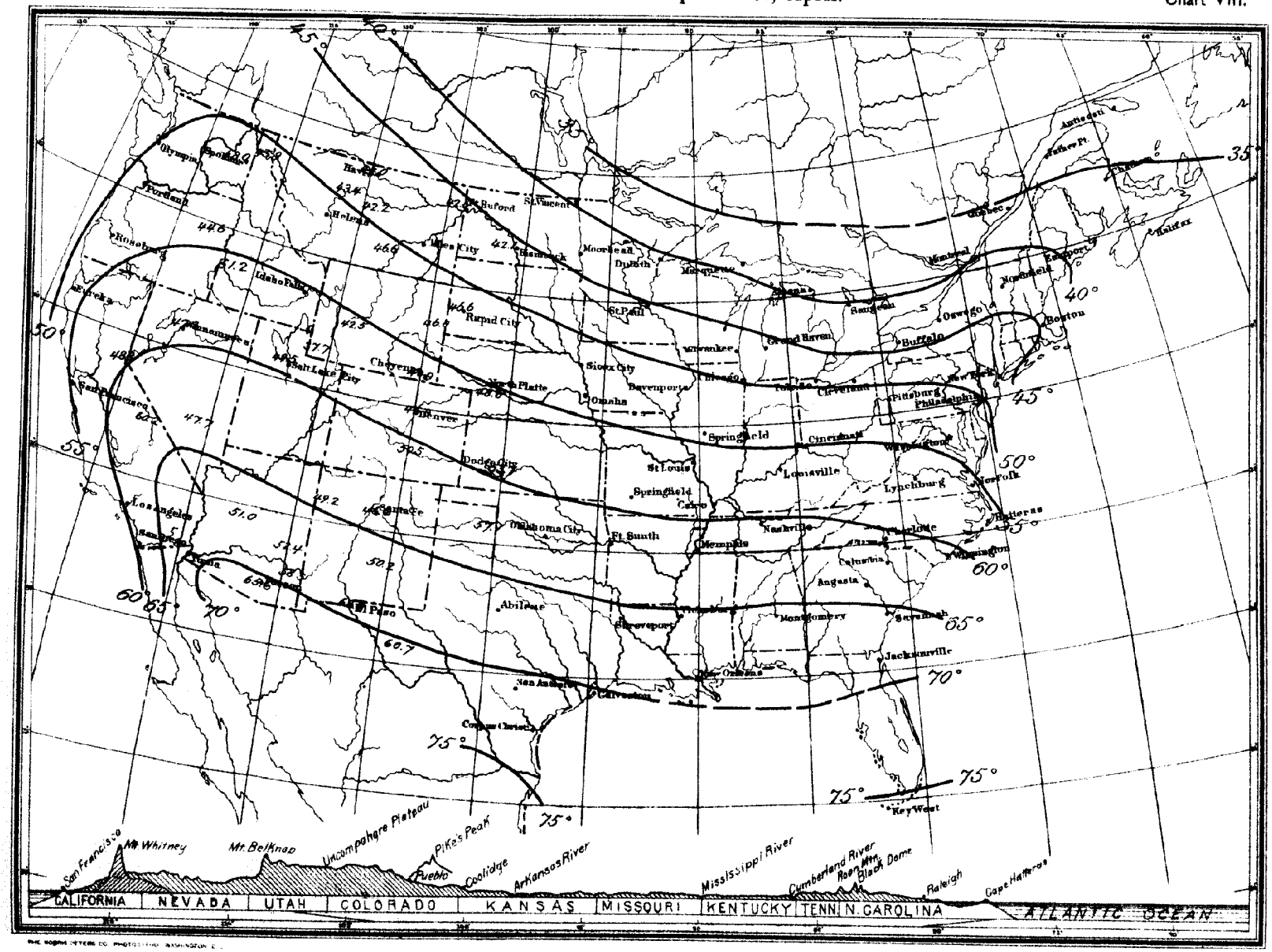
Chart VII.



THE NORRIS PETERS CO. PHOTO-LITHO. WASHINGTON D.C.

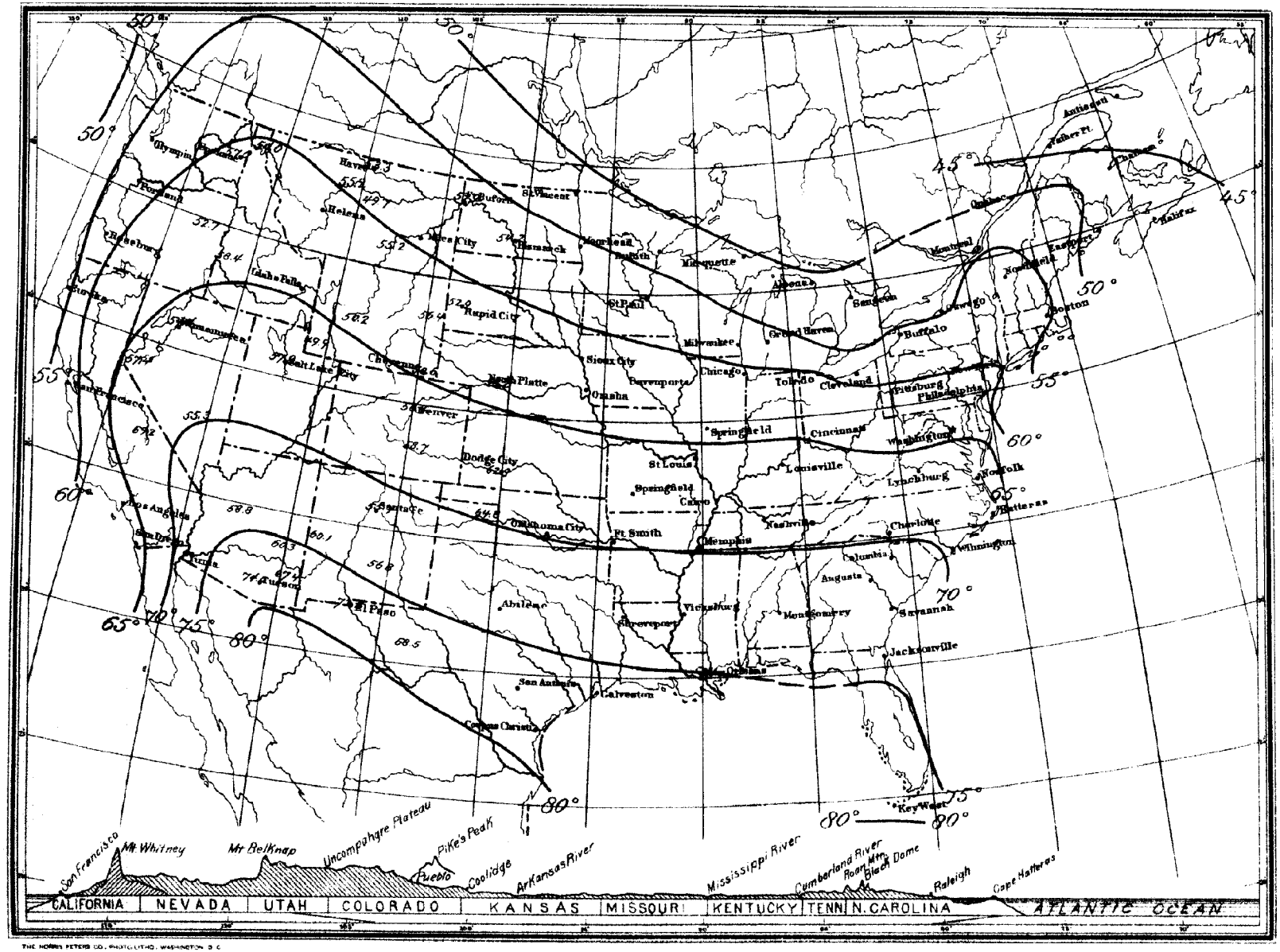
Normal Sea-Level Temperatures, April.

Chart VIII.



Normal Sea-Level Temperatures, May.

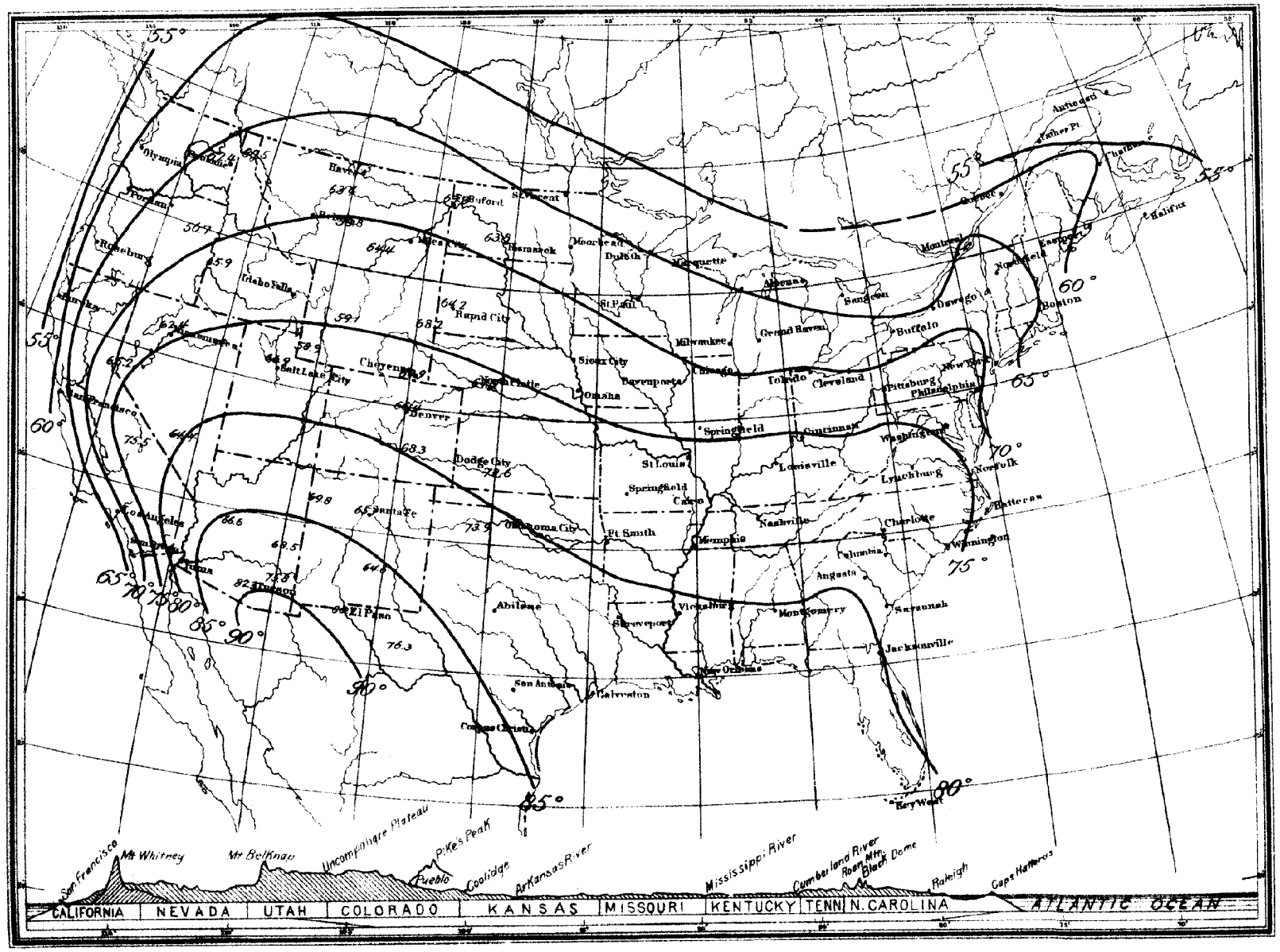
Chart IX.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

Normal Sea-Level Temperatures, June.

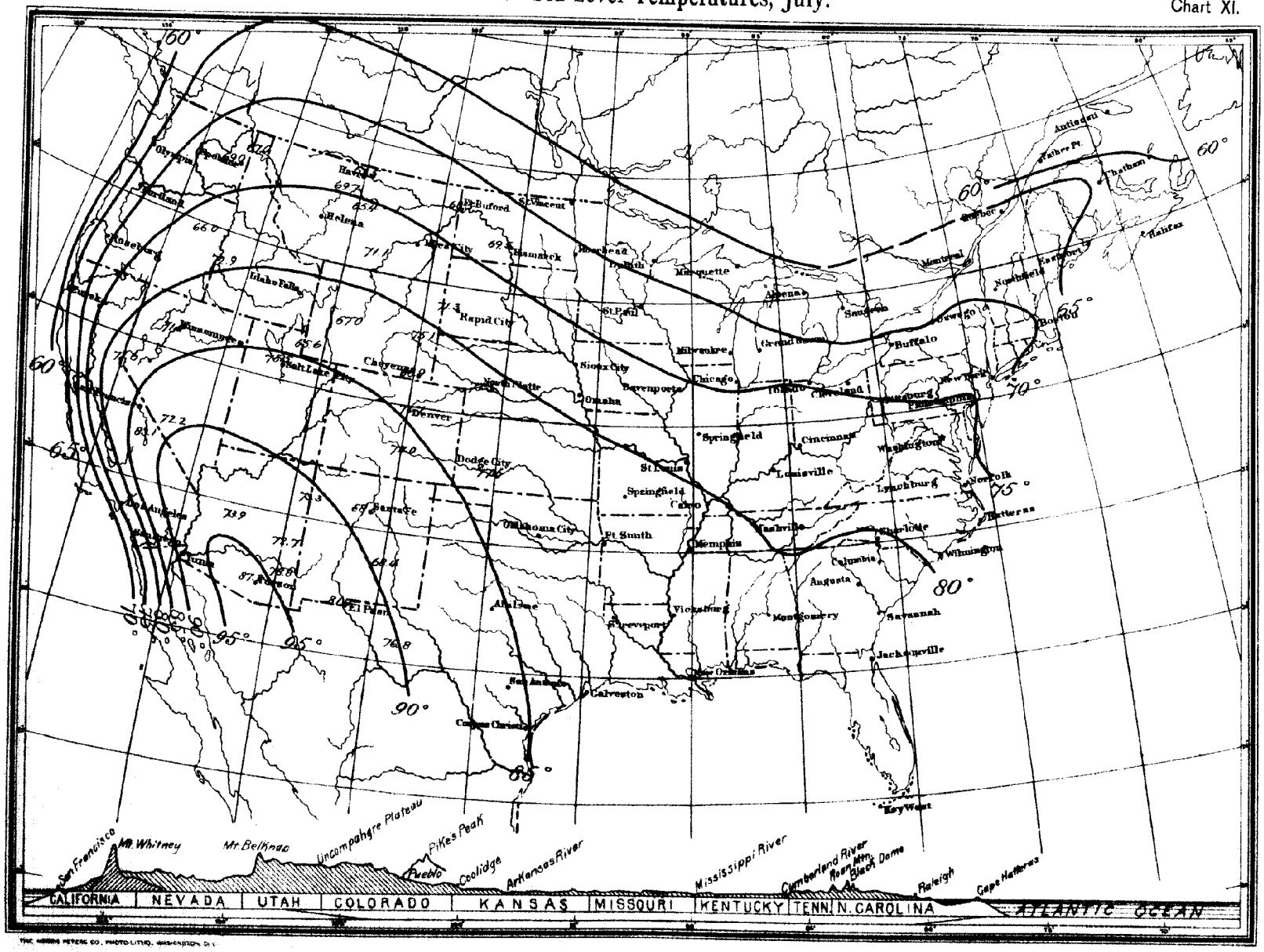
Chart X.



THE NORRIS PETERS CO. PHOTO-LITHO. WASHINGTON, D.C.

Normal Sea-Level Temperatures, July.

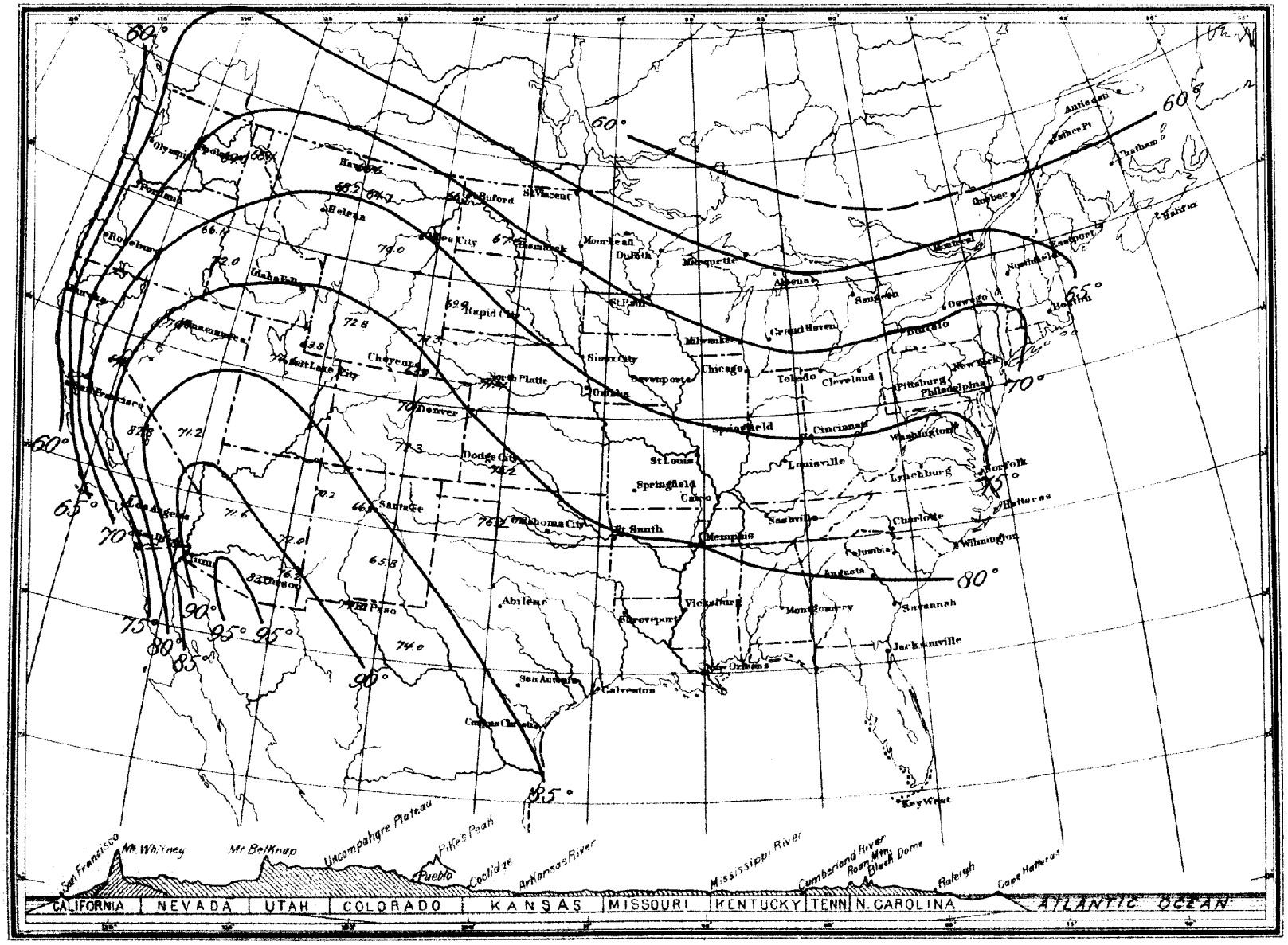
Chart XI.



THE MORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

Normal Sea-Level Temperatures, August.

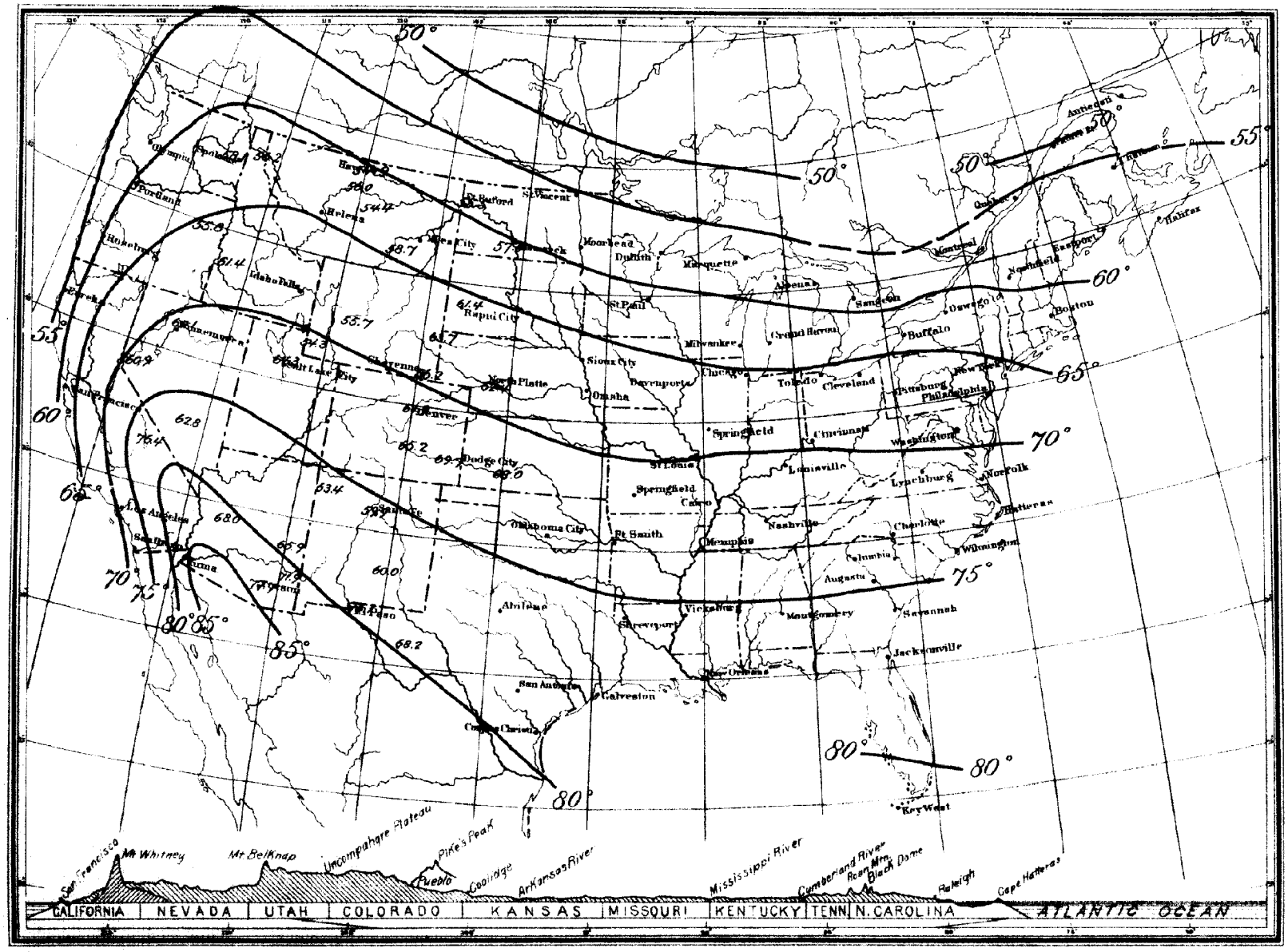
Chart XII.



THE NORRIS PETERS CO. PHOTO-LITHO. WASHINGTON, D. C.

Normal Sea-Level Temperatures, September.

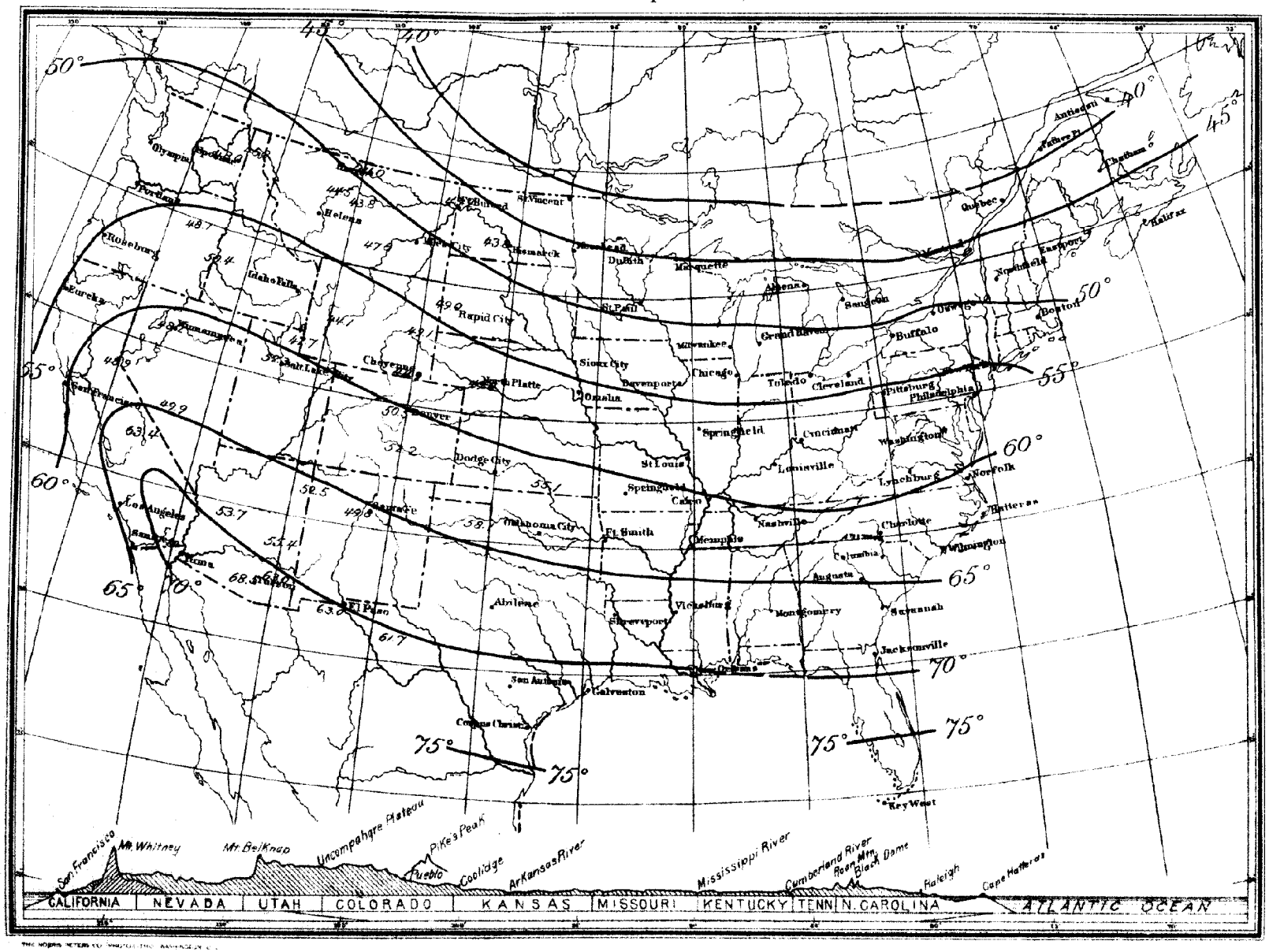
Chart XIII.



THE HOMPS PETERS CO. LITHO. WASHINGTON, D.C.

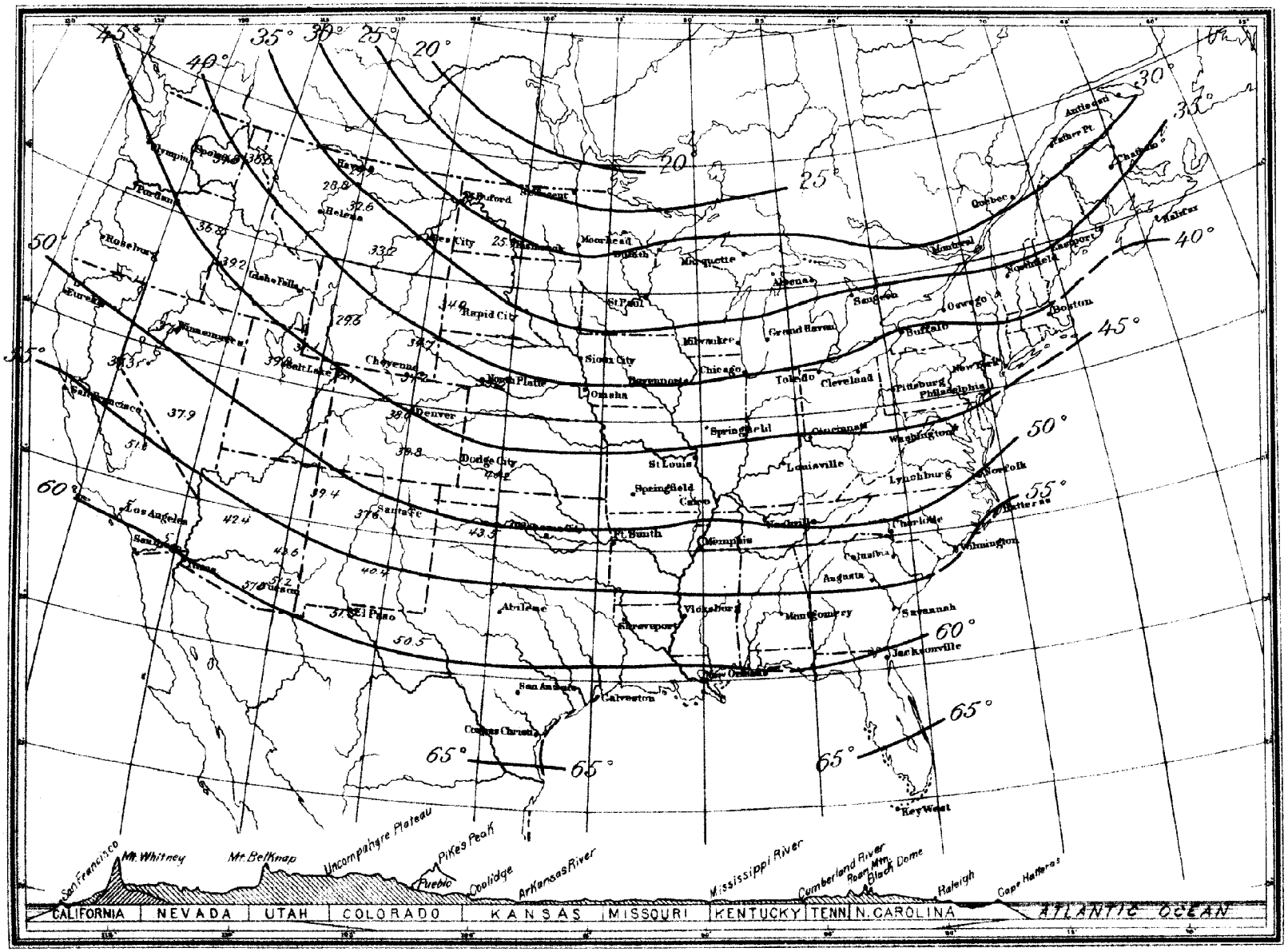
Normal Sea-Level Temperatures, October.

Chart XIV.



Normal Sea-Level Temperatures, November.

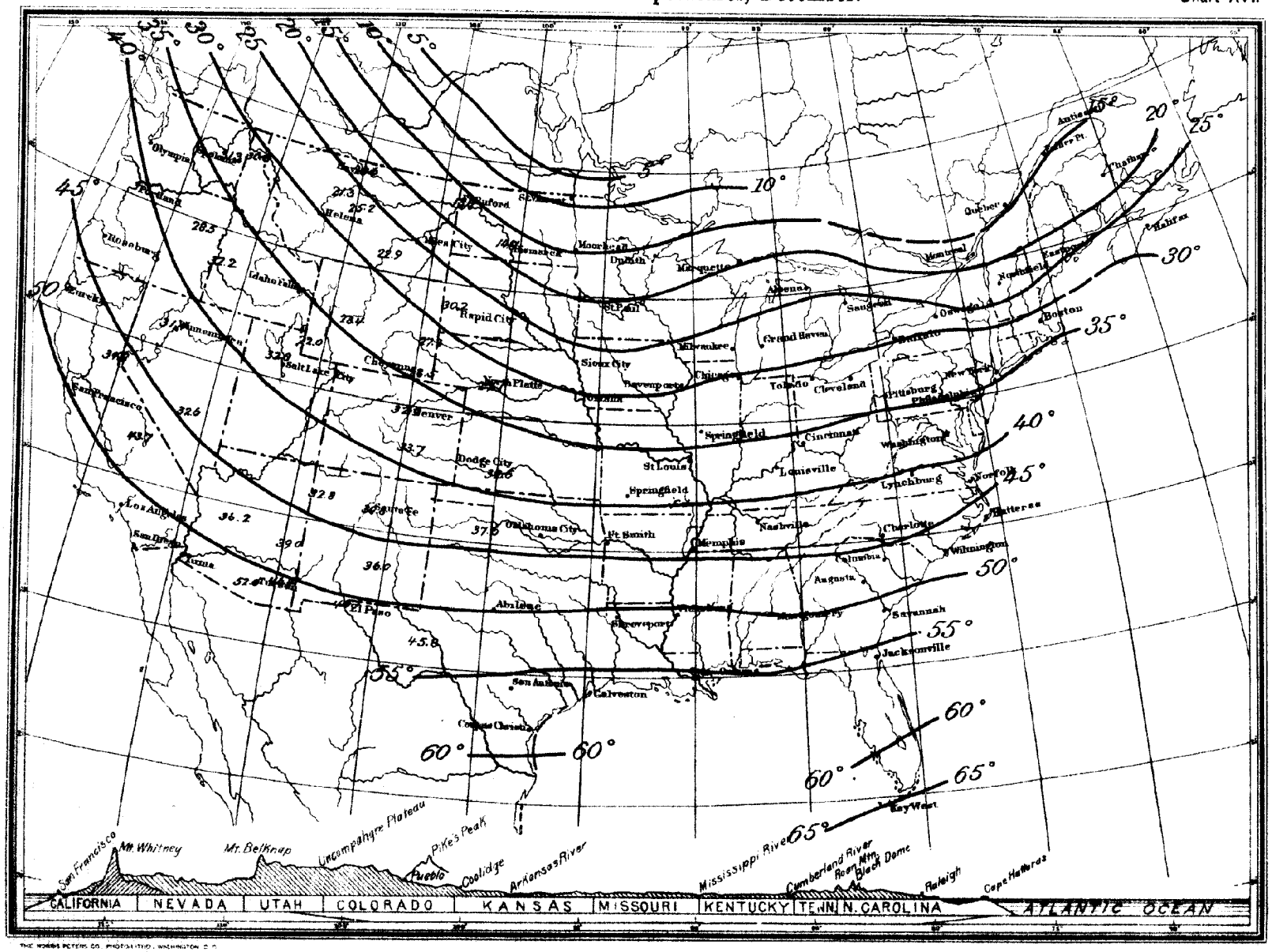
Chart XV.



THE NORRIS PETERS CO. PHOTO-LITHO. WASHINGTON D.C.

Normal Sea-Level Temperatures, December.

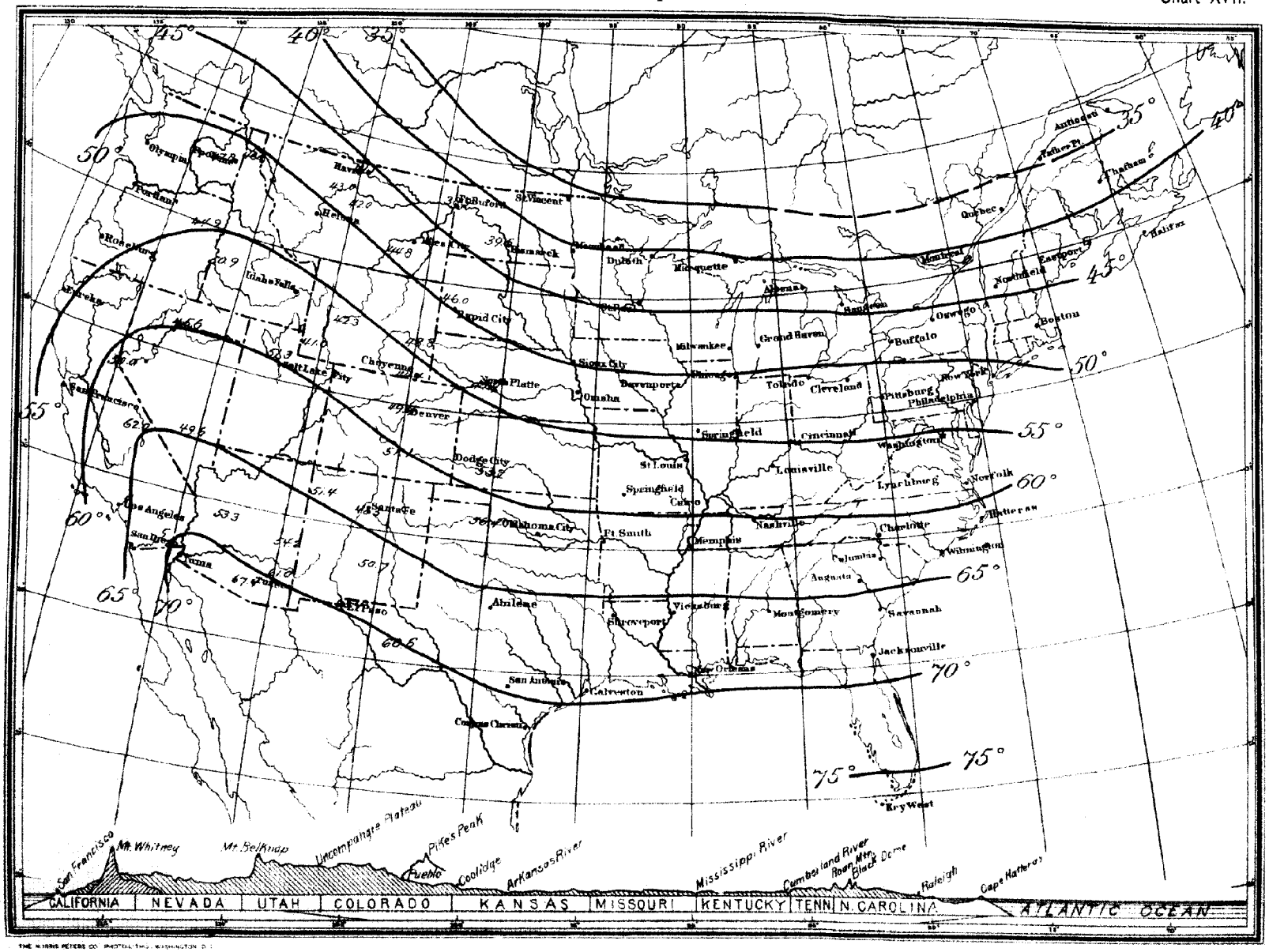
Chart XVI.



THE HOBBS PETERS CO. PHOTO-LITHO. WASHINGTON D.C.

Normal Sea-Level Temperatures, Annual.

Chart XVII.



THE NORRIS PETERS CO. PHOTO-LITHO. WASHINGTON D.C.

January.—The eastern area of high pressure extends in a northerly and northwesterly direction beyond the usual limits. Precipitation was markedly deficient over New England, the Ohio valley, and Tennessee. Temperature was also below the average in New England, the Middle and South Atlantic States, Florida, and East Gulf States.

The western area of high pressure is found over Saskatchewan and the Dakotas farther inland and to the northeast of its normal position. Both temperature and precipitation of the Pacific Coast and the Plateau region were above the average. Southerly and southwesterly winds prevailed on the Pacific Coast and over the Plateau region. The temperature of the interior valleys and the northwest was generally above the normal. The precipitation was about the average or slightly below.

July.—The geographic positions of the areas of high and low pressure for July, 1896, were about normal, but the absolute pressures were above the normal, except on the Pacific Coast. There were no marked variations in either rainfall or temperature, the former being normal, or nearly so, in the majority of geographic divisions.

The general characteristics of the month, as given in the Monthly Weather Review, are as follows:

The pressure has been high off the South Atlantic Coast, and also off the North Pacific Coast, and the interior low pressure has been about normal. Consequently the distribution of winds has also been normal, and the mean temperatures for the month have shown no large abnormality. There was a general excess of temperature on the Pacific Coast and a general deficiency in the interior of the continent. Although several stations on the north Pacific and Plateau regions reported the highest mean temperature on record, yet the greatest excess was but 4.2°. An unusual number of stations reported heavy local rains and consequent disastrous floods over very restricted areas; the greatest departures from normal precipitation at regular stations of the Weather Bureau were the excesses in Kansas, Missouri, Arkansas, Illinois, Mississippi, Ohio, Kentucky, West Virginia, Louisiana, and Alabama. An injurious drought was reported from limited portions of Arkansas, Louisiana, Mississippi, and Texas; also, in Washington and Oregon.

Normal temperatures.—Normal or average values of temperature were published in the Report of the Chief of Weather Bureau, 1891–92; inasmuch, however, as five years' additional observations are now available, it is deemed profitable to publish new normals both in tabular and graphic form.

A true normal, or average, may be defined as one that will not be materially changed, however long the observations upon which it is based may be continued. The time required to establish such a normal varies with different climatic elements and the period for which the normal is sought, whether a day, month, or year. Naturally a yearly normal can be established in less time than a monthly normal. For precipitation at least forty years of observation are required to determine a normal for the year accurate within ± 5 per cent. For temperature a shorter time is required, probably twenty-five years in continental climates and less time in coastal or marine climates. The monthly and annual averages of temperature for 140 Weather Bureau stations are given in the subjoined table. The figures represent the simple arithmetical means of the observed temperatures for the number of years given in the column, "Length of record." The observations cover the epoch 1871–1895.

Window shelters were used up to 1885, and roof shelters thereafter.

The elevation of thermometers above ground has varied between the limits shown in the columns headed "First" and "Last," respectively.

TABLE II.—NORMAL MONTHLY AND ANNUAL TEMPERATURE.

	Latitude.		Longitude.		Height. Ground above sea.	Height. Thermometer above ground. First.	Height. Thermometer above ground. Last.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.	Length of record.
	°	′	°	′	Feet.	Ft.	Ft.	°	°	°	°	°	°	°	°	°	°	°	°	°	Yrs.
Abilene	32	23	99	40	1,728	42	47	42.8	45.9	54.1	65.3	72.2	78.4	82.7	80.2	74.6	64.5	52.0	47.5	63.4	10
Albany	42	39	73	45	26	9	84	23.2	24.2	31.9	46.0	59.3	69.0	72.4	70.5	63.1	50.6	39.2	28.6	48.2	22
Alpena	45	05	83	30	590	31	61	18.1	18.0	24.0	37.1	49.0	60.3	65.3	63.5	57.2	45.2	32.8	24.8	41.3	24
Atlantic City	39	22	74	25	.....	.....	68	32.5	33.9	37.6	46.8	57.2	66.8	71.9	71.8	66.7	56.3	44.7	36.4	51.9	21
Augusta	33	28	81	54	136	18	89	46.6	50.4	55.5	64.2	72.0	78.8	81.1	79.4	74.4	63.7	53.4	47.7	63.9	25
Baker City	44	50	117	50	3,447	49	49	22.8	25.0	35.5	44.6	52.7	58.7	66.0	66.1	55.8	48.1	36.8	28.5	44.9	6
Baltimore	39	18	76	37	104	34	68	34.0	36.2	41.5	53.1	64.2	73.5	77.2	74.9	67.9	56.9	45.4	37.5	55.2	25
Bismarck	46	47	100	38	1,670	5	16	4.5	9.5	22.6	42.1	54.2	63.8	69.5	67.5	57.0	43.8	25.9	14.7	39.6	21
Block Island	41	10	71	36	24	8	39	31.1	30.8	34.8	43.4	52.4	62.0	68.4	68.0	63.6	53.6	44.9	36.2	49.1	15
Boise City	43	37	116	08	2,880	25	19	27.8	35.0	44.2	51.2	58.4	65.9	72.9	72.0	61.4	50.4	39.2	32.2	50.9	13
Boston	42	21	71	04	16	70	115	27.0	28.0	34.2	45.1	56.5	66.3	71.3	69.1	62.4	51.9	40.6	31.1	48.6	25
Brownsville	25	53	97	36	38	20	47	58.6	63.4	67.8	74.2	78.5	82.7	83.9	83.3	79.8	75.0	65.9	61.6	72.9	16
Buffalo	42	53	78	53	606	73	178	24.4	24.5	30.0	41.7	54.0	65.0	69.7	68.5	62.1	50.3	38.2	29.8	46.5	25
Cairo	37	00	89	10	317	62	87	34.7	39.4	46.8	58.9	67.1	75.4	78.9	77.0	69.9	58.7	46.2	39.2	57.7	24
Carson City	39	10	119	46	4,674	....	18	30.0	34.2	41.4	48.8	57.4	65.2	71.6	69.4	60.9	48.9	37.3	34.8	50.0	11
Charleston	32	47	79	56	10	40	60	50.0	52.8	56.7	64.6	72.4	79.1	81.8	80.5	76.0	66.7	57.6	51.5	65.8	25
Charlotte	35	13	80	51	752	35	68	41.2	45.0	49.9	59.7	68.4	75.8	78.2	76.1	71.1	60.3	49.9	43.6	59.9	17
Chattanooga	35	04	85	15	705	45	106	41.0	45.5	50.5	60.9	67.7	75.2	77.8	75.9	70.7	60.5	49.9	43.6	59.9	17
Cheyenne	41	08	104	48	6,065	19	58	25.0	27.3	32.8	40.9	50.6	60.9	66.9	65.0	56.2	44.9	34.2	28.5	44.4	24
Chicago	41	53	87	37	597	58	241	23.4	26.8	34.1	45.6	56.1	66.7	72.0	70.9	64.2	52.0	38.4	29.3	48.3	24
Chincoteague	37	55	75	23	6	30	22	32.8	36.4	39.6	48.2	58.7	68.1	73.9	73.0	69.0	59.8	47.2	38.3	53.8	14
Cincinnati	39	06	84	30	553	68	153	32.5	36.4	42.2	54.6	64.7	73.8	77.4	75.0	68.1	56.4	43.9	36.6	55.1	25
Cleveland	41	30	81	42	649	30	190	26.2	28.0	33.5	45.7	57.7	67.8	71.5	69.6	63.8	52.2	39.7	31.2	48.9	25
Columbus	39	58	83	00	764	52	87	28.4	32.1	38.1	51.2	62.0	71.3	74.9	72.3	66.1	53.7	41.2	33.3	52.1	17
Concordia	39	35	97	41	1,380	42	42	23.2	28.2	39.0	55.3	62.1	72.3	77.1	74.4	67.8	54.5	40.0	33.0	52.2	11
Corpus Christi	27	49	97	23	4	42	42	55.5	59.0	62.8	73.1	75.4	79.9	81.7	81.4	78.8	72.5	63.0	59.3	70.1	9
Davenport	41	30	90	38	578	46	71	20.0	25.3	34.9	49.7	60.7	70.9	75.0	72.8	64.7	52.1	36.8	27.8	49.2	24
Denver	39	45	105	00	5,218	37	79	28.2	32.2	38.8	46.9	56.4	66.4	71.7	70.1	61.9	50.5	38.0	32.0	49.4	24
Des Moines	41	35	93	37	815	33	84	17.5	23.1	34.7	50.5	60.4	70.1	74.5	72.0	64.1	52.2	36.4	26.8	48.5	17
Detroit	42	20	83	03	599	96	160	24.5	26.2	32.5	45.7	57.5	67.9	71.6	69.7	62.9	51.0	38.1	29.5	48.1	25
Dodge City	37	45	100	00	2,485	14	44	26.6	31.8	41.6	53.7	62.9	72.6	77.6	75.2	68.0	55.1	40.2	32.6	53.2	21
Dubuque	42	30	90	44	644	38	49	17.3	22.6	32.9	48.6	59.9	69.5	74.3	71.6	63.2	50.6	35.0	25.9	47.6	22
Duluth	46	47	92	06	685	19	95	10.4	14.5	24.0	37.9	48.0	57.8	65.9	64.7	56.2	44.9	29.4	17.8	39.3	25
Eastport	44	54	66	59	38	32	69	20.4	22.0	28.7	38.6	47.5	55.1	60.4	60.6	55.8	46.8	36.7	25.5	41.5	22
El Paso	31	47	106	30	3,709	17	10	44.5	49.4	55.8	63.8	72.3	80.2	81.9	79.0	73.1	63.0	51.5	46.1	63.4	17
Erie	42	07	80	05	660	32	92	26.9	27.5	32.4	44.1	56.7	67.0	71.0	69.5	63.6	52.2	41.0	32.4	48.7	22
Fort Apache	33	48	109	57	5,000	6	5	35.3	40.2	45.8	52.4	60.3	68.5	72.7	72.0	65.9	55.4	43.6	39.0	54.2	12
Fort Benton	47	50	110	40	2,674	50	7	12.4	21.0	31.0	43.4	55.2	63.4	69.7	68.2	56.0	44.5	28.8	21.3	43.0	11
Fort Bridger	41	28	110	30	6,639	16	16	18.7	22.4	27.8	37.7	49.9	58.9	65.6	63.8	54.3	42.7	31.1	22.0	41.0	18
Fort Canby	46	16	124	04	177	7	10	40.9	41.7	45.4	48.0	52.6	55.5	58.5	59.1	57.0	53.4	48.2	43.8	50.3	12
Fort Concho	31	25	100	24	1,750	6	6	42.9	49.0	57.6	64.8	73.7	80.8	83.7	81.7	74.8	65.7	52.3	45.8	64.4	16
Fort Custer	45	42	107	34	2,725	4	17	14.5	19.9	33.6	46.6	55.2	64.4	71.1	70.0	58.7	47.6	33.2	22.9	44.8	12
Fort Davis	30	38	103	56	4,923	3	15	43.2	48.4	53.5	60.7	68.5	76.3	76.8	74.0	68.2	61.7	50.5	45.8	60.6	9
Fort Elliott	35	30	100	21	2,673	6	7	32.4	38.2	47.0	57.1	64.8	73.9	78.3	76.2	69.7	58.1	43.5	37.6	56.4	11
Fort Grant	32	39	109	57	4,776	6	15	43.4	46.6	52.4	58.8	67.4	75.8	78.8	76.2	71.9	63.0	51.2	46.4	61.0	13
Fort Laramie	42	14	104	29	.....	.....	.....	26.0	30.6	36.6	46.0	56.4	68.2	75.1	72.5	63.7	49.1	34.7	27.3	48.8	26
Fort Maginnis	47	12	109	10	4,365	7	20	15.5	19.6	31.6	42.2	49.7	58.8	65.4	64.7	54.4	43.8	32.6	25.2	42.0	8
Fort Sherman	47	45	116	46	.....	.....	.....	25.2	27.0	37.7	45.9	54.0	60.5	67.0	66.4	56.2	46.8	36.6	30.8	46.3	12
Fort Smith	35	22	94	24	438	18	63	36.1	41.5	50.0	62.2	68.2	76.1	80.0	77.7	72.3	61.1	49.3	42.8	59.8	14
Fort Stanton	33	30	105	26	6,146	21	17	32.6	39.2	42.7	50.2	56.8	64.6	68.4	65.8	60.0	51.8	40.4	36.0	50.7	8
Fort Stockton	30	53	102	53	.....	6	6	43.0	48.8	56.6	63.9	72.2	78.8	80.6	78.0	71.9	63.4	50.6	45.5	62.8	9
Fort Sully	44	39	100	39	1,600	18	16	10.2	15.4	27.8	46.9	58.2	69.2	75.6	72.4	62.6	49.1	31.2	20.4	44.9	15
Fort Wingate	35	28	108	32	.....	.....	.....	29.8	34.4	42.1	49.2	60.1	69.8	73.3	70.2	63.4	52.5	39.4	32.8	51.4	26
Fresno	36	43	119	49	293	36	67	44.5	50.2	54.5	60.8	68.0	74.0	81.5	81.7	74.5	64.9	55.4	46.3	63.0	8
Galveston	29	18	94	50	5	37	85	52.7	57.0	62.5	69.6	75.8	81.6	83.9	83.2	79.5	72.3	62.4	57.1	69.8	25
Grand Haven	43	05	86	13	599	16	55	24.2	25.0	30.6	43.6	54.4	64.4	68.8	67.0	60.9	49.6	37.1	29.6	46.3	25
Green Bay	44	31	88	00	586	50	49	14.2	16.2	26.7	43.0	53.9	66.7	70.0	66.7	60.5	46.9	32.1	23.8	43.4	9
Hatteras	35	15	75	40	8	8	17	45.7	46.6	50.1	57.2	66.4	74.0	77.9	77.4	73.7	64.5	55.6	48.2	61.4	21
Harrisburg	40	16	76	52	340	94	94	30.3	32.5	36.2	50.1	60.2	70.5	72.9	72.1	64.4	52.5	42.4	34.4	51.5	8
Havre	48	34	109	40	2,477	5	15	9.7	13.2	29.0	44.0	53.3	61.3	67.5	65.6	54.9	44.0	29.9	20.6	41.1	15
Huron	44	21	98	14	1,290	18	63	7.0	12.0	27.6	46.4	55.1	66.7	70.9	68.4	60.1	48.5	29.5	19.2	42.5	14
Indianapolis	39	46	86	10	712	46	154	28.3	32.3	39.5	52.9	63.2	72.5	76.2	73.6	66.0	54.4	40.9	33.1	52.7	25
Jacksonville	30	20	81	39	8	20	69	55.2	58.4	62.0	68.9	74.9	80.1	82.1	81.1	77.6	69.7	61.4	56.0	69.0	24
Jupiter	26	57	80	07	1	13	13	65.7	67.1	67.8	72.0	75.7	79.0	80.8	81.0	79.6	75.4	71.8	66.7	73.6	8
Kansas City	39	05	94	37	896	86	78	25.4	31.0	40.5	54.4	64.2	73.4	77.5	75.7	67.5	55.7	40.7	31.9	53.2	25
Keeler	36	35	117	50	3,619	4	7	39.2	46.7	52.4	60.2	69.2	75.5	83.1	82.8	76.4	63.4	51.1	43.7	62.0	7
Keokuk	40	22	91	26	579	47	64	23.2	28.3	37.6	52.0	62.6	72.5	76.9	74.5	66.4	54.1	38.8	29.8	51.4	24
Key West	24	34	81	49	6	42	42	69.7	71.4	72.7	76.1	79.4	82.5	83.9	83.9	82.5	78.5	74.2	70.0	71.1	24
Knoxville	35	56	83	58	937	....	80	37.7	42.3	47.6	58.2	66.2	73.6	76.4	74.8	69.3	57.3	46.6	39.9	57.2	25
La Crosse	43	49	91	15	679	66	70	14.7	20.1	30.8	47.4	59.4	68.9	72.9	70.1	61.6	49.5	33.4	23.6	46.0	23
Lander	42	50	108	45	5,373	16	28	16.8	21.8	30.9	42.5	50.2	59.1	67.0	72.8	55.7	44.1	29.6	23.4	42.3	9
Little Rock	34	45	92	06	284	26	71	40.8	45.4	52.2	63.2	69.3	77.0	80.3	78.2	72.9	62.2	50.8	45.0	61.5	16
Los Angeles	34	03	118	15	278	....	74	53.1	54.4	56.3	58.9	62.1	65.7	69.3	70.4	68.5	63.7	59.2	55.4	61.4	17
Louisville	38	15	85	45	455	56	114	34.1	38.2	44.4	56.4	66.1	75.1	78.4	76.3	69.4	57.7	45.3	38.4	56.7	24
Lynchburg	37	25	79	09	627	43	83	36.8	40.0	45.2	55.9	66.0	74.2	77.5	75.3	69.0	57.1	46.3	39.3	56.9	24
Marquette	46	34	87	24	641	33	67	16.0	17.1	23.2	37.2	49.0	59.0	64.9	63.6	56.8	45.1	31.4	22.8	40.5	24
Memphis	35	09	90	03	472	40	140	39.9	44.8	51.6	62.1	70.2	78.1	80.7	78.7	72.1	61.6	49.9	43.6	61.1	24
Milwaukee	43	02	87	54	593	109	106	19.4	22.7	30.5	42.7	52.9	63.2	69.2	68.3	61.2	49.2	35.2	25.6	45.0	25
Mobile	30	41	88	02	14	31	88	50.5	54.8	58.9	66.9	73.6	79.7	81.2	80.3	76.8	67.4	57.9	52.4	66.7	25
Montgomery	32	23	86	18	180	33	100	48.3	52.7	57.0	65.4	72.8	79.4	81.5	79.8	75.6	65.2	55.2	49.6	65.2	23
Moorhead	46	52	96	44	903	23	54	−0.9	4.5	20.2	41.3	53.2	64.8	67.6	65.2	56.5	43.1	24.2	11.9	37.6	15
Nantucket	41	17	70	06	10	8	43	31.4	31.0	34.9	43.1	52.5	61.2	67.2	67.7	62.7	52.6	44.7	36.4	48.8	9
Nashville	36	10	86	47	477	34	128	38.2	42.7	48.7	59.8	68.3	76.6	79.3	77.5	70.7	59.6	48.0	41.7	59.3	25

TABLE II.—NORMAL MONTHLY AND ANNUAL TEMPERATURE—Continued.

	Latitude.		Longitude.		Height. Ground above sea.	Height. Thermometer above ground. First.	Height. Thermometer above ground. Last.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.	Length of record.
	°	′	°	′	Feet.	Ft.	Ft.	°	°	°	°	°	°	°	°	°	°	°	°	°	Yrs.
New Haven	41	18	72	56	24	92	118	27.5	28.8	34.6	46.1	57.6	67.3	71.8	70.0	63.5	52.4	41.1	32.2	49.4	23
New Orleans	29	58	90	04	9	29	112	53.8	58.1	62.0	69.0	74.6	80.3	82.2	81.5	78.3	69.8	60.7	55.5	68.8	25
New York City	40	43	74	00	68	130	298	30.5	31.5	36.9	48.1	59.5	69.0	73.5	72.3	65.9	55.0	43.4	34.4	51.7	25
Norfolk	36	51	76	17	11	43	88	40.4	42.8	46.9	56.2	66.4	75.1	78.5	76.6	71.1	60.6	50.3	42.8	59.0	25
Northfield	44	10	72	41	858	16	15	15.5	16.0	25.0	39.3	53.7	63.6	65.1	62.9	56.0	43.3	32.9	21.4	41.2	9
North Platte	41	08	100	45	2,809	27	43	20.0	25.3	35.1	48.6	58.2	67.9	73.5	71.4	62.4	49.8	35.2	27.1	47.9	21
Omaha	41	16	95	56	1,035	26	92	19.2	25.0	35.5	51.0	61.7	71.5	76.2	73.7	64.8	52.9	36.6	26.7	49.6	25
Oswego	43	29	76	35	268	35	76	24.3	24.6	30.4	42.3	54.0	64.0	69.0	68.2	61.7	50.0	38.5	29.4	46.4	25
Palestine	31	45	95	40	492	34	54	45.8	51.0	57.6	66.7	71.3	78.2	81.5	80.4	75.7	66.5	56.2	51.4	65.2	13
Parkersburg	39	16	81	36	616	....	77	32.7	34.5	40.5	53.2	61.5	72.7	73.5	72.1	66.8	52.3	42.8	37.0	53.3	7
Pensacola	30	25	87	13	12	20	78	52.5	56.8	59.5	67.7	73.5	79.4	80.8	80.4	77.5	69.2	59.2	54.5	67.6	15
Philadelphia	39	57	75	09	42	102	168	32.0	33.5	39.1	50.5	62.0	71.7	75.7	73.8	67.1	55.8	43.9	35.5	53.4	25
Phœnix	33	28	112	00	1,055	4	47	49.0	53.9	61.0	67.2	74.6	82.7	89.5	88.0	80.8	69.3	57.6	53.0	68.9	13
Pioche	37	56	114	26	6,217	5	5	28.6	32.4	40.2	47.7	55.3	64.4	72.2	71.2	62.8	49.9	37.9	32.6	49.6	11
Pittsburg	40	32	80	02	756	32	116	30.6	33.4	38.7	51.2	62.2	71.6	75.0	72.8	66.7	54.7	42.8	35.0	52.9	25
Port Angeles	48	07	123	06	11	5	47	35.5	37.8	41.6	44.6	50.4	53.7	56.3	56.7	52.8	47.6	42.3	39.4	46.6	10
Port Huron	43	00	82	26	603	80	70	21.8	23.0	29.1	41.7	53.2	64.1	68.5	67.0	61.2	48.9	36.4	27.8	45.2	21
Portland, Me	43	39	70	15	47	45	81	22.5	24.6	32.0	43.0	53.6	63.3	68.0	66.8	59.7	49.1	38.0	27.4	45.7	25
Portland, Oreg	45	32	122	43	43	42	203	38.4	41.2	47.2	51.6	57.3	61.6	66.3	65.9	60.7	53.4	45.6	41.3	52.5	24
Prescott	34	33	112	28	5,383	5	7	33.8	38.6	45.8	51.0	58.8	66.6	73.9	71.6	65.0	53.7	42.4	38.2	53.3	13
Pueblo	38	18	104	36	4,675	11	74	28.7	30.1	40.4	50.5	58.7	68.3	74.0	72.3	65.2	52.2	38.8	33.7	51.1	7
Raleigh	33	45	78	37	342	8	93	40.8	43.9	48.2	58.8	67.5	75.7	77.1	75.7	70.5	58.0	49.6	43.9	59.1	9
Rapid City	44	04	103	21	3,231	54	46	20.2	20.6	31.2	46.6	52.9	64.2	71.3	69.9	61.4	49.0	34.9	30.2	46.0	8
Red Bluff	40	10	122	15	311	32	54	44.9	49.0	54.5	59.3	67.0	74.6	81.8	81.1	73.8	63.5	53.9	46.7	62.5	18
Rio Grande	26	23	98	48	167	4	10	57.8	63.8	69.2	77.0	81.0	85.4	87.4	86.2	81.6	74.9	64.9	61.2	74.2	12
Rochester	43	08	77	42	503	60	81	23.9	24.4	30.3	43.5	56.3	66.4	70.4	68.4	62.0	49.6	37.4	28.6	46.8	25
Roseburg	43	13	123	20	498	20	56	40.3	42.1	47.7	51.2	56.9	61.0	66.3	66.2	60.9	52.7	45.2	42.0	52.7	18
Sacramento	38	35	121	20	35	46	106	45.6	49.8	54.7	58.2	63.5	68.6	72.6	72.7	69.5	61.8	53.5	47.1	59.8	18
St. Louis	38	38	90	12	469	26	110	30.5	35.1	43.1	56.2	65.8	75.2	78.8	76.8	69.4	57.5	43.6	35.6	55.6	25
St. Paul	44	58	93	03	759	108	114	10.6	15.8	27.5	45.2	57.5	67.2	71.5	69.1	59.8	47.1	29.9	18.8	43.3	25
Salt Lake City	40	46	111	54	4,282	30	83	27.9	32.9	41.6	49.5	57.8	66.9	75.5	74.6	64.3	52.3	39.8	32.8	51.3	21
San Antonio	29	27	98	28	667	17	95	51.5	55.8	61.9	70.1	74.9	80.7	83.3	82.2	77.5	69.7	59.0	54.9	68.5	16
San Diego	32	43	117	10	36	20	59	53.6	54.8	56.0	58.3	60.4	64.1	67.1	68.9	67.0	63.2	58.6	55.8	60.7	21
Sandusky	41	25	82	40	596	54	62	26.5	28.9	34.7	47.0	58.5	69.0	73.1	71.0	65.1	53.2	40.4	32.5	50.0	18
San Francisco	37	48	122	26	26	48	161	50.1	51.7	53.6	54.6	56.6	58.4	58.3	58.7	60.4	59.3	56.3	51.4	55.8	24
Santa Fe	35	41	105	57	6,966	18	47	27.9	32.0	39.5	46.6	55.7	65.1	68.5	66.3	59.9	49.8	37.6	30.8	48.3	22
Sault Ste. Marie	46	28	84	22	605	56	58	14.3	12.5	21.9	37.7	47.8	60.2	61.8	60.8	55.5	42.7	30.3	22.6	39.0	7
Savannah	32	05	81	05	56	40	63	51.0	44.3	58.5	66.1	72.9	79.3	81.9	80.3	75.8	66.4	57.8	52.4	66.4	25
Shreveport	32	30	93	40	200	19	77	45.9	50.8	57.6	66.4	73.1	79.9	82.5	81.3	75.5	65.3	54.6	49.5	56.2	24
Sioux City	42	29	96	24	1,116	89	96	16.3	19.0	31.6	50.6	58.4	70.3	74.3	71.6	65.2	57.0	34.3	27.8	47.5	6
Spokane	47	40	117	25	1,895	22	99	25.4	28.5	39.7	48.0	57.0	62.4	69.0	69.0	58.1	48.0	37.8	31.3	47.8	14
Springfield, Ill	39	48	89	39	637	46	82	25.5	30.3	39.2	53.4	62.4	72.2	76.0	73.4	66.4	55.0	40.9	32.8	52.3	17
Springfield, Mo	37	12	93	18	1,299	41	100	32.3	34.7	43.5	57.5	63.2	72.4	75.7	74.0	67.7	56.0	43.5	38.6	54.9	8
Tatoosh Island	48	23	124	41	82	5	7	40.6	40.8	44.3	46.1	50.0	53.5	55.5	55.8	53.8	50.4	46.4	43.3	48.4	10
Toledo	41	40	83	34	603	81	122	26.1	28.2	34.6	47.5	59.4	69.8	73.4	70.8	63.9	52.1	39.2	30.7	49.6	25
Tucson	32	14	110	53	2,374	26	11	49.4	53.2	59.5	65.6	74.0	82.3	87.2	83.5	77.7	68.5	57.0	52.0	67.4	8
Valentine	42	50	100	32	2,579	51	37	18.9	21.5	31.2	47.2	55.8	67.2	73.3	70.3	61.6	49.2	34.3	27.2	46.3	9
Vicksburg	32	22	90	53	220	27	65	47.3	52.6	58.0	65.8	72.6	79.2	81.3	80.1	75.3	65.3	55.4	50.6	65.3	24
Walla Walla	46	02	118	20	960	66	65	30.5	35.4	45.5	53.3	60.9	65.6	74.0	74.2	63.9	54.0	43.0	37.7	53.2	10
Washington	38	54	77	03	80	48	59	33.2	35.8	41.3	53.0	63.9	73.2	76.8	74.6	67.8	56.2	44.5	36.2	54.7	25
Wichita	37	41	97	20	1,294	78	78	30.6	31.8	43.5	57.8	64.2	73.9	78.4	76.5	70.0	57.6	42.8	37.9	55.4	7
Williston	48	09	103	35	1,872	15	15	3.9	7.7	23.5	42.6	53.2	63.3	68.5	66.5	55.5	43.2	26.1	13.0	38.9	17
Wilmington	34	14	77	57	42	26	82	46.9	49.8	53.9	61.5	69.7	76.7	79.7	78.2	73.6	63.5	54.6	48.3	63.0	25
Winnemucca	40	58	117	43	4,319	40	59	27.0	32.5	40.7	47.3	54.4	62.4	71.4	70.6	60.1	48.2	37.1	31.1	45.6	17
Woods Hole	41	33	70	40	4	8	51	30.3	29.7	35.1	43.2	53.5	62.4	68.2	68.2	63.0	53.4	43.3	35.1	48.8	18
Yankton	42	54	97	28	1,204	6	51	14.2	19.2	30.0	46.7	58.5	68.6	73.6	71.8	62.1	49.7	32.8	22.5	45.8	21
Yuma	32	45	114	36	135	5	16	54.1	58.8	64.5	69.8	77.2	84.9	91.5	90.7	84.4	73.0	61.9	56.0	72.2	21

If we wish to study the general effect of differences of latitude and longitude on temperature, it is necessary to apply a correction for altitude to the observed means, since temperature decreases with increase of elevation. Charts V to XVII, inclusive, show the approximate sea-level temperatures of the United States and Canada.

The method adopted in the reduction was suggested by Mr. Park Morrill, forecast official, who describes it as follows:[1]

Observed temperatures may be reduced to sea-level temperatures (whereby is meant such temperature as would exist if the present terrestrial surface were replaced by a sea-level plain, while the general features of the atmospheric circulation remained unchanged) by applying to them increments for altitude of the magnitude noted above and further modifying them by local corrections determined as follows: The normal temperatures increased proportionately to the various altitudes of stations are to be charted for a considerable extent of country and isotherms

[1] Annual Meteorological Summary 1895, p. 493.

drawn. These, while forming a remarkably uniform system of lines as compared with those based on the original observed temperatures, are more or less wavy and irregular as a result of local peculiarities of temperature. Through these wavy lines smooth lines are drawn with a free hand, and the isothermal chart thus formed is believed to closely approximate the desired chart of sea-level temperatures as above defined.

The values of the corrections applied to the observed means were as follows:

		°
January, February, and December	per 1,000 feet	1.5
March, April, May, September, October, and November	do	2.0
June, July, and August	do	2.5
The year	do	2.0

The *observed* means have been entered on the charts over the plateau and mountain region of the West where the reduction to sea is rather vague and uncertain. The sea-level temperatures may be obtained by applying a correction for the different months as given above.

It may be argued that sea-level temperatures, no matter how obtained, have no real existence in nature, and are therefore useless for the purpose of generalization. On the other hand, lines of equal mean temperature drawn from a heterogeneous mass of surface observations in which valley, hill, plain, and mountain are equally represented, have but little significance beyond aiding the eye in quickly perceiving the points having the same mean temperature. The sea-level temperatures have the merit of being consistent among themselves, and consequently can be used as a datum point whence the surface temperature at any place may be obtained if the elevation is known. The following example illustrates the practical use that may be made of the charts:

Required the mean temperature of July at a point in Ashe County, N. C., 3,000 feet above sea level. The sea-level temperature for Ashe County, interpolating from the nearest isothermal line (80°), is about 79°. A correction of 2.5° per 1,000 feet was applied to July mean temperatures in North Carolina to reduce them to sea level; hence to reduce them back to the originals we have, in the case of a station 3,000 feet above sea level: $2.5° \times 3 = 7.5°$, and $79° - 7.5° = 71.5°$, the actual mean temperature desired.

Temperature, 1896.—The temperature distribution throughout the year, as shown by the monthly departures from the normal of each geographic district, is given in the following table:

TABLE III.—TEMPERATURE DEPARTURES, 1896, BY GEOGRAPHIC DISTRICTS.

[+ above, — below, the normal.]

Districts.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Average for year.
	°	°	°	°	°	°	°	°	°	°	°	°	°
New England	—2.0	— 0.3	—2.6	+1.2	+2.6	—0.1	+0.6	+1.1	—0.6	+1.6	+ 3.4	—2.8	—0.09
Middle Atlantic States	—1.6	— 1.2	—3.0	+3.8	+5.1	—0.8	+0.3	+2.2	—0.1	—3.0	+ 4.2	—2.2	+0.31
South Atlantic States	—2.5	— 1.8	—1.3	+3.4	+4.6	+0.1	0.0	+2.1	+1.3	—1.7	+ 4.5	—3.1	+0.47
Florida Peninsula	—3.5	— 3.6	—1.7	—0.9	+0.4	—0.4	—2.0	—0.3	+0.3	—0.5	+ 3.8	—1.4	—0.77
East Gulf States	—1.6	— 3.2	—2.1	+2.1	+4.0	—0.4	+0.3	+2.6	+1.2	—0.7	+ 3.4	—1.3	+0.36
West Gulf States	+2.5	+ 0.1	—2.0	+2.2	+3.7	+1.3	+0.8	+2.7	+1.7	—1.4	+ 1.4	+1.5	+1.21
Ohio Valley and Tennessee	+2.3	— 1.6	—4.8	+6.9	+6.8	—0.1	—0.5	+2.2	—0.2	—2.5	+ 2.7	+1.1	+1.02
Lower Lake Region	+0.5	— 0.8	—4.4	+6.7	+7.1	+0.8	—0.4	+1.8	—1.8	—3.5	+ 2.3	—0.8	+0.62
Upper Lake Region	+4.2	+ 2.4	—2.1	+5.3	+8.2	+2.5	0.0	+2.6	—2.4	—2.3	— 1.9	+2.1	+1.55
North Dakota	+4.7	+ 7.4	—6.1	0.0	+2.7	+1.0	—1.6	—0.7	—2.4	—1.9	—19.6	+5.0	—0.96
Upper Mississippi Valley	+6.4	+ 3.5	—3.0	+5.8	+7.4	+0.8	—1.0	+2.0	—2.9	—2.0	— 4.6	+4.5	+1.41
Missouri Valley	+7.4	— 6.9	—4.3	+4.6	+6.0	—0.3	—1.0	+2.1	—2.5	—2.4	— 8.5	+6.1	+1.18
Northern Slope	+7.0	+ 9.6	—5.5	—2.2	—0.7	+1.8	—0.2	—0.4	—3.2	+0.1	—13.2	+9.2	+0.20
Middle Slope	+9.8	— 4.8	—3.3	+5.2	+4.4	+1.3	—0.3	+3.1	—0.8	—1.4	— 4.2	+6.2	+2.07
Southern Plateau	+4.6	+ 0.4	+1.0	—2.2	+0.6	+3.3	—2.1	—0.1	+0.1	+0.6	+ 1.6	+1.9	+0.88
Middle Plateau	+8.1	+ 4.0	—1.2	—6.0	—5.8	+3.0	+0.9	—1.2	—1.0	+2.4	— 1.6	+3.4	+0.42
Northern Plateau	+9.4	+11.6	0.0	—3.6	—6.6	+1.8	+3.3	0.0	—0.6	+1.4	— 5.9	+4.2	+1.25
North Pacific Coast Region	+3.1	+ 3.9	+2.3	—3.8	—3.8	—0.8	+2.3	+1.2	—0.7	+0.3	— 6.2	+2.2	—0.15
Middle Pacific Coast Region	+3.4	+ 3.3	0.0	—4.5	—3.1	+0.1	+2.2	+0.2	—1.0	+0.6	— 2.2	+1.6	+0.05
South Pacific Coast Region	+4.1	+ 3.7	+1.2	—4.5	—1.4	+1.7	+1.2	—1.0	—2.1	+0.9	— 0.6	+2.8	+0.50

The statistics above presented show that the year, as a whole, was warmer than usual. The noteworthy features were (*a*) the midsummer heat of April and May, (*b*) the heated term of August, and (*c*) the marked reversal of temperature conditions in the Northwest during November and December.

The Climate and Crop Bulletin of April 21, 1896, referring to the abnormal temperatures of the preceding week, remarks as follows:

The week ending 8 p. m., April 20, 1896, is probably the most noteworthy with respect to temperature that has occurred since the Government Weather Service was established, both the extremes and averages of heat and

cold—the heat over the districts east of the Rocky Mountains and cold in the Rocky Mountain, Plateau, and Pacific Coast districts—being decidedly abnormal. The absolute range of temperature for the week was 90°; and the lowest 6° above zero, occurring at Havre, Mont., on the 17th, and the highest, 96°, occurring at Norfolk, Va., on the following day. The average daily departures for the seven days ranged from 22° below normal at Havre, Mont., to 25° above normal at Philadelphia, Pa., giving an average daily difference of 47° between the two stations named.

The line marking the region of normal temperature extends from near El Paso, Tex., slightly east of north, to northern Minnesota. To the eastward of this line the deparatnres from normal increased rapidly, being most marked over the northern districts, the region of maximum excess extending from the Lower Lakes to the Middle Atlantic Coast, where the average daily departures generally range from 18° to 25°, while the excess over the central and southern districts, though less marked, is quite decided, and ranges from about 3° per day along the Gulf Coast to from 15° to 18° in the Ohio and central Mississippi valleys.

Near the Pacific Coast the temperature deficiencies generally range from 4° to 8° per day, but eastward, over the interior portions of Washington, Oregon, and California, and throughout the central and northern Plateau districts they amount to from 15° to 22°.

In the lower Missouri Valley and from the central Mississippi Valley eastward to the Middle Atlantic and southern New England coasts the maximum temperature from the 15th to the 18th were the highest ever observed during the second decade of April. This same period was characterized by unusual cold in the Rocky Mountain and Pacific Coast districts, the minimum temperatures falling to or below any former record for the second decade of April.

The heated term of August 3 to 17 was especially notable by reason of the great mortality from sunstroke in the centers of population throughout the central valleys and a portion of the eastern seaboard.

The territory over which unusually high temperatures prevailed embraced all of the country east of the Rocky Mountains, excepting only the seaward margin of the South Atlantic and Gulf coasts. The greatest continuous heat throughout the entire period was experienced in Arkansas, Oklahoma, and northern Texas and Louisiana. The shade temperature at 6.30 p. m. (mean local time) August 7, at Fort Smith, Ark., was 102°, and it is quite probable that it was 100° or more over at least 80,000 square miles of contiguous territory.

Great heat in the central valleys and the East was not felt continuously throughout the entire period; it seemed rather that a series of hot waves, separated by an interval too short to permit of cooling by radiation, passed across the country.

The temperature of November in the Northwest was exceptionally low for the season, the deficiency being greatest over Montana and the western portion of the Dakotas, where it ranged from 15° to 27° below the normal throughout the month. The deficiency over the entire region from the North Pacific Coast to the upper Mississippi Valley generally exceeded 8° per day. In the succeeding month the reverse conditions obtained, the excess of temperature above the normal being greatest in the region of very low temperatures during November.

An accurate conception of the temperature of a place must include a knowledge of the diurnal range and the variability. The diurnal range expresses the number of degrees on the thermometric scale passed over between the warmest hour of daytime and the coldest hour of nighttime, or the difference between the daily maximum and daily minimum temperatures. The average daily range is not given in the published tables, but it can be obtained by taking the difference between the figures in the columns under mean temperature headed "Max. and Min." Thus the mean daily range in July, 1896, at New Orleans was 89.8° — 75.7° = 14.1°; Denver, Colo., 85.1° — 58.7° = 26.4°.

In general, the range is least near the sea and greatest over plateaus and deserts. Compare the daily range at Galveston and El Paso, Tex.

Variability is the term by which climatologists express the accidental changes in the daily mean temperature of one day as compared with the next. It may be expressed in several ways; as, for example, in the table following.

TABLE IV.—NUMBER OF DAYS DURING 1896 THAT THE DAILY MEAN TEMPERATURE WAS NORMAL OR DIFFERED THEREFROM BY 1° TO 5°, 6° TO 10°, 11° TO 20°, 21° AND OVER, RESPECTIVELY.

Month.	Key West, Fla.					San Diego, Cal.					San Francisco, Cal.					Phœnix, Ariz.				
	Normal.	1°-5°	6°-10°	11°-20°	21° +	Normal.	1°-5°	6°-10°	11°-20°	21° +	Normal.	1°-5°	6°-10°	11°-20°	21° +	Normal.	1°-5°	6°-10°	11°-20°	21° +
January	4	14	12	1	.....	2	23	6	.....	.....	4	21	6	.....	.....	0	16	13	2	.....
February	1	18	8	2	.....	4	18	5	2	.....	5	17	6	1	.....	2	15	12	.....	.....
March	6	22	1	2	.....	2	19	8	2	.....	2	18	8	3	.....	2	18	6	5	.....
April	11	19	.....	.....	.....	2	24	4	.....	.....	1	17	12	.....	.....	2	15	10	3	.....
May	7	24	.....	.....	.....	4	24	0	2	1	1	21	7	2	.....	0	19	5	7	.....
June	7	23	.....	.....	.....	4	23	2	1	.....	2	23	5	.....	.....	1	17	5	7	.....
July	6	24	1	.....	.....	4	26	1	.....	.....	6	25	.....	.....	.....	2	18	9	2	.....
August	6	25	.....	.....	.....	6	23	2	.....	.....	7	24	.....	.....	.....	2	26	3	.....	.....
September	6	24	.....	.....	.....	4	26	.....	.....	.....	2	24	4	.....	.....	1	20	8	1	.....
October	2	29	.....	.....	.....	8	22	1	.....	.....	3	19	8	1	.....	1	20	10	.....	.....
November	2	24	4	.....	.....	8	19	3	.....	.....	4	20	5	1	.....	1	12	15	2	.....
December	5	19	7	.....	.....	5	20	6	.....	.....	5	26	.....	.....	.....	4	23	4	.....	.....
Year	63	265	33	5	.....	53	267	38	7	1	42	255	61	8	.....	18	219	100	29	.....

Month.	St. Paul, Minn.					Memphis, Tenn.					Charleston, S. C.					Boston, Mass.				
	Normal.	1°-5°	6°-10°	11°-20°	21° +	Normal.	1°-5°	6°-10°	11°-20°	21° +	Normal.	1°-5°	6°-10°	11°-20°	21° +	Normal.	1°-5°	6°-10°	11°-20°	21° +
January	0	12	1	12	6	1	10	12	8	.....	2	22	5	2	.....	0	17	9	3	2
February	2	6	7	8	6	1	18	4	6	.....	2	12	10	4	1	1	8	10	9	1
March	2	17	7	4	1	1	10	11	9	.....	1	17	8	5	.....	1	17	4	9	.....
April	2	9	10	9	.....	2	8	7	13	.....	3	10	15	2	.....	0	17	7	4	2
May	3	12	8	4	4	0	8	18	5	.....	0	20	10	1	.....	0	14	11	5	1
June	2	18	10	.....	.....	3	21	5	1	.....	5	22	3	.....	.....	2	17	6	5	.....
July	1	18	11	1	.....	4	17	10	.....	.....	2	26	3	.....	.....	2	13	13	3	.....
August	0	15	14	2	.....	1	13	17	.....	.....	3	24	4	.....	.....	1	19	7	4	.....
September	0	16	11	3	.....	0	12	10	8	.....	1	23	5	1	.....	1	20	7	2	.....
October	0	13	10	8	.....	2	18	8	3	.....	2	16	8	5	.....	1	18	10	1	1
November	0	7	9	9	5	1	9	9	9	2	2	12	10	6	.....	3	7	13	6	1
December	1	11	8	8	3	3	8	10	9	1	1	15	10	5	.....	0	9	14	7	1
Year	13	154	106	68	25	19	152	121	71	3	24	219	91	31	1	12	176	111	58	9

The variability may also be expressed by the average difference between daily means of successive days regardless of whether the temperature rose or fell. The normals for a number of stations in the United States, selected with a view of representing all sections, are given below:

TABLE V.—NORMAL VARIABILITY OF TEMPERATURE.

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Abilene, Tex	7.8	8.6	7.9	5.8	4.4	3.0	2.2	2.4	3.4	4.7	6.6	7.1	5.3
Atlanta, Ga	6.0	6.0	5.7	4.4	3.5	2.6	2.2	2.1	2.6	3.7	5.1	5.3	4.1
Bismarck, N. Dak	9.0	8.4	7.1	5.6	4.9	4.4	4.4	5.0	5.7	5.7	6.9	7.7	6.2
Boston, Mass	7.3	7.3	5.3	5.5	5.5	5.0	4.0	3.9	4.9	5.3	6.2	7.4	5.6
Charlotte, N. C	6.0	6.3	5.7	4.9	3.9	2.9	2.6	2.5	3.0	4.1	5.1	5.4	4.4
Chicago, Ill	7.6	7.2	6.0	6.2	5.9	5.2	4.2	3.8	4.6	4.9	5.7	6.4	5.6
Cleveland, Ohio	7.2	7.8	6.7	6.1	5.3	3.9	3.6	3.7	4.4	4.9	5.8	5.8	5.4
Columbus, Ohio	7.3	7.5	6.4	5.4	4.7	3.5	3.0	3.2	4.2	4.9	6.0	6.0	5.2
Davenport, Iowa	7.9	8.1	6.0	5.6	4.6	3.7	3.4	3.5	4.6	5.2	6.0	6.6	5.4
Denver, Colo	8.1	6.6	6.7	5.7	5.2	4.1	3.5	3.2	4.6	5.3	6.3	6.7	5.5
Dodge City, Kans	7.3	7.3	7.2	6.3	5.3	3.9	3.5	3.4	4.8	5.5	6.3	6.4	5.6
El Paso, Tex	4.4	4.4	4.5	3.9	3.3	2.5	2.3	2.0	2.5	2.9	3.8	4.0	3.4
Fort Smith, Ark	6.7	6.8	5.9	4.5	3.7	2.8	2.3	2.5	3.1	3.9	5.7	5.9	4.5
Galveston, Tex	5.6	4.6	3.8	2.2	1.8	1.3	1.1	1.4	1.9	2.9	4.9	5.2	3.1
Helena, Mont	8.5	7.1	5.4	4.9	4.5	4.0	3.8	3.8	4.4	4.1	6.4	6.1	5.2
Jacksonville, Fla	5.7	5.2	5.0	3.3	2.5	2.0	1.8	1.8	1.9	3.0	4.7	5.2	3.5
Louisville, Ky	7.6	7.7	6.7	5.3	4.3	3.5	2.8	2.9	3.6	4.4	6.3	6.5	5.1
Marquette, Mich	5.9	7.4	6.1	5.7	6.5	6.4	5.5	5.0	6.1	5.0	5.0	5.4	5.8
Memphis, Tenn	6.6	6.6	6.2	4.8	3.8	2.6	2.9	2.4	3.1	4.3	6.0	6.4	4.6
Mobile, Ala	5.7	4.9	4.5	3.0	2.4	1.9	2.0	1.8	2.0	3.3	4.8	5.4	3.5
Nashville, Tenn	7.5	7.4	6.5	4.9	4.0	2.8	2.3	2.4	3.1	4.3	6.2	6.5	4.8
Northfield, Vt	9.3	9.7	6.5	5.2	5.1	4.5	3.9	4.1	5.4	5.1	6.8	8.3	6.2
North Platte, Nebr	7.3	6.8	6.7	6.1	5.0	4.0	3.9	3.9	5.3	5.2	6.1	5.8	5.5
Omaha, Nebr	8.3	8.4	7.3	6.3	4.9	4.0	3.7	3.8	5.2	5.6	6.9	7.1	6.0
Philadelphia, Pa	5.9	6.7	5.5	5.1	4.6	4.0	3.3	2.9	3.8	4.4	5.2	5.5	4.7
Portland, Oreg	3.7	3.0	3.0	3.1	3.6	3.2	2.9	2.9	3.2	3.0	3.3	3.3	3.2
Red Bluff, Cal	3.2	3.1	2.7	3.2	3.7	3.6	3.0	2.9	3.3	3.0	3.0	3.2	3.2

Total Precipitation, 1896.

Chart XVIII.

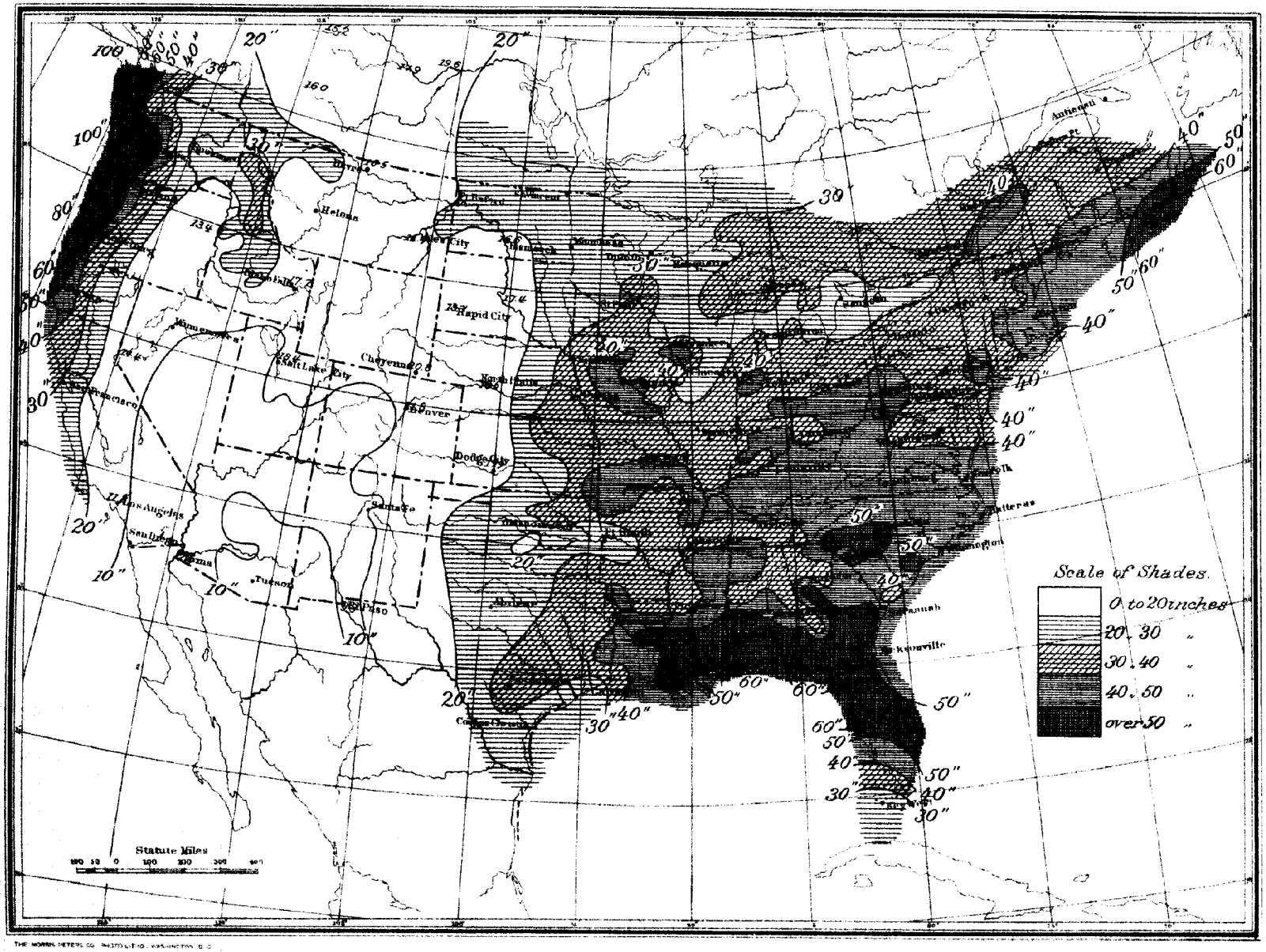


TABLE V.—NORMAL VARIABILITY OF TEMPERATURE—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Rochester, N. Y	7.2	8.0	6.4	5.7	5.6	4.3	4.0	3.9	5.0	5.3	5.9	6.2	5.6
St. Louis, Mo	8.6	8.2	7.0	5.9	4.6	3.4	3.1	3.0	4.2	5.0	6.5	7.0	5.5
St. Paul, Minn	8.2	8.5	6.0	5.1	4.4	3.6	3.5	3.7	4.6	5.2	6.3	7.0	5.5
Salt Lake City, Utah	4.2	4.2	4.1	4.9	4.7	4.3	3.3	2.9	4.2	4.1	3.9	3.8	4.0
San Diego, Cal	2.3	2.3	1.8	1.8	1.4	1.3	1.1	1.2	1.5	1.9	2.2	2.3	1.8
San Francisco, Cal	2.0	2.1	2.3	2.2	2.6	2.0	2.0	1.9	2.6	2.8	2.1	2.1	2.2
Santa Fe, N. Mex	4.2	4.1	4.2	4.7	3.9	3.2	2.2	2.1	2.7	3.3	3.8	4.0	3.5
Shreveport, La	6.2	6.2	5.3	3.8	3.1	2.3	2.0	2.1	2.5	3.6	5.5	5.8	4.0
Spokane, Wash	5.4	4.5	3.2	3.2	3.6	3.4	3.2	3.0	3.3	3.2	4.0	3.9	3.7
Tucson, Ariz	3.4	3.6	3.5	3.4	3.0	2.6	2.2	2.2	2.4	3.2	3.3	3.8	3.0
Washington, D. C	5.9	6.6	5.9	5.2	4.5	3.7	3.2	3.1	3.9	4.7	5.4	5.5	4.8
Wilmington, N. C	6.9	6.8	6.1	4.7	3.4	2.6	2.3	2.1	2.6	4.3	5.5	6.3	4.5
Winnemucca, Nev	5.1	4.7	3.9	4.5	4.1	3.8	3.4	2.7	4.0	3.5	4.6	4.7	4.1

The variability is least, 3° or less, on the average of the year, at San Diego, and San Francisco, Cal., and Tucson, Ariz., in the order named. The weather at the two stations first named is dominated almost wholly by the influence of the Pacific Ocean. The temperature of the water at the surface of the latter varies from about 50° in winter to 60° in midsummer and early fall. The small variability of land temperatures on the immediate coast is, therefore, easily accounted for.

The influence of the ocean seems to extend some distance inland, the variability at Los Angeles, about 15 miles from the Pacific, being but a trifle greater than that of San Francisco. The equability of temperature in southern California, which also obtains in Arizona and southern New Mexico, is, however, in part due to the absence of atmospheric disturbances such as sweep across the northern boundary.

January and February are the months of greatest variability; July and August the least.

Precipitation, 1896.—The table below shows the monthly departures of precipitation by geographic districts, ten of which show an excess and ten a deficit.

The general drought of 1893, 1894, and 1895 was broken in a number of districts during the year, although at its close there was a considerable deficit in the Middle, South Atlantic, and Gulf States.

The total depth of rain and snow is graphically exhibited on Chart XVIII.

The monthly and annual amounts for about 2,500 stations are given in Part V of this report.

TABLE VI.—PRECIPITATION DEPARTURES, 1896.

District.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
New England	−2.4	+0.4	+1.2	−2.0	−0.7	−0.1	+0.2	−1.6	+2.3	+0.2	−1.1	−1.4	− 5.00
Middle Atlantic States	−1.9	+2.1	+0.2	−2.2	+0.1	+0.7	+0.9	−2.7	−0.3	−1.5	−0.5	−2.1	− 7.20
South Atlantic States	−1.1	+1.5	−2.1	−2.0	−1.1	−0.4	+1.2	−3.3	−2.5	−1.6	+0.4	+0.3	−10.70
Florida Peninsula	+0.2	+0.2	0.0	−1.0	−2.1	+2.6	+1.6	−1.7	−1.8	−2.6	+0.7	−0.1	− 4.00
East Gulf States	−1.7	+0.3	−0.9	−1.7	−2.0	+1.5	−0.5	−2.0	−1.2	+1.5	−0.3	−2.0	− 9.00
West Gulf States	+0.5	−0.4	−0.9	−1.7	−1.4	−2.3	−1.2	−2.3	0.0	+1.6	−2.2	−2.2	−12.50
Ohio Valley and Tennessee	−2.6	−1.2	−0.1	−1.7	−0.4	−0.7	+3.9	−0.7	+1.2	−1.0	+0.8	−2.1	− 4.60
Lower Lake Region	−0.8	+0.8	+0.8	+0.2	−1.4	+0.1	+2.4	+0.4	+1.1	−1.7	−0.8	−1.0	− 2.10
Upper Lake Region	−0.5	−0.6	−0.7	−1.1	−0.2	−1.5	−0.2	+0.4	+0.9	−0.8	+1.0	−1.3	− 2.40
North Dakota	+0.6	−0.1	+0.6	+1.2	+1.6	−0.9	−1.6	−0.3	+0.4	−0.3	+2.1	−0.4	+ 2.90
Upper Mississippi Valley	−0.8	−0.8	−0.6	+0.9	+1.7	−1.1	+1.7	−0.2	+0.9	−0.2	+0.3	−1.3	+ 0.40
Missouri Valley	−0.5	−0.7	−0.5	+1.2	+2.0	−1.3	+0.5	−0.9	+0.4	+0.5	+0.3	−0.8	+ 0.20
Northern Slope	−0.1	−0.2	+0.7	+0.1	−0.1	−0.8	+0.6	−0.3	+0.8	−0.1	+0.7	−0.4	+ 0.90
Middle Slope	−0.5	−0.6	−0.6	+0.2	−0.6	−0.5	+1.3	−1.2	+0.4	+0.5	+0.2	−0.4	+ 1.80
Southern Slope	.....	.....	.....	.....	.....	.....	+2.4	−1.7	+1.0	+1.8	−0.5	+1.6	.....
Southern Plateau	+0.2	−0.4	−0.2	0.0	−0.4	0.0	+1.3	−0.2	+0.3	+0.9	−0.2	−0.2	+ 1.10
Middle Plateau	+1.0	−1.1	+0.4	+0.6	+1.4	−0.6	+0.5	+0.9	0.0	−0.4	+0.8	−1.1	+ 2.40
Northern Plateau	−0.2	−1.2	0.0	+0.3	+0.8	−0.5	+0.1	+0.8	−0.6	−0.5	+2.1	0.0	+ 1.10
North Pacific Coast Region	+3.5	+1.4	−1.7	+1.2	+1.3	−0.4	−1.1	+0.4	−2.0	−0.9	+5.3	+3.1	+10.10
Middle Pacific Coast Region	+2.5	−3.2	−0.3	+3.4	+0.7	−0.4	−0.1	+0.2	0.0	−0.4	+1.8	−0.3	+ 3.90
South Pacific Coast Region	+0.4	−2.4	+0.5	−0.1	−0.2	−0.1	0.0	0.0	−0.1	+0.7	+0.3	−0.8	− 1.80

Cloudiness.—The mean proportion of cloud observed during the year is graphically shown on Chart XIX. The numerical values upon which the chart is based will be found in Part III, columns headed "Cloudiness," "Daylight." The number of clear days, viz, those on which the extent of sky covered by cloud was three-tenths or less, and the number of days wholly cloudy, will also be found in Part III. The hourly values of cloudiness for stations equipped with automatic sunshine recorders may be obtained from the tables of hourly sunshine, published in this report, by assuming that the difference between the recorded sunshine and 100 represents the cloudiness.

The normal cloudiness at all Weather Bureau stations, computed from the beginning of observations at the respective stations to the end of 1895, is given in the following table, and the numerical values are graphically shown on Chart XX:

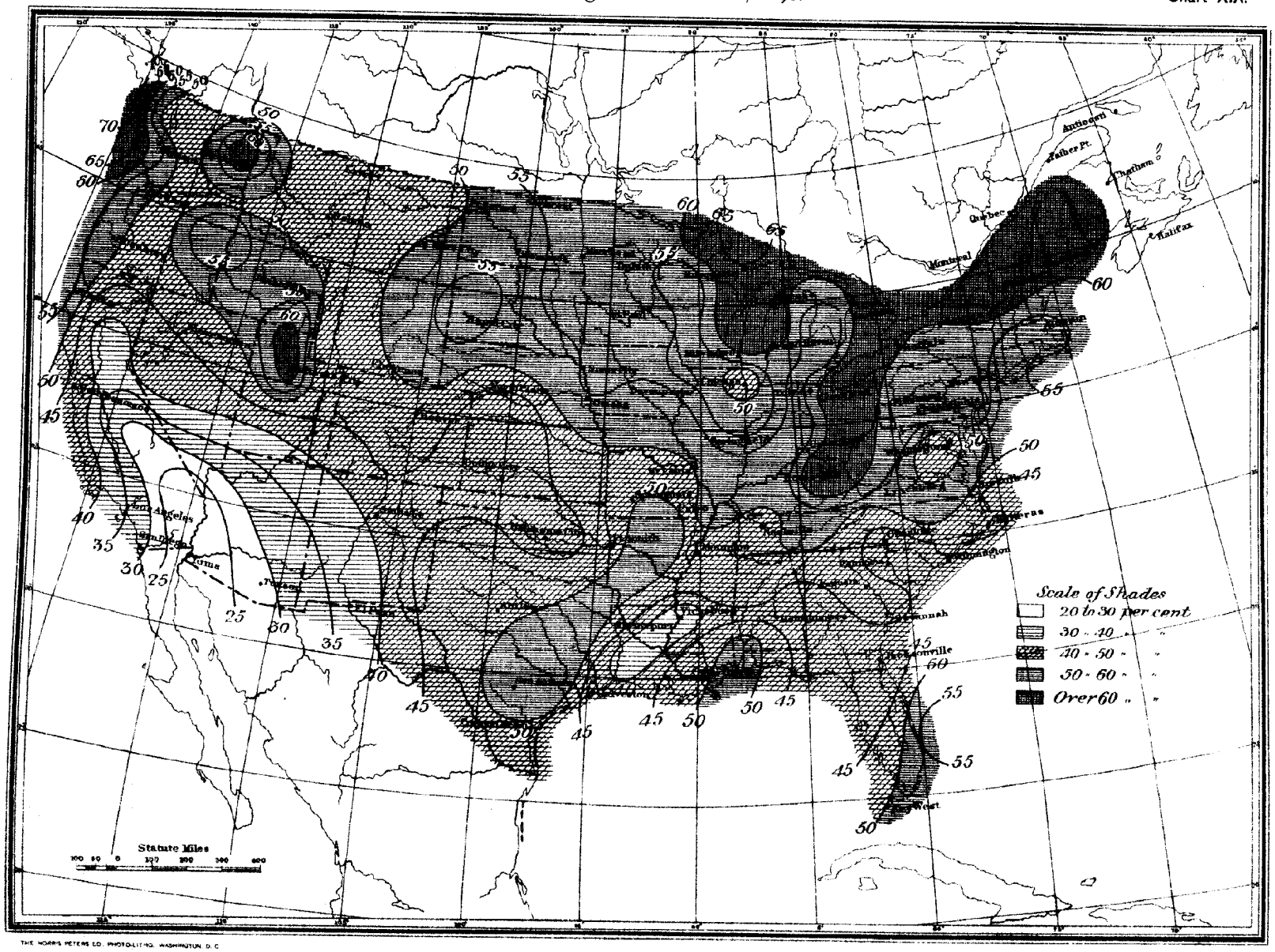
TABLE VII.—NORMAL CLOUDINESS, COMPUTED FROM MONTHLY MEANS BASED ON TRI-DAILY OBSERVATIONS, NOVEMBER, 1870, TO JUNE 30, 1888, THEREAFTER FROM FREQUENT PERSONAL OBSERVATIONS.

[Scale 0-10.]

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Abilene, Tex	3.9	4.5	4.2	4.0	4.1	3.7	3.2	4.2	3.7	2.7	3.6	4.0	3.8
Albany, N. Y	6.3	6.0	6.1	5.6	5.5	5.1	4.9	5.0	4.9	5.8	6.5	6.8	5.7
Alpena, Mich	7.3	6.4	5.7	5.3	5.3	4.8	4.6	4.6	5.2	6.1	7.5	7.7	5.9
Apache, Fort, Ariz	3.3	3.6	3.3	2.9	2.0	2.1	4.8	4.9	2.4	2.0	2.3	2.8	3.0
Atlanta, Ga	5.7	5.5	4.7	4.4	4.5	5.1	5.2	5.4	4.4	3.8	4.5	5.1	4.9
Atlantic City, N. J	5.6	5.5	5.5	5.1	4.9	4.5	4.5	4.6	4.7	4.7	5.1	5.3	5.0
Augusta, Ga	5.1	5.1	4.6	4.2	4.2	4.8	4.9	5.2	4.6	3.5	4.4	4.7	4.6
Baker City, Oreg	6.7	6.2	6.2	6.0	5.4	4.7	2.4	2.3	3.8	4.4	5.4	6.4	5.0
Baltimore, Md	5.4	5.4	5.4	5.1	5.1	4.9	4.8	4.9	4.7	4.6	4.9	5.2	5.2
Barnegat City, N. J	5.7	5.4	5.6	5.4	4.9	4.7	4.7	4.7	4.7	4.6	5.1	5.6	5.1
Bismarck, N. Dak	4.3	4.8	5.3	5.4	5.1	4.8	4.0	3.7	3.8	4.6	5.0	5.0	4.6
Benton, Fort, Mont	6.1	5.7	4.8	4.8	4.5	4.6	3.3	2.7	4.1	5.3	5.3	5.8	4.8
Block Island, R. I	5.6	5.2	5.2	4.7	5.2	4.5	4.6	4.6	4.7	5.1	5.2	5.5	5.0
Boise City, Idaho	5.8	5.8	5.0	4.8	4.6	4.1	2.4	1.9	2.7	4.3	4.7	6.2	4.4
Boston, Mass	5.5	5.1	5.5	5.3	5.3	5.1	5.0	4.7	4.6	5.0	5.2	5.5	5.2
Breckenridge, Minn	4.6	5.1	5.1	5.3	5.8	5.3	4.2	4.6	4.8	5.2	6.0	5.7	5.1
Brownsville, Tex	5.6	5.7	5.6	5.4	4.7	3.9	3.4	4.2	4.8	4.0	5.2	5.3	4.8
Buffalo, N. Y	7.7	6.8	6.4	5.6	5.3	4.9	4.7	4.7	5.0	6.1	7.5	8.0	6.1
Buford, Fort, N. Dak	5.3	5.3	5.8	5.6	5.5	5.6	4.6	4.1	4.6	5.4	5.3	5.3	5.2
Burlington, Vt	7.0	6.2	6.7	6.4	5.8	5.4	5.3	5.1	5.7	6.4	7.6	7.5	6.3
Cairo, Ill	5.9	5.7	5.5	5.3	5.0	5.1	4.5	4.0	4.2	4.0	5.4	6.0	5.0
Canby, Fort, Wash	6.7	6.4	6.7	6.6	6.4	6.8	5.7	5.4	5.5	5.9	6.8	7.3	6.4
Cape Hatteras, N. C	5.2	5.2	4.8	4.8	4.6	4.6	4.3	5.2	4.4	4.3	5.0	5.0	4.8
Cape Henry, Va	5.8	4.9	5.0	5.0	4.4	4.5	4.7	5.1	4.4	4.2	4.9	5.3	4.8
Cape May, N. J	5.1	4.6	5.0	4.6	4.1	4.1	4.3	4.7	4.0	3.9	5.1	5.1	4.6
Carson City, Nev	4.2	4.1	4.5	3.5	3.3	2.3	1.4	1.7	2.6	2.7	2.5	4.5	3.1
Cedar Keys, Fla	4.7	4.1	3.9	3.5	3.9	5.2	5.5	5.1	4.2	3.5	3.9	4.3	4.3
Charleston, S. C	5.0	5.0	4.5	4.2	4.2	5.2	5.2	5.2	4.9	3.7	4.1	4.5	4.6
Charlotte, N. C	5.7	5.3	5.0	4.6	4.8	5.1	5.2	5.2	4.8	3.9	4.3	4.8	4.9
Chattanooga, Tenn	6.1	6.0	5.2	4.8	4.7	4.9	4.9	5.0	4.5	4.1	4.8	5.7	5.1
Cheyenne, Wyo	3.6	3.8	4.4	5.0	5.3	4.1	4.1	4.0	3.5	3.8	3.7	3.9	4.1
Chincoteague, Va	5.6	4.8	4.9	5.0	4.4	4.7	4.6	4.7	3.8	4.2	4.6	5.0	4.7
Chicago, Ill	5.9	5.6	5.7	5.3	4.8	4.9	3.8	3.9	4.3	5.0	6.0	6.1	5.1
Cincinnati, Ohio	6.5	6.2	6.0	5.3	4.8	5.1	4.4	4.4	4.4	4.6	6.0	6.3	5.3
Cleveland, Ohio	7.3	6.6	6.4	5.3	4.9	4.6	4.3	4.3	4.9	5.7	7.3	7.5	5.8
Columbia, Mo	5.6	6.3	6.3	6.0	5.7	5.0	4.7	4.1	4.1	3.3	5.3	5.9	5.2
Columbus, Ohio	6.9	6.5	6.4	5.6	5.3	5.2	4.3	4.3	4.3	5.0	6.0	6.7	5.5
Concho, Fort, Tex	4.0	4.1	3.8	3.3	4.2	3.6	3.4	3.7	4.3	4.4	3.9	3.9	3.9
Concordia, Kans	3.6	4.0	4.3	4.2	4.3	3.9	3.6	3.5	3.1	3.0	3.6	3.9	3.8
Corpus Christi, Tex	6.3	6.9	6.0	6.4	5.8	5.6	4.9	5.7	5.3	4.3	4.8	5.8	5.6
Corsicana, Tex	5.4	5.0	4.7	4.3	5.0	4.5	4.3	3.7	3.9	3.7	4.4	4.9	4.5
Custer, Fort, Mont	5.2	5.6	5.4	5.3	5.5	5.1	4.0	3.2	3.5	4.8	4.4	5.6	4.8
Davenport, Iowa	5.4	5.5	5.6	5.5	5.1	5.0	4.2	4.3	4.4	4.7	5.6	5.8	5.1
Davis, Fort, Tex	3.1	3.1	3.1	2.6	2.8	3.1	3.5	3.6	3.6	3.1	3.2	2.9	3.1
Dayton, Wash	6.4	5.8	4.4	4.7	4.6	4.6	2.8	1.9	3.5	4.8	5.5	7.0	4.7
Deadwood, S. Dak	4.1	4.5	4.8	5.2	4.9	4.4	3.5	3.2	3.5	3.8	4.0	4.5	4.2
Denison, Tex	5.4	5.0	4.6	4.0	5.3	3.8	4.0	3.4	3.0	3.4	4.4	4.4	4.2
Denver, Colo	3.4	3.8	4.4	4.9	5.1	3.8	4.4	4.3	3.2	3.5	3.4	3.8	4.0
Des Moines, Iowa	4.7	5.1	5.3	5.5	5.4	5.2	4.3	4.3	4.3	4.3	4.6	5.4	4.9
Detroit, Mich	7.0	6.1	6.1	5.4	5.0	4.8	4.2	4.2	4.4	5.3	6.5	6.9	5.5
Dodge City, Kans	3.9	4.1	4.1	4.0	4.6	3.7	3.9	3.6	3.1	3.0	3.6	4.0	3.8
Dubuque, Iowa	5.4	5.4	5.7	5.4	5.4	5.5	4.5	4.4	4.8	5.1	5.8	6.0	5.3
Duluth, Minn	5.1	5.5	5.1	5.4	5.2	5.1	4.6	4.6	5.1	5.8	6.4	5.8	5.3

Percentage of Cloudiness, 1890.

Chart XIX.



THE HORRIS PETERS CO. PHOTO-LITHO. WASHINGTON, D. C.

Average Cloudiness in the United States, expressed in Percentages.

Chart XX.

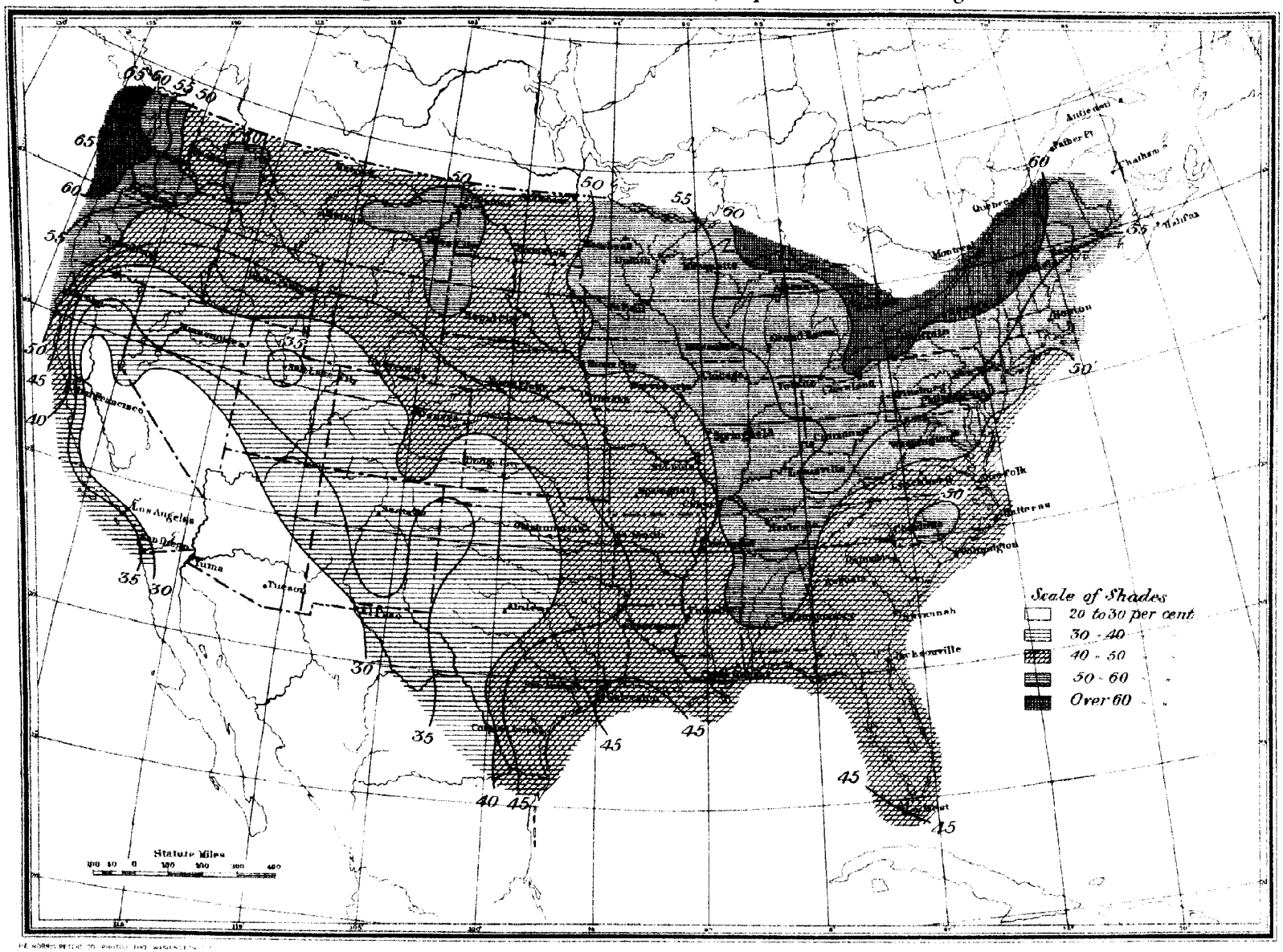


TABLE VII.—NORMAL CLOUDINESS, COMPUTED FROM MONTHLY MEANS BASED ON TRI-DAILY OBSERVATIONS, NOVEMBER, 1870, TO JUNE 30, 1888, ETC.—Continued.

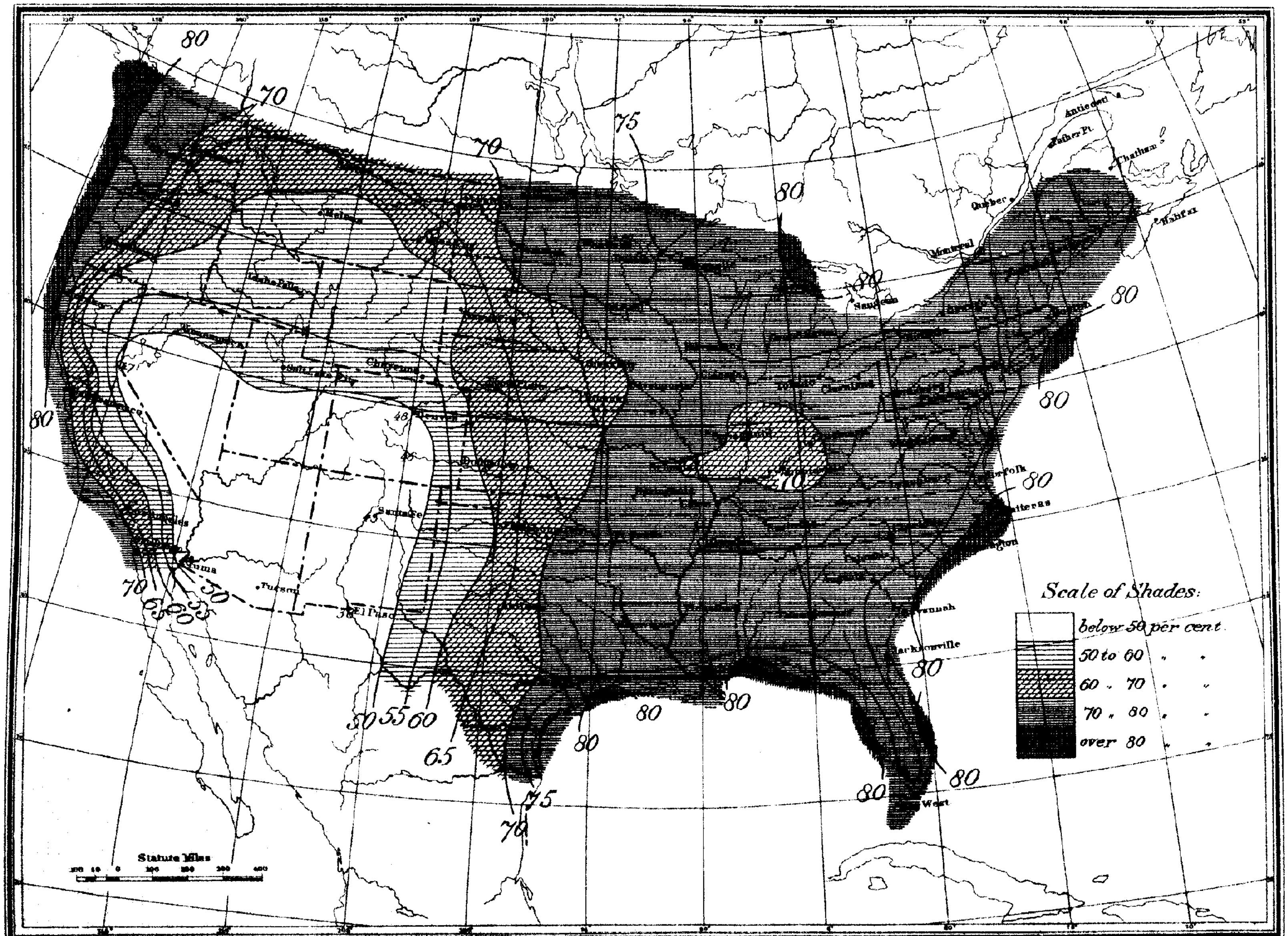
Stations.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Eastport, Me	5.7	5.5	3.0	5.8	5.8	5.6	5.4	5.2	5.2	5.8	6.2	6.1	5.7
Elliott, Fort, Tex	3.3	3.5	6.7	3.8	4.1	3.7	3.5	3.5	3.1	3.4	3.2	3.2	3.5
El Paso, Tex	2.9	3.1	2.9	2.2	2.4	2.5	3.7	3.8	3.1	2.4	2.7	3.1	2.9
Erie, Pa	7.7	6.8	6.4	5.4	5.0	4.8	4.4	4.6	5.0	6.0	7.5	7.9	6.0
Escanaba, Mich	6.2	5.9	5.4	5.2	5.2	5.0	4.5	4.7	5.2	6.3	7.1	6.9	5.6
Eureka, Cal	6.5	6.3	6.7	6.5	6.4	5.5	5.7	5.6	5.3	5.3	5.4	6.5	6.0
Florence, Ariz	3.2	2.9	2.4	2.0	1.2	1.0	3.3	3.0	1.6	1.8	1.4	2.9	2.2
Fresno, Cal	5.2	4.2	4.3	2.9	2.7	1.5	0.7	0.9	1.4	2.2	2.8	5.7	2.9
Fort Smith, Ark	4.9	5.4	4.8	4.6	4.6	4.2	3.9	3.9	4.0	3.5	4.5	4.9	4.4
Galveston, Tex	5.4	5.4	5.2	4.9	4.4	4.0	3.8	4.2	4.1	3.4	4.3	5.2	4.5
Gibson, Fort, Ind. T	5.6	4.9	5.0	4.8	5.4	4.4	3.8	3.4	3.8	3.8	4.9	5.4	4.6
Grand Haven, Mich	8.1	7.0	6.2	5.4	4.8	4.6	3.8	4.0	4.4	5.6	7.5	8.0	5.8
Grant, Fort, Ariz	3.2	3.5	3.2	2.3	2.0	2.4	4.9	4.5	2.4	1.7	2.3	3.3	3.0
Greenbay, Wis	6.5	6.4	6.1	6.7	6.6	6.3	5.9	5.8	5.5	6.3	6.9	7.0	6.3
Harrisburg, Pa	5.8	6.5	5.7	5.2	5.9	5.3	4.8	5.0	5.1	5.3	5.7	5.3	5.5
Hatteras, N. C	5.4	5.3	4.8	4.5	4.1	4.5	4.5	4.8	4.4	4.2	4.6	4.7	4.6
Havre, Mont	5.5	5.5	5.3	5.3	5.1	5.3	3.8	3.5	4.4	4.9	5.0	5.3	4.9
Helena, Mont	5.8	5.5	5.1	5.4	5.3	5.1	3.5	3.2	3.9	4.9	4.9	5.3	4.8
Huron, S. Dak	4.5	4.7	5.6	5.3	5.0	4.6	4.2	4.0	3.8	4.4	4.4	4.7	4.6
Indianapolis, Ind	6.3	6.0	6.2	5.6	5.2	5.3	4.6	4.3	4.2	4.6	5.8	6.3	5.4
Indianola, Tex	5.3	5.4	5.6	5.0	4.9	3.9	3.7	3.7	3.9	3.7	4.6	5.4	4.6
Jacksonville, Fla	5.0	5.0	4.2	4.1	4.1	5.1	4.8	4.9	5.0	4.2	4.5	4.7	4.6
Jupiter, Fla	4.5	4.7	4.0	4.0	4.4	5.5	4.5	4.6	5.6	4.7	4.9	4.7	4.7
Kansas City, Mo	5.0	5.5	5.1	5.5	5.5	4.6	4.4	4.0	4.1	3.8	4.6	4.8	4.7
Keeler, Cal	2.9	3.3	3.3	2.7	2.5	1.3	1.4	1.6	1.6	2.0	2.5	3.4	2.4
Keokuk, Iowa	5.2	4.9	5.3	5.0	4.9	4.8	3.9	3.6	3.8	4.1	5.0	5.3	4.6
Key West, Fla	4.5	3.8	3.3	3.4	4.3	5.4	5.2	5.2	5.4	4.8	4.3	4.2	4.5
Kittyhawk, N. C	5.4	5.0	4.8	4.8	4.2	4.3	4.3	5.2	4.5	4.3	4.8	5.0	4.7
Knoxville, Tenn	6.1	5.9	5.2	4.8	4.5	4.8	4.7	4.7	4.2	3.8	5.1	5.3	4.9
La Crosse, Wis	5.1	5.1	5.4	5.2	5.1	5.0	4.2	4.4	4.5	5.1	5.8	5.6	5.0
Las Animas, Colo	3.9	3.7	3.9	4.8	4.8	4.0	4.1	3.9	3.1	3.2	2.9	4.0	3.9
Leavenworth, Kans	5.0	5.2	5.3	5.4	5.4	4.7	4.2	3.9	4.2	4.0	4.6	5.2	4.8
Lewiston, Idaho	6.7	5.8	4.4	4.4	4.4	4.5	2.7	2.0	3.1	4.6	5.6	6.6	4.6
Lexington, Ky	6.5	6.8	6.4	5.5	5.9	5.5	5.0	5.2	4.6	5.4	6.0	6.4	5.8
Louisville, Ky	6.2	6.1	5.9	5.3	5.0	5.2	4.5	4.2	4.4	4.2	5.7	6.1	5.2
Lynchburg, Va	5.2	5.3	5.0	4.9	4.9	5.0	4.8	5.1	4.5	4.0	4.5	4.8	4.8
Macon, Fort, N. C	6.0	4.7	4.8	5.1	4.4	5.4	4.7	5.4	4.5	3.8	4.3	5.0	4.8
Maginnis, Fort, Mont	5.9	5.8	5.4	5.2	5.3	5.3	3.9	3.7	3.9	4.8	4.8	5.5	5.0
Marquette, Mich	6.9	6.5	5.7	5.5	5.2	5.0	4.7	4.7	5.6	6.8	7.4	7.5	6.0
Meridian, Miss	5.1	6.1	5.1	5.1	4.9	5.5	6.3	5.6	4.2	2.5	4.3	5.1	5.0
Memphis, Tenn	5.7	5.7	5.0	4.7	4.4	4.2	4.2	3.9	4.0	3.4	5.0	5.5	4.6
Milwaukee, Wis	6.0	5.9	5.9	5.6	5.1	5.1	4.4	4.7	4.8	5.4	6.3	6.3	5.5
Mobile, Ala	5.5	5.4	4.9	4.8	4.4	5.1	5.3	5.0	4.5	3.7	4.4	5.2	4.8
Montgomery, Ala	6.0	5.9	4.8	4.6	4.4	5.2	5.3	5.0	4.4	3.8	4.6	5.4	5.0
Montrose, Colo	4.3	4.8	4.8	5.0	4.0	2.6	4.0	3.9	2.7	3.2	3.8	4.9	4.0
Moorhead, Minn	4.6	5.2	5.5	5.4	5.2	5.2	4.4	4.0	4.4	5.4	5.6	5.3	5.0
Morgantown, W. Va	7.1	6.4	6.5	5.7	4.9	5.1	4.8	4.2	4.6	4.9	6.4	7.0	5.6
Mount Washington, N. H	6.0	5.7	6.1	5.9	5.4	5.7	5.6	5.3	5.2	5.7	6.0	5.8	5.7
Nantucket, Mass	5.9	5.7	5.3	5.0	5.2	4.9	4.6	4.8	5.1	5.8	5.7	5.9	5.3
Nashville, Tenn	6.5	6.3	5.7	5.3	5.1	5.2	4.9	4.6	4.5	4.0	5.3	6.2	5.3
New Haven, Conn	5.5	5.2	5.5	5.4	5.3	5.0	4.9	4.9	4.8	5.0	5.0	5.4	5.2
New London, Conn	5.3	5.0	5.3	5.2	5.1	4.8	4.8	4.8	4.8	4.9	5.1	5.2	5.0
New Orleans, La	5.3	5.2	4.8	4.8	4.3	4.7	4.9	4.7	4.3	3.5	4.5	5.2	4.7
Newport, R. I	5.3	5.0	5.8	5.5	5.4	4.7	5.2	4.8	5.0	4.8	5.5	5.5	5.2
New York, N. Y	5.8	5.4	5.5	5.3	5.2	4.9	5.0	4.9	4.7	4.9	5.2	5.6	5.2
Norfolk, Va	5.4	5.5	5.1	4.8	4.8	4.8	4.8	5.1	4.7	4.2	4.7	4.8	4.9
Northfield, Vt	6.7	6.4	6.3	5.7	6.0	5.7	5.3	5.8	5.7	6.6	7.0	6.9	6.2
North Platte, Nebr	4.0	4.4	5.0	5.0	5.4	4.5	4.3	4.0	3.6	4.0	4.1	4.4	4.4
Oklahoma, Okla	4.3	4.9	3.8	3.7	4.4	3.3	3.2	3.1	2.6	2.5	3.4	4.0	3.6
Olympia, Wash	7.7	7.2	6.5	6.3	5.5	5.8	4.1	4.0	4.9	6.4	7.4	7.8	6.1
Omaha, Nebr	4.9	4.8	5.5	5.4	5.5	4.9	4.3	4.2	4.1	4.2	4.6	5.2	4.8
Oswego, N. Y	8.2	7.7	6.8	5.6	5.3	4.9	4.7	4.8	5.1	6.5	8.0	8.5	6.3
Palestine, Tex	5.4	5.8	5.1	5.3	4.7	4.8	4.1	4.3	4.3	3.8	4.7	5.7	4.8
Parkersburg, W. Va	6.4	6.4	6.4	5.6	5.6	4.9	4.1	4.4	4.1	5.1	6.2	5.9	5.4
Pembina, N. Dak	5.1	5.2	4.8	5.0	5.2	5.5	3.9	4.6	4.8	5.6	5.6	5.6	5.1
Pensacola, Fla	5.4	5.3	4.4	4.2	3.9	4.6	5.0	4.9	4.1	3.5	4.2	5.0	4.5
Philadelphia, Pa	5.6	5.5	5.6	5.4	5.1	5.0	5.0	4.9	4.8	4.7	5.2	5.7	5.2
Pikes Peak, Colo	3.7	4.2	4.5	4.7	4.6	3.8	4.8	4.9	3.5	3.4	3.4	3.7	4.1
Pittsburg, Pa	7.1	6.8	6.5	5.6	5.4	5.0	4.9	4.8	5.0	5.5	6.5	7.0	5.8
Poplar River, Mont	4.5	4.7	4.7	4.2	3.6	3.7	3.4	3.2	3.2	4.2	4.0	4.6	4.0
Port Angeles, Wash	7.1	7.1	6.5	6.2	5.4	5.7	3.6	3.4	5.0	6.4	7.2	7.2	5.9

TABLE VII.—NORMAL CLOUDINESS, COMPUTED FROM MONTHLY MEANS BASED ON TRI-DAILY OBSERVATIONS, NOVEMBER, 1870, TO JUNE 30, 1888, ETC.—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Port Huron, Mich	7.0	6.4	6.1	5.4	5.1	4.6	4.3	4.5	4.7	5.9	6.8	7.3	5.7
Portland, Me	5.3	4.9	5.6	5.3	5.5	5.1	4.8	4.7	4.8	5.3	5.3	5.4	5.2
Portland, Oreg	7.0	7.1	6.7	6.4	6.0	5.8	3.8	3.5	4.4	5.7	6.6	7.2	5.8
Prescott, Ariz	2.9	2.8	3.1	2.7	2.0	1.5	3.4	3.6	2.1	1.8	2.1	2.9	2.6
Pueblo, Colo	3.8	4.1	5.2	5.1	5.4	3.8	5.1	4.6	3.5	3.7	3.8	4.0	4.3
Punta Rassa, Fla	4.5	4.3	3.7	3.9	4.7	5.5	5.5	5.8	5.7	4.6	4.4	4.2	4.7
Raleigh, N. C	5.6	6.5	5.4	4.7	4.8	5.1	5.6	5.7	5.2	4.3	4.6	4.7	5.2
Rapid City, S. Dak	4.5	5.2	6.1	5.8	6.0	5.7	4.9	4.6	4.2	4.4	4.4	4.7	5.0
Red Bluff, Cal	4.6	4.4	4.4	4.2	3.6	1.9	1.0	0.7	1.3	2.4	3.4	5.2	3.1
Rio Grande City, Tex	5.2	5.0	5.1	4.7	4.5	4.0	3.0	4.2	4.4	3.9	4.6	4.5	4.4
Rochester, N. Y	7.8	7.0	6.6	5.4	5.2	4.9	4.6	4.6	4.9	6.0	7.6	8.0	6.0
Roseburg, Oreg	7.0	6.8	6.2	6.2	5.2	5.2	3.0	2.2	3.4	5.2	5.9	7.0	5.3
Sacramento, Cal	4.5	4.0	3.9	3.5	2.7	1.5	0.5	0.4	1.1	2.0	2.8	4.9	2.6
St. Louis, Mo	5.2	5.2	5.3	5.0	4.9	4.7	4.2	3.8	3.8	3.7	5.1	5.6	4.7
St. Paul, Minn	5.0	5.2	5.4	5.5	5.3	5.2	4.4	4.6	4.7	5.2	5.7	5.4	5.1
St. Vincent, Minn	4.1	4.5	4.7	5.3	4.6	4.5	4.3	4.0	4.7	5.6	5.4	4.6	4.7
Salt Lake City, Utah	5.4	5.5	5.3	5.3	4.5	3.2	2.8	3.2	2.6	3.7	4.5	5.7	4.3
San Antonio, Tex	5.1	5.7	5.3	5.2	5.2	4.5	4.3	4.6	4.4	3.7	4.5	4.9	4.8
San Diego, Cal	3.8	4.3	4.8	4.4	5.3	4.8	4.3	3.9	3.7	3.8	3.3	3.9	4.2
Sandusky, Ohio	7.4	6.9	6.6	5.9	5.5	4.9	4.5	4.7	4.8	5.6	7.0	7.5	5.9
Sandy Hook, N. J	5.5	5.0	5.4	5.4	4.8	4.4	4.6	4.5	4.7	4.5	5.0	5.6	5.0
San Francisco, Cal	4.8	4.7	4.8	4.3	4.2	3.8	4.3	4.3	3.5	3.3	3.8	5.0	4.2
Santa Fe, N. Mex	3.3	3.9	3.8	4.1	4.0	3.2	4.7	4.7	3.2	2.5	3.0	3.5	3.7
Sault de Ste. Marie, Mich	8.3	7.4	6.8	6.9	7.5	6.5	6.4	6.5	6.7	7.7	8.6	8.6	7.3
Savannah, Ga	5.0	5.1	4.4	4.2	4.2	5.0	5.1	5.2	5.0	3.9	4.4	4.5	4.7
Shaw, Fort, Mont	5.3	4.8	4.1	4.4	4.3	4.5	3.3	2.9	3.8	4.6	4.6	4.8	4.3
Shreveport, La	5.6	5.6	5.1	5.0	4.6	4.6	4.2	3.9	3.9	3.4	4.5	5.3	4.6
Sill, Fort, Okla	4.3	4.2	4.0	3.8	4.3	3.7	3.3	3.2	3.9	3.1	3.7	4.0	3.8
Sioux City, Iowa	5.3	5.4	5.7	5.6	5.6	5.1	4.3	4.3	4.1	4.3	5.4	4.9	5.0
Smithville, N. C	5.4	4.7	4.5	4.5	3.8	4.5	4.5	5.0	4.5	4.0	4.5	4.7	4.6
Spokane, Wash	7.0	6.5	5.6	5.9	5.4	5.6	3.5	2.6	4.1	5.6	6.3	7.4	5.5
Springfield, Ill	5.5	5.5	5.6	5.4	5.2	5.2	4.1	3.8	4.1	4.2	5.1	5.9	5.0
Springfield, Mass	5.4	4.8	5.9	5.9	5.4	5.4	5.6	5.0	5.1	4.9	5.7	5.8	5.4
Springfield, Mo	5.2	5.7	5.3	4.8	5.2	4.6	4.4	4.1	3.9	3.5	4.9	5.2	4.7
Stanton, Fort, N. Mex	3.4	3.8	3.7	3.4	3.4	3.9	4.7	4.6	3.9	2.6	3.3	3.5	3.7
Stockton, Tex	3.1	3.4	3.2	2.8	3.0	3.0	3.0	3.0	2.8	2.8	2.9	3.3	3.0
Tampa, Fla	5.0	5.2	4.8	4.4	4.9	5.7	5.3	5.7	5.4	4.7	4.7	4.8	5.0
Tatoosh Island, Wash	7.5	7.4	7.1	7.0	6.6	6.9	6.1	5.2	6.3	6.5	7.6	7.8	6.8
Thatchers Island, Mass	6.0	6.1	5.9	5.8	5.3	4.1	4.5	4.3	5.2	5.8	5.7	6.2	5.4
Thomas, Fort, Ariz	3.3	3.4	2.9	2.1	1.8	2.0	3.9	4.0	2.2	2.6	2.3	2.6	2.8
Titusville, Fla	4.4	4.6	3.5	2.9	3.7	5.3	4.7	4.4	5.2	4.1	3.9	4.2	4.2
Toledo, Ohio	6.9	6.4	6.2	5.6	5.3	5.1	4.5	4.3	4.5	5.4	6.6	6.9	5.6
Tucson, Ariz	3.0	3.2	3.2	1.8	1.6	1.5	4.5	4.4	1.9	1.6	1.6	2.9	2.6
Walla Walla, Wash	7.0	6.1	5.8	5.5	4.4	4.6	2.3	1.9	3.4	4.8	5.6	6.9	4.9
Washington, D. C	5.8	5.6	5.4	5.2	5.1	4.8	4.6	4.8	4.7	4.7	5.1	5.4	5.1
Wichita, Kans	3.9	5.2	4.7	4.6	4.7	3.9	3.8	3.8	3.4	3.1	3.9	4.2	4.1
Wilmington, N. C	5.3	5.4	4.8	4.4	4.6	5.0	5.2	5.3	4.8	4.0	4.5	4.8	4.8
Winnemucca, Nev	4.8	4.9	4.8	4.8	4.4	3.4	1.8	1.8	2.4	3.2	3.9	5.2	3.8
Woods Hole, Mass	5.9	5.8	5.3	5.1	5.4	5.1	4.8	5.1	5.1	5.6	5.5	5.7	5.4
Yankton, S. Dak	4.3	5.0	5.3	5.1	5.4	4.7	4.2	4.1	3.9	4.2	4.4	5.0	4.6
Yuma, Ariz	2.4	2.4	2.4	1.6	1.3	0.8	1.8	2.3	1.1	1.3	1.7	2.5	1.8

Relative humidity.—The normal values of relative humidity last published (Annual Report, Chief Signal Officer, 1886, p. 470) were computed from observations made at 7 a. m., 3, and 11 p. m. (approximately), Washington mean local time. The change in the observing hours on January 1, 1888, viz, to 8 a. m. and 8 p. m., seventy-fifth meridian time, had the effect of dividing the humidity observations of the Government Weather Service into two series, which, for convenience of reference, will be termed *a* and *b*, respectively. The normals of series *a* were computed from the tridaily telegraphic observations of the period 1871–1887. The hours of observation at the beginning of the series were 7:35 a. m., 4:35, and 11:35 p. m.; at the close, 7 a. m., 3, and 10 p. m. Window thermometer shelters with little or no ventilation were in use throughout the period 1871–1885. The normals of series *b* were computed from twice-daily observations at 8 a. m. and 8 p. m., seventy fifth meridian time, 1888–1896. The results of the last-named period are believed to be more accurate than those heretofore obtained, largely on account of improvements introduced

Normal Annual Relative Humidity, in percentages.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

both in the exposure of the thermometers and methods of observation. It is not advisable to attempt to combine the two series in a general mean.

The differences between the two series (*b–a*) are shown in the table below, the numerical values of which represent the simple algebraic differences between the monthly means of the two series:

TABLE VIII.—DIFFERENCES BETWEEN THE MONTHLY MEANS OF SERIES *a* AND *b*, RESPECTIVELY (*b–a*).

[*Minus signs indicate that the monthly means of series a are greater than those of series b by the amounts given.*]

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Portland, Me	3.0	3.9	3.3	—1.0	10.3	9.2	5.0	8.1	8.6	7.3	5.1	.6	5.7
Boston, Mass	1.5	1.8	—.6	—.2	3.8	4.8	.2	2.2	4.0	2.0	3.2	—1.6	1.7
Albany, N. Y	6.0	6.3	6.3	6.1	7.5	8.1	5.4	5.0	5.8	6.7	6.5	5.5	6.5
Philadelphia, Pa	—.1	1.0	.1	—.6	2.9	.9	.4	—1.0	3.9	1.1	5.0	—1.4	1.1
Washington, D. C	0	.9	1.8	1.4	5.5	4.6	5.7	2.3	5.2	1.5	3.6	—.6	2.7
Charleston, S. C	4.6	7.2	8.0	6.0	3.7	4.7	5.0	4.5	4.3	1.4	5.7	5.5	5.0
Jacksonville, Fla	3.1	5.2	6.0	3.7	3.2	5.0	5.4	4.9	3.9	3.6	6.2	6.6	4.9
Lynchburg, Va	3.1	7.5	9.7	3.6	6.4	3.8	4.3	3.9	6.8	3.7	6.5	4.2	5.5
Charlotte, N. C	.2	4.4	5.6	.4	1.1	5.6	7.6	5.8	4.4	—2.5	2.8	1.7	3.0
Atlanta, Ga	4.1	7.3	6.2	3.2	1.5	3.1	6.6	3.9	3.4	—2.0	7.4	5.7	4.2
Buffalo, N. Y	—.6	.5	—.5	—1.7	1.1	.7	—2.4	—.8	1.1	—1.7	—2.1	—2.3	—1.2
Cleveland, Ohio	.4	3.3	.3	3.0	4.4	1.9	—2.2	.7	4.4	3.5	1.6	—1.0	1.5
Columbus, Ohio	5.4	5.1	4.2	2.5	3.4	1.9	—.7	.3	.7	.8	5.0	3.3	2.7
Indianapolis, Ind	2.9	3.3	1.7	1.7	3.2	—1.3	—4.5	—3.4	—.1	—.2	2.6	.6	.6
Louisville, Ky	—1.5	.5	3.2	1.6	1.6	—1.5	—2.6	—1.4	—.6	—2.8	.6	—2.9	—.5
Nashville, Tenn	3.3	4.0	3.7	2.0	3.9	2.1	2.8	3.0	3.6	—.9	2.2	—2.5	2.4
Montgomery, Ala	1.9	6.7	3.9	.2	1.7	.6	5.3	5.5	3.7	.7	2.0	2.6	2.8
Mobile, Ala	6.5	8.9	7.8	6.9	5.7	4.1	6.2	5.5	6.2	3.6	7.3	6.5	6.4
New Orleans, La	6.4	10.5	5.9	5.0	3.0	4.5	4.6	4.0	3.2	2.0	7.2	1.4	5.1
Galveston, Tex	4.1	6.0	3.9	7.4	3.0	5.5	4.4	4.6	2.9	1.6	3.4	2.3	4.1
Shreveport, La	2.6	2.3	1.6	3.6	4.4	5.3	3.9	6.0	3.4	—1.5	2.4	.4	2.8
Little Rock, Ark	—.1	.3	2.3	.5	—3.4	—3.8	0	.5	.6	—3.9	.6	0	—.6
St. Louis, Mo	2.5	3.7	3.8	3.5	2.9	0	—1.5	1.1	4.7	.9	3.3	—.1	2.0
St. Paul, Minn	4.2	7.0	2.7	4.5	1.8	—1.4	—5.3	—4.4	—2.2	—.2	2.0	3.0	.9
Chicago, Ill	5.3	6.9	2.5	3.5	1.9	1.4	—3.5	—2.4	—.3	—.9	4.6	3.8	1.9
Marquette, Mich	6.7	7.3	5.1	8.8	8.0	3.0	1.7	4.2	4.6	8.0	6.5	5.8	5.8
Bismarck, N. Dak	—.1	—1.2	—1.1	2.5	3.6	3.7	2.9	—.8	2.3	5.1	3.1	0	1.3
Helena, Mont	—4.4	—1.4	—4.3	—8.9	—4.5	—7.4	—7.5	—7.0	—5.1	—6.0	—1.6	.8	—5.4
Spokane, Wash	1.3	—3.9	—8.3	—9.1	—2.4	—11.3	—9.8	—10.9	—11.1	—9.9	—3.4	1.4	—6.7
Omaha, Nebr	2.0	.1	1.1	.3	—2.8	—2.3	—3.8	—.8	—2.0	—2.2	—.1	—.5	—.9
Dodge City, Kans	2.1	2.4	.9	2.3	—3.5	—2.2	—1.3	—2.8	.3	—1.6	1.6	—.5	—.2
Denver, Colo	—1.8	.2	1.9	—5.1	2.3	—.2	1.9	—.9	—3.1	—1.7	—3.9	—6.3	—1.4
Santa Fe, N. Mex	0	—1.3	—1.0	—5.4	.9	—3.6	—1.0	—3.4	—1.3	3.1	—3.1	2.0	—.6
El Paso, Tex	—4.3	—7.6	—9.1	—11.4	—10.9	—11.9	—4.8	—5.6	—9.5	—10.7	—11.9	—10.4	—10.0
Yuma, Ariz	—2.7	—3.4	—3.7	—9.2	—2.5	—4.3	.2	.7	—.8	.1	—4.1	—.3	—2.8
Los Angeles, Cal	.9	—2.0	.2	0	3.2	1.4	3.7	4.4	.5	4.9	2.5	.2	1.1
San Francisco, Cal	4.7	2.5	4.7	5.4	4.8	4.3	4.3	4.0	2.4	5.3	2.3	4.5	4.0
Sacramento, Cal	1.2	—1.4	3.2	—1.9	3.8	1.9	3.1	4.0	3.8	1.2	—2.7	2.0	1.2
Portland, Oreg	5.8	2.8	—.7	2.4	4.1	3.6	—.7	—.3	1.9	2.0	5.1	6.0	2.7

In general, the means of series *b* are higher than those of series *a*, but at stations in the western plateau region the means of series *b* are lower than those of series *a*.

Chart xxi shows the geographic distribution of relative humidity in the United States, based on the normals of series *b*. This chart shows with sufficient accuracy for ordinary purposes the regions that are relatively moist or dry, as the case may be.

Statistics of relative humidity are often erroneously interpreted as giving the absolute amount of moisture in the air. Such an interpretation is misleading. To illustrate: The mean relative humidity of St. Paul and New Orleans for January is 79.1 and 79.4 per cent, respectively; in other words, the atmosphere at both places contains 79 per cent of the total quantity of moisture required for complete saturation and the relative humidities are said to be the same. The mean temperature of St. Paul for January is 10.6°; New Orleans, 53.8°. Air at the former temperature, if completely saturated, can contain 0.72 grain of moisture per cubic foot. At the temperature which prevails at New Orleans it can contain 3.67 grains; whence it follows that the absolute amount of moisture (water vapor) in the air at New Orleans in January is five times as great as at St. Paul.

The absolute humidity of the air may be given by weight as the number of grains in a given volume, generally a cubic foot, or by the pressure that it exerts.

In the tables of Part III the pressure due to the vapor contents of the air (the absolute humidity) is given under an appropriate heading. These data afford an easy means of comparing the absolute moisture contents of the air at different stations. Compare, for example, the absolute humidities of New Orleans and St. Paul in winter and also in summer.

TABLE IX.—NORMAL MONTHLY AND ANNUAL RELATIVE HUMIDITY.

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.	Length of record.
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Years.*
Abilene, Tex	70.4	71.2	61.7	61.0	64.9	63.9	58.4	64.0	67.1	65.6	66.3	68.8	65.3	9
Albany, N. Y	81.2	80.3	77.8	70.0	71.1	74.2	72.9	75.9	78.4	79.4	80.6	81.7	77.0	9
Alpena, Mich	83.8	82.2	80.8	78.3	74.8	76.0	73.8	77.9	82.1	82.8	84.7	84.0	80.1	9
Amarillo, Tex	58.2	68.0	50.2	45.0	50.2	56.0	56.8	63.4	57.8	59.4	55.6	64.6	57.1	5
Atlanta, Ga	76.4	73.9	68.6	62.4	65.8	71.1	76.3	77.9	75.2	68.4	73.3	75.6	72.1	9
Augusta, Ga	76.7	74.1	69.3	65.1	68.1	72.8	77.8	80.6	79.2	75.6	78.4	78.8	74.7	9
Baker City, Oreg	73.3	71.9	67.7	58.9	60.4	56.0	46.0	47.0	52.8	61.0	68.5	73.0	61.4	7
Baltimore, Md	71.7	69.8	65.6	61.8	67.2	69.6	69.4	70.4	74.3	68.8	71.6	69.1	69.1	9
Bismarck, N. Dak	78.9	79.0	76.1	70.2	66.7	70.7	66.6	63.3	65.4	71.2	77.8	77.4	71.9	9
Block Island, R. I	77.9	78.2	80.2	81.1	87.0	88.4	86.9	87.4	85.1	80.0	80.1	75.6	82.3	9
Boston, Mass	73.3	72.3	68.7	65.3	70.0	73.0	70.6	74.7	77.4	73.1	74.4	70.6	72.0	9
Buffalo, N. Y	79.6	78.7	75.7	69.7	70.1	72.6	69.8	70.0	73.3	71.6	74.0	77.2	73.5	9
Cairo, Ill	77.8	74.4	70.0	65.1	70.6	74.7	73.8	76.0	78.3	73.4	73.8	74.6	73.5	9
Carson City, Nev	61.0	54.4	47.1	40.9	43.8	39.4	36.9	37.7	41.2	46.9	50.8	60.9	46.8	8
Charleston, S. C	80.6	80.6	78.8	77.6	76.6	79.3	80.6	82.3	82.2	78.0	80.6	80.9	79.8	9
Charlotte, N. C	72.3	72.4	68.1	62.9	67.1	72.0	75.8	78.2	77.7	69.8	72.0	72.6	71.7	9
Chattanooga, Tenn	78.2	73.8	69.0	65.6	72.8	75.4	76.6	78.1	78.8	73.1	73.0	75.9	74.2	9
Cheyenne, Wyo	55.0	58.9	57.8	53.9	59.6	52.1	52.3	54.4	47.0	49.7	53.6	51.7	53.8	9
Chicago, Ill	81.3	80.8	74.6	71.1	70.0	71.9	66.9	67.9	68.8	69.1	76.7	79.2	73.2	9
Cincinnati, Ohio	76.7	74.0	68.8	61.0	63.6	64.6	64.6	65.3	69.1	68.8	73.1	74.7	68.7	9
Cleveland, Ohio	79.0	79.2	75.7	70.8	70.9	71.4	68.0	70.3	74.7	73.2	75.0	76.7	73.7	9
Columbus, Ohio	79.0	76.9	72.1	65.3	67.9	68.8	65.1	68.0	70.0	70.8	75.9	77.4	71.4	9
Concordia, Kans	72.9	73.3	69.2	63.2	65.2	66.6	66.4	68.6	67.6	68.4	72.1	72.7	68.8	9
Corpus Christi, Tex	74.7	74.0	72.9	74.9	73.2	73.2	72.9	73.3	72.7	70.3	72.3	73.3	73.1	8
Davenport, Iowa	79.7	78.0	71.3	65.1	67.0	70.1	65.1	67.9	71.7	69.4	74.6	77.6	71.5	9
Denver, Colo	52.7	54.0	52.1	44.9	51.6	44.4	49.1	48.2	42.9	45.2	47.9	49.0	48.5	9
Des Moines, Iowa	77.4	75.4	70.1	64.4	65.8	69.9	66.7	69.0	70.6	67.1	71.2	76.0	70.3	9
Detroit, Mich	82.4	80.2	74.9	70.9	68.6	70.6	66.1	68.3	74.1	74.2	78.6	80.8	74.1	9
Dodge City, Kans	71.8	70.3	62.3	59.1	61.4	61.3	61.9	63.1	62.1	61.2	63.8	67.8	63.8	9
Duluth, Minn	78.7	77.9	75.1	76.1	69.1	72.2	70.1	71.9	74.0	75.0	78.3	79.1	74.8	9
Eastport, Me	71.1	70.8	72.3	69.2	77.2	81.2	81.8	83.7	81.9	77.7	75.0	72.0	76.2	9
El Paso, Tex	47.2	42.0	31.4	21.8	22.6	24.8	42.3	46.7	46.7	45.8	43.9	45.8	38.4	9
Erie, Pa	80.3	81.0	77.8	72.3	72.7	72.4	67.7	69.2	74.1	72.7	75.1	77.3	74.4	9
Eureka, Cal	87.4	86.1	85.6	86.3	87.2	87.0	89.3	91.0	89.4	91.1	89.2	87.6	88.1	9
Fort Canby, Wash	89.0	88.1	84.9	85.2	85.0	86.8	87.9	89.7	89.2	89.4	88.9	89.2	87.8	9
Fort Smith, Ark	74.0	70.9	66.3	64.1	71.3	72.7	71.3	72.9	73.8	69.9	71.1	70.0	70.7	9
Fresno, Cal	81.6	71.7	69.8	59.3	52.7	42.4	34.7	34.7	43.6	55.1	64.1	83.2	57.7	9
Galveston, Tex	84.2	84.7	82.6	84.6	78.0	79.3	77.4	78.1	77.2	75.6	80.4	82.7	80.4	9
Grand Haven, Mich	87.1	85.8	78.3	70.9	71.4	73.7	69.0	73.1	75.0	75.7	79.1	82.8	76.8	9
Greenbay, Wis	79.1	79.1	76.0	70.7	67.8	69.6	66.8	70.8	73.1	75.4	77.3	78.7	73.7	9
Harrisburg, Pa	78.9	76.9	73.9	67.5	70.5	73.4	71.0	73.2	77.5	75.4	77.5	77.4	74.4	8
Hatteras, N. C	85.1	84.0	82.0	81.7	82.0	84.0	84.1	83.5	81.2	79.6	82.0	83.8	82.8	7
Havre, Mont	75.9	77.1	71.7	56.9	59.3	58.9	53.2	51.8	58.7	63.1	70.7	75.0	64.4	9
Helena, Mont	68.2	66.2	62.0	50.9	53.4	52.3	43.4	41.2	48.8	53.8	61.6	65.1	55.6	9
Huron, S. Dak	81.2	79.8	73.8	65.6	61.4	66.8	64.2	64.4	62.6	65.9	72.2	75.8	69.5	9
Idaho Falls, Idaho	83.2	82.2	77.2	62.5	57.5	51.4	42.6	43.0	50.2	57.2	73.0	82.6	63.6	4
Indianapolis, Ind	78.0	75.4	69.1	61.7	64.9	65.7	62.4	64.7	68.1	67.4	71.4	75.1	68.7	9
Jacksonville, Fla	79.1	78.6	74.1	72.3	73.0	77.6	78.6	80.9	82.9	79.8	82.2	82.6	78.5	9
Jupiter, Fla	81.7	81.1	78.1	76.7	80.4	84.3	82.9	83.2	84.1	80.6	80.6	81.1	81.2	9
Kansas City, Mo	75.8	75.5	71.1	68.0	69.5	71.1	70.8	71.4	71.9	65.7	70.2	74.4	71.3	8
Keokuk, Iowa	78.4	77.9	70.4	66.0	68.4	70.9	67.9	68.7	71.3	68.9	73.7	76.7	71.6	9
Key West, Fla	80.7	78.9	75.7	72.7	73.6	76.3	73.6	74.7	77.4	77.8	80.0	80.1	76.8	9
Knoxville, Tenn	76.0	70.9	68.0	62.7	71.4	74.3	77.3	78.9	76.9	72.6	73.3	75.3	73.1	9
La Crosse, Wis	80.1	78.4	71.9	63.4	63.6	71.0	68.5	70.9	73.0	71.8	75.5	78.0	72.2	8
Lander, Wyo	69.4	66.2	61.4	53.6	51.0	47.5	46.0	47.8	50.2	57.9	65.9	66.6	57.0	8
Lexington, Ky	76.3	73.0	69.8	63.8	66.3	70.4	70.2	70.6	70.1	65.8	71.8	72.8	70.1	9
Little Rock, Ark	75.3	73.0	69.4	67.6	71.1	73.8	75.0	76.0	76.1	71.1	73.4	73.7	73.0	9
Los Angeles, Cal	67.1	68.4	73.8	73.1	75.2	73.0	75.4	76.2	72.9	74.3	66.6	67.2	71.9	9
Louisville, Ky	71.3	69.0	66.2	60.7	63.9	65.2	64.4	65.8	67.7	64.7	68.2	68.0	66.3	9
Lynchburg, Va	71.3	71.8	67.9	62.9	69.7	71.9	72.1	75.7	78.4	73.6	73.3	71.1	71.6	9
Marquette, Mich	80.9	80.4	77.7	77.2	72.6	71.9	70.3	75.3	75.8	79.1	81.3	81.7	77.0	9
Memphis, Tenn	75.9	73.2	70.7	66.3	69.8	72.9	75.3	75.3	75.0	70.6	74.0	75.6	72.9	9
Miles City, Mont	82.0	80.6	75.4	62.4	57.6	57.4	48.2	44.0	53.8	64.2	76.3	78.3	65.0	5

TABLE IX.—NORMAL MONTHLY AND ANNUAL RELATIVE HUMIDITY—Continued.

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.	Length of record.
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Years.*
Milwaukee, Wis	79.7	78.9	77.2	73.9	72.1	75.4	70.2	71.1	74.3	74.8	77.0	77.9	75.2	9
Mobile, Ala	84.3	84.0	81.2	80.1	77.9	79.2	82.6	83.6	82.1	78.3	83.3	84.9	81.8	9
Montgomery, Ala	75.3	74.7	68.8	64.8	66.8	70.1	76.0	78.1	74.0	69.0	72.7	75.6	72.2	9
Moorhead, Minn	84.9	83.9	81.0	73.3	66.0	71.3	73.7	71.0	72.7	72.9	83.9	83.8	76.5	9
Nantucket, Mass	79.9	80.4	80.6	80.4	82.8	85.4	84.0	84.3	83.0	80.2	80.9	80.8	81.9	9
Nashville, Tenn	76.6	74.2	68.4	63.7	67.6	70.7	71.9	72.3	74.0	68.7	72.8	74.6	71.3	9
New Haven, Conn	76.0	74.8	72.6	72.0	77.3	79.3	78.1	79.1	82.1	76.8	77.8	73.9	76.6	9
New Orleans, La	79.4	80.9	76.4	76.0	74.2	78.1	78.3	78.8	77.3	74.0	79.4	79.6	77.7	9
New York, N. Y	75.1	74.1	70.9	68.8	72.6	75.1	72.2	74.9	76.4	72.8	75.9	73.4	73.5	9
Norfolk, Va	78.4	77.6	76.9	75.1	78.8	79.2	79.7	81.7	81.0	77.6	79.1	78.0	78.6	9
Northfield, Vt	77.7	74.6	75.7	69.0	72.1	76.2	77.0	82.8	84.1	82.1	79.3	76.4	77.2	9
North Platte, Nebr	72.4	69.1	68.0	62.0	62.3	66.4	67.2	67.1	63.0	62.1	66.6	67.6	66.2	9
Oklahoma, Okla	74.5	73.0	68.3	65.3	73.0	73.2	71.3	68.8	67.8	64.5	71.0	74.1	70.4	6
Omaha, Nebr	75.3	72.9	69.9	61.6	62.2	66.7	66.0	69.2	67.7	63.4	69.0	72.8	68.1	9
Oswego, N. Y	83.1	82.4	76.1	71.3	73.0	74.4	72.8	73.8	74.6	74.0	76.1	79.1	75.9	9
Palestine, Tex	75.2	73.2	69.8	70.2	73.8	74.3	73.3	75.2	74.0	71.0	73.6	73.9	73.1	9
Parkersburg, W. Va	79.0	79.2	76.6	70.2	70.6	72.9	71.4	76.1	79.0	77.9	79.0	77.6	75.8	8
Pensacola, Fla	80.7	82.0	78.8	78.6	75.2	78.1	80.6	80.0	77.7	72.0	77.8	80.7	78.5	9
Philadelphia, Pa	73.3	71.2	66.9	63.4	68.9	69.2	68.6	71.2	75.2	70.7	73.6	70.9	70.3	9
Pierre, S. Dak	78.8	77.8	73.7	63.7	60.0	63.7	59.3	57.1	56.9	62.6	72.4	76.3	66.9	9
Pittsburg, Pa	79.6	77.1	75.1	68.8	70.3	69.1	66.0	68.3	71.9	71.9	74.4	75.2	72.3	9
Port Angeles, Wash	86.5	85.5	80.5	81.1	80.0	81.3	79.1	81.4	83.9	88.0	89.3	88.3	83.7	8
Port Huron, Mich	80.4	79.3	75.7	71.4	71.0	74.9	71.3	73.9	77.3	75.7	77.9	77.9	75.6	9
Portland, Me	76.7	74.8	72.2	68.9	77.3	79.0	76.9	81.3	83.3	79.6	77.3	74.7	76.8	9
Portland, Oreg	86.1	82.8	75.0	72.4	68.9	69.0	63.6	67.1	72.3	80.6	85.2	87.2	75.8	9
Pueblo, Colo	53.5	49.9	43.8	37.6	43.5	39.9	47.6	49.4	41.9	43.9	50.0	53.6	46.2	8
Raleigh, N. C	74.4	74.3	70.1	66.9	71.9	73.3	77.6	80.4	79.0	73.6	76.1	72.9	74.2	9
Rapid City, S. Dak	67.4	67.8	67.2	57.9	56.7	57.2	52.3	50.0	50.6	56.2	63.3	62.8	59.1	9
Redbluff, Cal	78.3	68.2	68.3	61.9	56.8	43.7	35.6	35.3	43.6	51.6	60.7	82.6	57.2	9
Rochester, N. Y	80.9	79.9	77.1	67.8	68.6	69.1	67.3	70.7	75.2	75.6	76.2	77.2	73.8	9
Roseburg, Oreg	85.6	81.4	75.4	71.7	69.8	67.1	62.4	62.1	68.6	78.1	83.6	87.8	74.5	9
Sacramento, Cal	80.8	74.2	72.6	67.6	67.6	61.1	59.8	59.8	59.0	62.4	66.8	83.1	67.9	9
St. Louis, Mo	74.2	74.3	70.2	63.7	67.8	68.8	66.3	67.3	70.2	65.9	71.1	72.2	69.3	9
St. Paul, Minn	79.1	79.0	73.2	68.2	64.9	68.7	65.9	68.4	70.1	70.9	75.2	78.9	71.9	9
Salt Lake City, Utah	73.7	70.7	60.8	49.3	47.3	39.9	37.1	37.7	41.2	52.1	63.0	72.1	53.7	9
San Antonio, Tex	65.6	63.8	62.1	67.7	69.6	67.3	64.0	65.2	68.8	63.7	65.3	62.8	65.5	9
San Diego, Cal	71.7	72.1	76.6	75.3	76.3	77.3	79.7	79.3	78.1	78.2	71.0	72.2	75.6	9
Sandusky, Ohio	80.9	79.0	74.9	69.3	68.8	71.2	66.3	68.1	70.9	70.4	74.2	76.4	72.5	9
San Francisco, Cal	79.4	76.8	77.6	78.1	77.9	79.2	83.4	84.8	80.2	79.1	75.3	81.4	79.4	9
Santa Fe, N. Mex	54.3	54.1	43.9	32.9	33.7	28.7	45.8	47.9	44.8	47.4	47.8	56.0	44.8	9
Sault Ste. Marie, Mich	89.4	86.5	81.6	75.2	71.8	74.9	77.8	80.8	83.6	83.4	85.1	86.4	81.4	8
Savannah, Ga	77.2	78.3	74.1	74.4	74.3	78.6	81.3	83.4	84.1	78.2	80.6	80.0	78.7	9
Shreveport, La	76.8	73.0	69.1	70.9	74.3	76.3	76.2	77.0	75.3	71.6	75.0	73.8	74.1	9
Spokane, Wash	84.7	78.7	67.4	58.6	56.8	51.1	43.6	43.0	52.0	65.1	78.0	84.2	63.6	9
Springfield, Ill	76.9	76.7	71.6	67.2	69.6	70.0	67.6	69.0	71.6	69.0	74.2	75.3	71.6	9
Springfield, Mo	77.4	76.2	70.2	63.9	70.7	74.2	74.1	75.3	74.8	68.8	73.2	75.1	72.8	9
Tampa, Fla	82.3	83.7	79.6	75.4	76.6	83.0	83.1	83.7	84.9	80.7	81.9	83.4	81.5	7
Tatoosh Island, Wash	87.0	89.3	85.2	86.7	87.2	89.0	89.7	91.1	89.9	89.1	86.7	85.9	88.1	6
Toledo, Ohio	83.3	81.6	74.7	70.0	69.1	71.1	66.6	69.0	73.1	73.2	77.8	80.4	74.2	9
Walla Walla, Wash	84.3	77.7	68.3	57.6	55.6	51.1	40.4	38.4	50.7	66.0	71.8	83.2	62.1	9
Washington, D. C	73.7	70.9	67.4	64.3	71.3	72.7	74.2	75.4	78.8	73.4	73.8	71.4	72.3	9
Wichita, Kans	75.8	73.9	65.0	61.9	66.1	68.0	67.7	67.4	66.9	63.1	67.9	71.3	67.9	8
Williston, N. Dak	79.6	80.8	75.0	61.2	58.2	63.1	57.7	54.2	57.9	64.7	75.4	76.9	67.1	9
Wilmington, N. C	79.1	80.1	78.7	76.7	78.9	81.8	84.0	84.6	83.2	79.3	80.7	78.6	80.5	9
Yuma, Ariz	45.4	43.8	43.0	35.1	36.7	34.7	42.8	47.7	44.7	46.2	43.3	51.4	42.9	9

SUNSHINE, 1896.

The following tables give for 49 stations the percentages of hourly sunshine as derived from the automatic records made by two essentially different types of instruments, designated the thermometric recorder and the photographic recorder, respectively. The kind of instrument in use at each station is indicated by the letter T. (thermometric) or P. (photographic) at the right of the name of the station.

Both instruments have been described and illustrated in the preceding volumes of this series.

Neither of these instruments will record satisfactorily the duration of sunshine for about one hour after sunrise and about one hour before sunset, and on this account it has been considered necessary to apply to the record for these hours what has been designated a "twilight correction." The amount of this correction is found by noting the comparative clearness of the sky during the time that elapses between the hour of sunrise and the moment the instrument begins to record, and between the time the instrument ceases to act and the hour of sunset.

TABLE X.—SUNSHINE, 1896.

ATLANTA, GA. (T.).

[N. lat. 33° 45′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	30	29	32	51	57	65	61	59	51	43	39	30	.....	.....	152.6	48
February	.....	.....	38	34	52	67	70	72	78	79	72	70	58	45	.....	.....	201.3	63
March	.....	30	29	47	65	69	77	83	81	86	86	73	49	35	15	.....	240.8	65
April	.....	35	48	76	88	85	92	92	93	91	90	88	85	72	36	.....	311.0	79
May	27	40	72	91	96	96	98	96	97	97	98	97	94	81	58	50	374.0	86
June	33	43	70	88	95	96	96	96	95	86	80	88	79	63	34	21	335.9	78
July	17	2	6	10	24	36	50	55	62	60	57	52	46	16	1	4	148.4	34
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	43	37	48	56	68	85	76	80	74	69	61	53	43	45	.....	230.0	62
October	.....	100	51	48	48	58	60	67	63	65	57	46	42	52	.....	.....	193.3	55
November	.....	.....	52	47	50	51	53	53	51	52	46	42	44	33	.....	.....	152.8	49
December	.....	.....	33	42	42	48	54	64	73	67	63	61	62	33	.....	.....	176.5	57

BALTIMORE, MD. (T.).

[N. lat. 39° 18′.]

January	.....	.....	.....	23	25	39	47	48	49	52	45	39	34	30	.....	.....	122.7	40
February	.....	.....	39	32	35	41	53	57	50	47	43	48	44	47	.....	.....	140.6	45
March	.....	8	22	31	43	55	57	60	67	68	62	59	51	42	35	.....	191.5	52
April	.....	28	33	37	47	48	58	57	67	63	63	52	41	28	14	.....	186.2	47
May	28	29	29	29	34	46	55	46	40	33	25	23	25	21	19	6	142.8	32
June	40	39	39	41	46	53	55	52	66	59	49	41	38	31	27	26	199.6	45
July	50	45	41	49	54	63	63	61	66	67	62	55	37	25	11	11	219.5	48
August	.....	63	56	58	69	72	76	76	79	71	68	68	58	34	37	73	268.8	64
September	.....	43	39	39	52	60	67	71	65	65	60	57	41	34	45	.....	201.0	54
October	.....	0	26	30	40	53	56	56	58	61	49	37	28	25	.....	.....	153.9	44
November	.....	.....	22	13	14	26	42	44	43	47	30	16	9	.....	.....	.....	87.1	29
December	.....	.....	.....	20	23	31	46	56	57	44	37	23	20	.....	.....	.....	107.5	37
Sum	118	255	346	402	482	587	675	684	707	677	593	518	426	317	188	116	2,021.2	537
Percentage of possible.	39	32	35	34	40	49	56	57	59	56	49	43	36	32	27	29	168.4	45

BINGHAMTON, N. Y. (T.).

[N. lat. 42° 8′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	0	12	20	26	26	31	32	28	27	24	26	29	13	.....	.....	87.3	25
November	.....	.....	26	20	22	28	30	39	33	31	25	14	12	.....	.....	.....	76.8	26
December	.....	.....	.....	17	18	27	36	37	39	35	28	24	19	.....	.....	.....	82.6	29

BISMARCK, N. DAK. (P.).

[N. lat. 46° 47′.]

January	.....	.....	.....	17	21	27	37	33	38	39	29	29	20	.....	.....	.....	84.3	30
February	.....	.....	33	33	43	46	55	55	49	55	54	47	40	34	.....	.....	141.6	47
March	.....	19	39	47	50	65	68	68	57	56	50	40	41	24	17	.....	184.0	50
April	9	27	36	41	42	45	49	49	45	48	51	49	40	37	21	0	170.5	42
May	31	36	40	48	53	57	56	51	50	58	61	57	54	53	34	29	229.8	49
June	63	66	70	76	73	74	75	78	73	72	71	75	61	51	47	47	319.3	67
July	52	48	57	70	70	68	65	67	66	64	67	66	66	64	60	58	304.1	63
August	50	53	65	79	85	82	84	86	82	81	81	85	81	63	53	68	332.2	75
September	.....	29	38	55	59	59	61	61	56	59	61	63	61	60	64	.....	214.9	57
October	.....	0	51	51	54	64	64	63	63	66	61	54	56	69	.....	.....	199.4	59
November	.....	.....	0	6	13	28	34	38	39	41	38	33	23	.....	.....	.....	83.4	30
December	.....	.....	.....	38	42	45	53	51	49	55	45	40	41	.....	.....	.....	124.1	47
Sum	205	278	429	561	605	660	701	700	667	694	669	633	584	455	296	202	2,387.6	616
Percentage of possible	41	35	43	47	50	55	58	58	56	58	56	53	49	51	42	40	199.0	51

BOSTON, MASS. (T.).

[N. lat. 42° 21′.]

January	.....	.....	.....	36	44	51	53	58	57	61	61	54	42	46	.....	.....	155.0	52
February	.....	.....	58	45	46	44	51	61	62	64	56	56	53	53	.....	.....	166.6	54
March	.....	54	52	51	56	64	60	63	65	63	61	52	46	40	48	.....	208.1	56
April	.....	44	52	54	66	76	80	78	79	74	62	54	47	37	42	.....	245.5	61
May	33	43	45	50	59	75	80	81	72	71	60	61	52	44	36	26	262.8	58
June	40	42	47	50	59	61	65	71	72	69	67	59	49	53	57	39	260.1	57
July	20	35	37	46	52	56	60	60	65	68	63	54	53	46	44	25	235.3	51
August	33	56	63	61	61	67	77	76	75	65	59	52	50	52	39	15	261.8	61
September	.....	30	41	51	53	52	64	63	59	60	54	49	45	36	10	.....	191.4	51
October	.....	0	31	44	36	43	47	42	40	41	35	39	32	13	.....	.....	131.8	38
November	.....	.....	40	29	37	37	42	47	40	47	45	26	15	.....	.....	.....	110.2	37
December	.....	.....	.....	44	62	71	71	76	78	72	59	53	38	.....	.....	.....	183.5	64
Sum	126	304	466	561	631	697	750	776	764	755	682	609	522	420	276	105	2,412.1	640
Percentage of possible	32	38	47	47	53	58	62	65	64	63	57	51	44	42	39	26	201.0	53

BUFFALO, N. Y. (T.).

[N. lat. 42° 53′.]

January	.....	.....	.....	0	10	13	21	31	33	29	26	24	12	22	.....	.....	61.7	21
February	.....	.....	7	10	20	37	45	52	52	48	43	36	17	13	.....	.....	106.4	35
March	.....	21	17	25	44	54	67	67	68	70	68	64	46	37	32	.....	195.2	53
April[1]	86	40	38	39	44	60	62	68	75	77	59	48	45	33	16	.....	146.0	51
May[2]	33	36	36	37	50	60	61	67	71	70	74	81	63	49	48	38	205.8	56
June[3]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	8	20	59	73	81	82	85	85	91	88	85	83	76	67	47	27	322.4	69
August	0	15	27	56	75	90	91	95	91	83	88	84	72	62	54	47	304.1	71
September	.....	33	29	42	61	63	68	67	66	69	65	57	52	40	57	.....	209.8	56
October	.....	0	27	35	40	45	53	55	55	53	48	39	33	22	.....	.....	149.3	44
November	.....	.....	9	3	10	26	31	34	38	36	23	14	11	.....	.....	.....	67.1	23
December	.....	.....	.....	0	1	11	16	20	28	35	26	7	0	.....	.....	.....	44.5	16

[1] Record for 21 days. [2] Record for 25 days. [3] Instrument broken.

CHATTANOOGA, TENN. (T).

[N. lat. 35° 4′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November	.....	.....	17	16	25	39	48	53	57	54	50	49	33	50	.....	.....	128.5	41
December	.....	.....	18	22	24	36	52	55	61	58	55	52	49	.....	.....	.....	141.0	46

CHEYENNE, WYO. (P.).

[N. lat. 41° 8′.]

January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	30	58	70	77	82	87	87	76	64	58	55	54	39	18	.....	263.2	62
September	.....	44	48	51	56	65	67	67	69	65	69	63	60	51	57	.....	226.5	61
October	.....	82	69	76	82	90	90	85	84	78	79	70	59	47	.....	.....	267.0	78
November	.....	.....	62	52	63	66	75	74	76	73	65	57	58	.....	.....	.....	196.4	66
December	.....	.....	.....	49	62	76	75	63	67	60	50	51	52	.....	.....	.....	173.6	60

CHICAGO, ILL. (T.).

[N. lat. 41° 53.′]

January	.....	.....	.....	18	17	29	40	51	49	45	34	31	27	31	.....	.....	102.6	35
February	.....	.....	18	24	49	63	69	75	69	62	56	47	37	52	.....	.....	168.2	55
March	.....	69	41	46	62	71	79	83	84	86	70	66	53	34	26	.....	239.6	65
April	.....	32	40	57	63	69	70	77	78	81	79	78	64	39	31	.....	251.0	63
May	46	46	66	84	88	94	91	90	95	93	92	86	85	57	42	36	351.2	73
June	55	63	71	81	94	97	97	96	96	95	95	88	87	81	70	57	382.9	84
July	34	37	45	51	67	76	81	75	82	85	84	77	73	69	51	51	305.7	66
August	33	52	66	86	91	92	94	96	93	93	96	95	90	62	46	35	354.0	82
September	.....	34	30	45	49	65	66	73	77	71	67	58	49	31	34	.....	208.7	56
October	.....	0	42	44	57	64	80	78	78	75	72	56	47	58	.....	.....	216.9	63
November	.....	.....	28	23	28	37	46	45	45	36	35	34	34	.....	.....	.....	106.7	36
December	.....	.....	.....	23	18	31	32	37	33	32	25	18	21	.....	.....	.....	78.3	23
Sum	168	333	447	582	683	788	845	876	879	854	805	734	667	509	300	179	2,765.8	711
Percentage of possible.	42	42	45	48	57	66	70	73	73	71	67	61	56	50	43	45	230.5	59

CINCINNATI, OHIO (T.).

[N. lat. 39° 6′.]

January	.....	.....	.....	16	21	27	40	43	45	40	38	35	29	20	.....	.....	102.4	34
February	.....	.....	52	42	43	46	54	62	61	61	54	33	27	30	.....	.....	147.9	47
March	.....	33	45	47	46	51	55	57	60	62	50	42	42	40	26	.....	183.7	49
April	.....	41	46	59	79	89	91	90	88	91	89	86	83	80	66	.....	311.7	79
May	48	61	55	67	84	89	92	94	93	92	88	88	88	77	64	42	355.4	80
June	53	53	58	74	84	89	92	92	93	99	96	90	83	84	73	62	363.1	81
July	56	58	63	70	82	90	96	96	98	93	88	83	82	81	64	54	365.0	81
August	.....	67	66	70	85	88	91	89	91	88	92	92	87	78	68	73	350.0	83
September	.....	68	60	63	66	66	70	69	65	80	77	74	70	51	65	.....	252.4	68
October	.....	64	69	68	73	75	76	75	75	74	74	70	58	57	.....	.....	248.2	71
November	.....	.....	26	21	23	30	38	53	59	49	46	33	28	.....	.....	.....	114.4	38
December	.....	.....	.....	27	28	35	35	45	50	47	41	33	34	.....	.....	.....	110.9	38
Sum	157	445	540	624	714	775	830	865	878	876	833	759	711	598	426	231	2,903.1	749
Percentage of possible.	52	56	54	52	60	65	69	72	73	73	69	63	59	60	61	58	241.9	62

CLEVELAND, OHIO (P[1]).

[N. lat. 41° 30′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	4	5	18	26	25	31	33	30	29	4	15	.....	.....	59.8	20
February	.....	.....	48	22	31	34	36	34	35	33	28	20	8	6	.....	.....	84.4	27
March	.....	23	33	35	46	55	57	53	49	45	48	38	29	12	17	.....	154.1	42
April	.....	51	53	56	58	62	57	56	62	68	67	64	54	44	32	.....	227.4	57
May	50	41	48	59	73	82	75	49	76	71	72	69	69	54	32	29	277.3	61
June	33	30	51	60	66	69	60	64	72	80	81	86	74	69	51	47	288.8	63
July	46	44	50	63	64	62	61	64	64	69	67	72	60	54	39	44	270.2	59
August	50	50	38	45	62	70	68	72	75	74	76	77	76	64	53	62	276.4	64
September	.....	36	38	44	52	56	44	51	51	52	57	57	50	37	47	.....	182.5	49
October	.....	0	39	41	53	63	67	68	66	74	71	55	53	48	.....	.....	203.2	50
November	.....	.....	19	9	19	28	30	37	37	34	26	18	22	.....	.....	.....	76.8	26
December	.....	.....	.....	2	5	27	31	31	32	31	25	14	9	.....	.....	.....	62.2	22
Sum	179	275	417	440	534	626	612	604	650	664	648	590	508	403	271	182	2,163.1	549
Percentage of possible	45	34	42	37	44	52	51	50	54	55	54	49	42	40	39	46	180.3	46

[1]Thermometric after October 17.

COLUMBUS, OHIO (T.).

[N. lat. 39° 58′.]

January	.....	.....	.....	3	6	23	40	37	38	35	30	24	8	8	.....	.....	75.3	25
February	.....	.....	26	19	33	38	51	52	55	51	43	31	16	15	.....	.....	116.2	37
March	.....	33	31	33	49	55	60	74	72	57	56	51	33	20	13	.....	182.2	49
April	.....	36	36	48	68	74	76	81	87	79	74	69	55	36	24	.....	245.9	62
May	22	29	37	50	59	66	76	81	86	85	70	59	54	42	23	8	255.6	57
June	20	21	38	55	64	76	75	58	57	70	69	70	63	46	28	26	243.4	54
July	8	13	21	48	57	65	73	72	70	69	63	63	50	30	10	9	220.0	48
August	.....	20	20	44	69	75	75	75	79	71	75	66	54	21	15	43	234.0	55
September	.....	24	23	24	39	53	60	61	59	50	48	33	15	7	9	.....	144.5	39
October	.....	0	22	26	41	66	69	70	71	70	65	56	38	23	.....	.....	185.5	54
November	.....	.....	18	14	16	31	33	36	35	31	26	30	28	.....	.....	.....	83.2	28
December	.....	.....	.....	0	2	12	27	32	32	34	30	27	25	.....	.....	.....	66.0	23
Sum	50	176	272	364	503	634	715	729	741	702	649	579	439	248	122	86	2,051.8	531
Percentage of possible	17	22	27	30	42	53	60	61	62	58	54	48	37	25	17	22	171.0	44

DENVER, COLO. (P.).

[N. lat. 39° 45′.]

January	.....	.....	.....	72	78	80	83	88	86	80	79	79	70	46	.....	.....	239.9	80
February	.....	.....	86	73	73	79	73	71	75	79	73	71	76	67	.....	.....	230.2	74
March	.....	58	43	67	76	81	85	81	75	73	65	61	51	29	33	.....	243.2	66
April	.....	60	71	80	84	87	85	87	82	81	76	74	73	62	38	.....	301.1	76
May	31	40	49	58	61	68	69	69	66	61	64	56	63	52	55	50	257.7	58
June	73	75	84	87	92	93	91	76	59	55	52	54	50	49	31	25	299.1	67
July	47	47	73	80	79	80	88	85	80	63	55	50	45	42	29	28	285.4	63
August	.....	54	60	74	79	84	91	81	70	59	63	48	47	34	28	50	267.0	63
September	.....	23	41	71	78	78	76	71	68	73	73	68	56	23	23	.....	236.3	63
October	.....	100	45	59	63	72	79	76	86	83	77	71	57	54	.....	.....	240.8	70
November	.....	.....	82	66	71	74	82	90	83	84	85	82	83	.....	.....	.....	239.6	80
December	.....	.....	.....	56	64	72	77	68	69	76	76	64	62	.....	.....	.....	201.2	69
Sum	151	457	634	838	898	948	979	943	899	867	838	778	723	458	237	153	3,041.5	829
Percentage of possible	50	57	63	70	75	79	82	79	75	72	70	65	60	46	34	38	253.5	69

DES MOINES, IOWA (T.).

[N. lat. 41° 35′.]

January	.....	.....	.....	29	37	45	55	54	55	58	55	51	46	15	.....	.....	145.3	49
February	.....	.....	73	51	49	61	70	72	69	68	69	57	57	55	.....	.....	190.9	62
March	.....	69	54	41	41	46	49	51	48	53	56	58	56	55	63	.....	188.5	51
April	.....	41	48	58	67	70	77	80	77	78	75	71	62	48	41	.....	259.7	65
May	35	39	45	54	61	69	73	75	75	76	73	65	61	55	56	56	279.4	62
June	40	40	41	51	59	70	74	78	75	71	64	58	56	60	64	67	277.5	61
July	65	66	65	58	62	66	66	73	64	73	61	53	51	55	60	64	288.5	62
August	67	52	53	55	54	64	68	70	70	76	73	65	56	55	55	69	266.1	62
September	.....	38	44	45	55	58	57	61	60	55	49	46	46	46	49	.....	192.4	51
October	.....	0	73	75	75	78	81	84	82	80	70	69	67	71	.....	.....	256.0	76
November	.....	.....	34	42	42	43	46	52	57	49	44	36	28	.....	.....	.....	190.7	44
December	.....	.....	.....	43	44	39	48	51	55	50	47	50	49	.....	.....	.....	135.7	48
Sum	207	345	530	602	646	709	764	801	787	787	736	679	635	515	388	256	2,613.7	693
Percentage of possible	51	43	53	50	54	59	64	67	66	66	61	57	53	52	55	64	217.8	58

DETROIT, MICH. (T.).

[N. lat. 42° 20′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	22	25	37	43	50	42	36	33	27	20	23	.....	.....	101.1	34
February	.....	.....	36	30	26	45	52	47	56	52	42	31	25	28	.....	.....	123.2	40
March	.....	85	55	52	57	69	69	70	71	69	64	50	33	31	39	.....	213.2	57
April	.....	49	49	55	64	74	78	69	73	70	73	70	58	38	35	.....	248.3	62
May	43	45	63	79	86	91	94	97	98	93	88	84	81	74	59	44	358.7	79
June	40	40	57	67	74	83	82	84	91	91	86	80	73	61	48	45	320.2	70
July	29	29	44	58	72	72	75	79	83	83	79	74	64	63	43	42	295.1	64
August	50	34	40	61	72	75	80	78	84	86	87	82	69	51	41	50	290.5	68
September	.....	36	37	36	39	53	74	81	78	71	71	64	54	45	39	.....	215.7	58
October	.....	0	47	52	64	65	69	76	76	74	62	53	37	41	.....	.....	210.5	61
November	.....	.....	28	27	34	42	45	38	43	41	32	25	21	.....	.....	.....	104.3	35
December	.....	.....	.....	22	21	31	42	45	46	46	30	23	21	.....	.....	.....	96.4	34
Sum	162	318	456	561	634	737	803	814	841	812	747	663	556	455	304	181	2,577.2	662
Percentage of possible.	40	40	46	47	53	61	67	68	70	68	62	55	46	46	43	45	214.8	55

DODGE CITY, KANS. (P.).

[N. lat. 37° 45′.]

January	.....	.....	.....	49	57	57	59	62	61	61	51	52	45	33	.....	.....	169.4	55
February	.....	.....	74	76	79	79	81	79	76	73	71	72	68	66	.....	.....	234.7	75
March	.....	67	64	75	80	82	77	74	69	71	68	69	65	44	28	.....	258.1	69
April	.....	46	54	60	68	78	75	76	75	78	70	70	68	61	56	.....	268.6	68
May	31	47	47	55	59	59	63	67	74	79	81	81	66	54	57	61	278.2	63
June	64	67	76	82	87	87	83	88	80	88	88	89	83	61	41	33	341.8	80
July	36	51	61	65	65	70	73	75	71	71	70	68	61	60	43	38	285.7	63
August	.....	53	69	85	87	89	91	86	84	91	92	84	77	57	26	71	327.3	78
September	.....	53	56	63	62	69	72	71	69	71	67	70	67	60	45	.....	245.6	66
October	.....	90	66	72	72	75	77	77	76	75	75	70	61	63	.....	.....	250.7	72
November	.....	.....	37	45	55	57	64	66	71	73	76	66	50	.....	.....	.....	187.2	62
December	.....	.....	0	48	60	68	75	74	70	78	73	67	42	.....	.....	.....	197.2	66
Sum	131	474	604	775	831	870	890	895	876	909	882	858	753	559	296	203	3,044.5	817
Percentage of possible.	44	59	55	65	69	72	74	75	73	76	74	72	63	56	42	51	253.7	68

DUBUQUE, IOWA (T.).

[N. lat. 42° 30′.]

January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	19	22	51	72	82	92	96	94	91	88	84	79	78	66	51	45	325.4	71
July	5	11	42	62	67	82	85	90	87	86	87	83	77	72	61	54	317.2	69
August[1]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September[1]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October[2]	.....	.....	12	22	42	57	72	70	68	65	65	53	36	27	.....	.....	149.4	53
November	.....	.....	25	28	28	24	30	35	32	33	26	27	25	.....	.....	.....	82.5	28
December	.....	.....	.....	15	13	17	29	34	35	29	29	24	21	.....	.....	.....	71.2	25

[1] Instrument broken. [2] For 26 days.

EASTPORT, ME. (P.).

[N. lat. 44° 54′.]

January	.....	.....	.....	39	40	53	59	61	54	62	59	53	51	100	.....	.....	154.2	54
February	.....	.....	42	37	31	39	47	35	32	41	37	38	38	40	.....	.....	113.6	37
March	.....	31	39	40	45	47	51	51	45	44	44	46	52	48	57	.....	171.3	46
April	40	43	44	47	56	64	57	55	57	57	61	57	52	52	45	80	218.2	54
May	40	48	55	62	70	65	66	68	66	67	67	68	64	57	44	30	278.3	60
June	29	41	63	63	73	75	70	67	65	67	69	67	57	51	42	41	277.7	60
July	19	23	34	42	49	59	60	62	62	64	64	58	60	52	43	43	238.5	51
August	32	31	40	44	46	49	59	65	65	67	62	60	64	46	34	43	228.0	52
September	.....	20	25	36	36	39	45	47	50	50	56	48	47	33	15	.....	156.5	42
October	.....	0	18	24	33	41	38	33	40	46	45	42	24	18	.....	.....	119.2	35
November	.....	.....	24	14	23	33	36	33	27	26	29	28	23	.....	.....	.....	78.8	27
December	.....	.....	.....	25	33	53	58	53	60	60	65	56	50	.....	.....	.....	144.2	53
Sum	160	237	384	473	535	617	646	630	623	651	658	621	582	497	280	237	2,178.5	571
Percentage of possible.	32	30	38	39	45	51	54	52	52	54	55	52	48	50	40	47	181.5	48

EUREKA, CAL. (P.).

[N. lat. 40° 48′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	16	19	23	25	28	32	29	29	28	16	24	.....	.....	74.7	25
February	.....	.....	13	41	48	57	64	72	76	73	68	63	50	33	.....	.....	183.5	59
March	.....	42	16	31	45	53	52	58	62	57	53	51	35	27	28	.....	167.9	45
April	.....	9	22	30	40	41	44	47	52	50	51	47	39	29	13	.....	152.2	38
May	21	24	35	51	56	59	65	65	74	72	63	59	58	46	30	31	238.3	53
June	20	22	23	36	54	63	63	66	77	78	73	73	75	75	66	30	261.4	58
July	0	4	10	15	23	29	42	58	61	65	66	59	45	34	27	15	169.6	37
August	0	0	4	7	12	17	27	36	48	51	45	40	41	37	16	0	117.1	27
September	.....	15	18	29	40	50	57	60	64	63	61	54	48	41	41	.....	173.8	48
October	.....	0	26	32	35	44	49	50	51	59	50	49	45	41	.....	.....	154.7	45
November	.....	.....	33	29	39	43	48	51	53	50	45	46	26	.....	.....	.....	128.6	43
December	.....	.....	.....	20	25	24	24	32	40	41	33	21	9	.....	.....	.....	80.2	28
Sum	41	116	200	337	436	503	560	623	690	688	637	590	487	387	221	76	1907.0	506
Percentage of possible	10	14	20	28	36	42	47	52	58	57	53	49	41	39	32	19	158.9	42

FRESNO, CAL. (T.).

[N. lat. 36° 43′.]

January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	81	81	79	84	89	91	93	95	97	97	94	94	96	93	88	86	405.3	91
August	.....	80	77	80	87	90	96	93	92	91	92	88	85	82	84	100	366.2	87
September	.....	82	77	77	80	86	97	96	97	93	94	91	82	80	98	.....	326.5	88
October	.....	50	74	75	85	85	86	88	96	95	90	83	64	70	.....	.....	290.5	84
November	.....	.....	58	50	54	62	71	76	79	77	76	68	62	100	.....	.....	205.5	67
December	.....	.....	20	20	27	36	55	63	60	56	64	63	57	.....	.....	.....	150.0	50

GALVESTON, TEX. (P.).

[N. lat. 29° 18′.]

January	.....	.....	33	41	46	45	50	49	50	45	51	48	36	19	.....	.....	146.9	45
February	.....	.....	30	49	53	57	64	61	61	62	58	55	58	52	.....	.....	182.9	56
March	.....	14	22	34	48	58	59	55	62	63	65	55	58	26	10	.....	187.2	50
April	.....	12	22	31	50	54	58	55	60	62	54	53	39	23	4	.....	170.6	44
May	.....	19	63	79	82	84	86	86	87	83	83	81	78	65	51	.....	313.5	74
June	.....	50	82	91	94	95	98	95	99	99	99	94	90	85	63	50	369.3	88
July	.....	49	71	73	80	84	91	95	95	95	96	91	88	88	65	25	354.5	83
August	.....	12	69	85	84	81	83	88	82	86	87	92	89	78	62	.....	325.8	80
September	.....	13	36	72	77	77	76	83	78	84	84	83	75	52	16	.....	264.0	71
October	.....	50	32	45	60	64	62	63	65	70	61	60	61	34	.....	.....	204.5	57
November	.....	.....	13	20	38	41	50	53	58	65	51	47	33	21	.....	.....	140.0	44
December	.....	.....	30	43	65	67	69	70	68	71	75	70	55	34	.....	.....	205.6	64
Sum	.....	213	503	663	777	807	846	853	865	885	864	829	760	577	271	75	2,864.8	756
Percentage of possible	.....	27	42	55	65	67	70	71	72	74	72	69	63	48	39	38	238.7	63

HELENA, MONT. (P.).

[N. lat. 46° 34′.]

January	.....	.....	.....	21	20	35	45	45	51	54	48	38	37	.....	.....	.....	114.2	41
February	.....	.....	17	37	39	48	53	48	43	52	56	47	47	47	.....	.....	140.3	47
March	.....	44	31	35	46	49	59	56	58	58	60	55	51	48	42	.....	187.5	51
April	36	31	42	59	58	67	63	59	57	53	49	44	51	57	62	71	220.0	54
May	39	35	47	50	61	60	64	55	59	55	62	55	38	35	25	31	229.0	49
June	73	77	81	88	84	84	81	72	61	64	65	63	63	61	60	58	337.5	71
July	61	62	70	70	78	81	82	79	76	81	77	73	72	71	64	60	348.3	73
August	56	68	67	70	73	77	75	75	71	71	75	71	68	66	68	67	311.4	71
September	.....	47	53	54	60	58	63	58	59	70	68	64	59	60	57	.....	226.2	60
October	.....	0	52	58	63	72	72	67	66	73	73	66	72	73	.....	.....	226.9	67
November	.....	.....	35	27	30	38	43	48	34	42	42	24	26	.....	.....	.....	100.7	36
December	.....	.....	.....	28	29	37	43	39	50	48	38	34	36	.....	.....	.....	104.1	39
Sum	265	364	495	597	641	706	743	701	685	721	713	634	620	518	378	287	2,546.1	659
Percentage of possible	53	46	50	50	53	59	62	58	57	60	59	53	52	58	54	57	212.2	55

INDIANAPOLIS, IND. (T.).

[N. lat. 39° 46′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November	.....	.....	24	17	38	53	59	61	68	63	57	51	35	.....	.....	.....	149.7	50
December	.....	.....	.....	25	38	51	66	70	70	66	60	41	25	.....	.....	.....	154.1	53

KANSAS CITY, MO. (P.).

[N. lat. 39° 5′.]

January	.....	.....	.....	31	28	42	36	34	37	41	38	20	30	10	.....	.....	102.1	34
February	.....	.....	65	46	51	52	56	55	51	53	49	41	33	52	.....	.....	153.4	49
March	.....	58	50	44	46	51	59	56	56	56	56	58	48	50	70	.....	196.1	53
April	.....	34	42	50	54	56	57	55	51	55	61	53	46	43	34	.....	199.1	50
May	43	41	52	60	54	58	52	52	56	63	60	64	55	35	28	28	220.7	52
June	34	32	46	47	54	56	56	56	55	61	70	69	70	66	54	66	251.0	56
July	58	45	55	65	68	72	70	67	52	61	72	68	61	50	55	58	277.8	61
August	.....	48	60	65	72	77	79	79	73	81	82	80	72	68	68	82	306.0	72
September	.....	33	36	43	50	56	61	66	62	58	59	55	48	41	49	.....	195.7	52
October	.....	100	58	65	75	78	75	78	76	76	75	76	72	83	.....	.....	255.4	74
November	.....	.....	49	46	46	52	56	58	58	58	53	52	50	.....	.....	.....	159.3	53
December	.....	.....	.....	44	45	52	55	51	50	51	46	35	51	.....	.....	.....	141.4	46
Sum	130	391	513	606	643	702	712	707	677	714	721	671	636	498	358	234	2,467.0	654
Percentage of possible.	43	49	51	50	54	58	59	59	56	60	60	56	53	50	51	58	205.6	54

LITTLE ROCK, ARK. (T.).

[N. lat. 34° 45′.]

January	.....	.....	.....	19	25	36	43	45	50	52	47	42	42	27	.....	.....	126.0	40
February	.....	.....	62	54	62	69	74	75	73	73	63	63	58	59	.....	.....	208.9	66
March	.....	10	25	29	38	51	55	62	64	59	54	55	45	35	32	.....	177.3	48
April	.....	34	34	43	65	82	90	89	89	87	85	86	78	59	63	.....	285.1	73
May	41	57	57	67	77	93	97	95	89	88	95	91	80	70	47	50	342.7	79
June	57	57	63	81	86	86	91	90	90	83	84	81	78	73	52	46	336.3	77
July	52	60	65	75	88	94	99	99	96	92	89	89	80	77	68	54	368.7	83
August	.....	77	76	80	86	90	94	92	94	94	94	92	85	65	54	0	352.1	84
September	.....	71	67	68	70	75	83	82	81	76	78	72	66	62	67	.....	272.2	73
October	.....	67	57	56	66	66	73	78	78	85	80	72	56	45	.....	.....	241.1	69
November	.....	.....	33	36	40	53	60	63	61	59	56	44	41	50	.....	.....	157.3	51
December	.....	.....	55	58	66	79	80	83	83	81	75	67	64	.....	.....	.....	225.4	74
Sum	150	433	599	666	769	874	939	953	948	929	900	854	773	632	383	160	3,093.1	817
Percentage of possible.	50	54	50	56	64	73	78	79	79	77	75	71	64	57	55	40	257.8	68

LOS ANGELES, CAL. (P.).

[N. lat. 34° 3′.]

January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	38	47	59	71	72	79	79	81	90	93	93	80	78	.....	.....	270.7	77
November	.....	.....	54	60	75	79	83	82	68	72	75	76	61	100	.....	.....	226.3	72
December	.....	.....	83	67	76	81	68	73	82	77	79	64	54	.....	.....	.....	222.3	72

LOUISVILLE, KY. (T.).

[N. lat. 38° 15′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	16	16	23	38	44	42	43	34	26	25	31	.....	.....	94.4	31
February	.....	.....	34	33	42	46	56	57	53	46	48	41	44	50	.....	.....	145.8	46
March	.....	25	27	36	43	62	62	60	65	70	65	62	51	48	48	.....	202.4	54
April	.....	47	54	66	81	89	88	95	97	94	94	91	76	71	72	.....	320.9	81
May	45	59	60	60	75	85	82	80	83	88	87	84	73	68	56	43	325.6	74
June	60	60	65	61	75	81	87	78	87	85	82	78	72	61	59	61	323.2	73
July	62	65	65	68	72	83	88	88	89	90	87	81	69	61	52	49	336.3	75
August	.....	71	71	77	85	91	89	93	94	97	94	94	83	74	72	71	358.3	85
September	.....	52	50	51	51	59	64	64	67	68	67	66	53	45	51	.....	218.1	58
October	.....	50	68	70	70	75	83	85	85	76	75	69	65	64	.....	.....	258.7	74
November	.....	.....	29	28	33	39	53	51	58	51	40	39	37	.....	.....	.....	129.8	43
December	.....	.....	100	43	43	59	63	68	70	71	51	44	42	.....	.....	.....	166.2	56
Sum	167	429	623	609	686	792	853	862	890	879	824	775	690	573	410	224	2,879.7	750
Percentage of possible.	56	54	57	51	57	66	71	72	74	73	69	65	58	57	59	56	240.0	62

MINNEAPOLIS, MINN. (T.).

[N. lat. 44° 59′.]

January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	60	66	73	80	82	85	88	88	85	73	70	71	69	67	62	43	342.4	73
July	23	29	55	66	77	78	76	82	84	85	82	76	70	64	36	24	306.7	65
August	42	33	45	62	74	82	92	95	89	88	84	75	73	55	45	59	308.3	71
September	.....	29	34	49	44	45	54	61	71	72	64	60	49	45	31	.....	199.1	53
October	.....	0	43	49	60	70	71	69	67	65	59	54	56	67	.....	.....	206.5	61
November	.....	.....	3	10	16	35	39	46	41	36	28	22	15	.....	.....	.....	84.2	29
December	.....	.....	.....	13	16	30	32	35	30	29	26	21	20	.....	.....	.....	71.9	26

NEW ORLEANS, LA. (T.).

[N. lat. 29° 58′.]

January	.....	.....	33	29	30	39	43	51	51	52	43	45	42	42	.....	.....	137.5	42
February	.....	.....	40	40	51	59	63	65	61	62	64	63	56	56	.....	.....	186.1	58
March	.....	0	25	28	36	48	57	59	60	65	68	58	54	26	17	.....	180.7	49
April	.....	39	33	42	56	67	67	64	65	66	69	47	36	13	7	.....	194.1	50
May	.....	72	63	76	83	81	80	81	82	70	71	65	57	32	13	.....	234.0	67
June	33	37	57	67	67	82	84	78	79	76	69	58	56	48	16	12	232.1	62
July	.....	44	57	83	79	73	72	75	79	79	64	63	67	56	28	36	232.9	66
August	.....	15	40	82	83	85	84	83	88	70	66	64	52	34	5	.....	259.1	62
September	.....	28	33	60	70	78	84	83	78	70	67	60	44	21	22	.....	227.2	61
October	.....	50	31	29	39	48	52	47	50	50	39	30	20	24	.....	.....	138.4	39
November	.....	.....	25	23	31	43	49	45	42	45	35	28	20	20	.....	.....	113.3	35
December	.....	.....	24	34	38	37	49	60	63	63	62	53	46	52	.....	.....	158.6	50
Sum	33	285	461	593	663	740	784	791	793	768	717	634	550	424	108	48	2,424.0	642
Percentage of possible.	33	36	38	49	55	62	65	66	66	64	60	53	46	35	15	24	202.0	54

NEW YORK, N. Y. (T.).

[N. lat. 40° 43′.]

January[1]	.....	.....	.....	20	38	51	57	62	52	49	48	43	29	29	.....	.....	143.8	48
February	.....	.....	11	27	41	55	59	64	66	60	55	50	43	29	.....	.....	156.0	50
March	.....	33	35	39	49	56	56	59	58	62	63	64	63	54	37	.....	203.5	55
April	.....	28	37	54	61	63	65	65	69	69	68	74	55	40	27	.....	226.7	57
May	18	24	36	50	58	63	69	70	70	60	56	52	41	29	22	24	219.6	49
June	28	33	42	56	60	56	62	64	67	70	61	58	54	40	26	21	232.6	51
July	19	23	35	50	56	59	68	71	79	75	71	63	54	45	23	15	243.6	53
August	0	19	32	54	61	67	72	75	74	81	73	62	62	48	35	40	251.3	59
September	.....	12	13	27	45	66	68	67	67	65	60	51	45	29	38	.....	184.0	49
October[2]	.....	0	7	31	41	46	48	49	41	36	36	29	15	8	.....	.....	102.8	34
November	.....	.....	28	28	47	59	61	62	61	58	53	48	32	.....	.....	.....	151.5	51
December	.....	.....	.....	39	52	68	79	78	82	81	65	55	35	.....	.....	.....	186.5	65
Sum	65	172	276	475	609	709	764	786	786	766	709	649	528	351	208	100	2,308.9	621
Percentage of possible.	16	22	28	40	51	59	64	66	66	64	59	54	44	35	30	25	192.0	52

[1] For 25 days only.

[2] For 27 days only.

NORTHFIELD, VT. (P.).

[N. lat. 44° 10′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	106.9	35
February	.....	.....	44	26	27	44	43	42	34	36	36	34	29	31	.....	.....	148.7	40
March	.....	47	33	35	43	44	53	46	36	39	41	41	35	30	50	.....	218.7	54
April	67	48	52	63	61	59	63	59	53	58	54	57	54	38	32	100	237.7	52
May	22	27	48	63	58	55	57	58	57	64	60	60	64	49	31	19	236.5	51
June	16	30	50	57	64	64	57	56	52	60	57	59	60	41	40	39	208.9	45
July	3	10	34	49	55	53	58	57	56	63	57	55	51	37	23	23	261.0	60
August	53	42	48	66	72	69	72	66	65	65	64	64	60	50	38	41	162.2	43
September	.....	10	12	27	38	55	57	57	48	55	54	48	49	34	35	.....	121.5	36
October	.....	0	15	18	35	43	48	46	44	41	41	38	22	16	.....	.....	64.2	22
November	.....	.....	17	17	20	24	22	24	27	29	28	13	12	.....	.....	.....	113.1	41
December	.....	.....	.....	25	31	47	46	44	52	48	45	27	27	.....	.....	.....		

OMAHA, NEBR. (P.).

[N. lat. 41° 16′.]

January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	64	36	48	54	59	62	65	65	69	80	83	71	65	57	53	80	266.8	62
September[1]	.....	40	45	59	65	66	68	69	66	64	63	64	59	50	49	.....	211.5	61
October	.....	0	44	53	71	73	75	74	75	76	68	63	51	39	.....	.....	224.7	65
November	.....	.....	35	27	30	53	55	60	45	66	66	60	55	.....	.....	.....	152.7	51
December	.....	.....	.....	30	31	42	56	53	51	56	53	46	42	.....	.....	.....	134.0	47

[1] For 28 days.

PHILADELPHIA, PA. (T.).

[N. lat. 39° 57′.]

January	.....	.....	.....	55	53	60	70	70	64	60	56	49	38	25	.....	.....	173.1	57
February	.....	.....	38	44	49	61	62	67	68	63	61	51	47	46	.....	.....	175.5	56
March	.....	58	61	54	54	61	63	71	71	72	73	71	64	56	30	.....	236.7	64
April	.....	52	52	51	68	77	82	83	82	84	83	84	77	60	39	.....	282.1	71
May	36	37	37	52	61	72	82	78	82	81	84	79	67	57	43	35	287.7	64
June	47	47	60	64	67	73	79	80	78	79	83	78	66	59	42	37	298.6	67
July	54	58	58	64	71	84	89	94	92	91	88	87	79	59	35	27	333.3	73
August	60	67	71	79	86	90	94	94	93	94	90	85	79	71	53	71	349.6	82
September	.....	61	50	54	63	68	69	69	68	79	80	72	57	46	48	.....	239.6	64
October	.....	82	38	47	46	53	55	51	55	51	46	40	36	27	.....	.....	161.1	47
November	.....	.....	43	37	44	51	64	64	60	56	55	51	48	.....	.....	.....	158.2	53
December	.....	.....	.....	58	66	73	80	82	81	78	62	60	52	.....	.....	.....	204.5	70
Sum	197	462	508	659	728	823	889	903	894	888	861	807	710	506	290	170	2,900.0	768
Percentage of possible.	49	58	51	55	61	69	74	75	74	74	72	67	59	51	41	42	241.7	64

PHŒNIX, ARIZ. (P.).

[N. lat. 33° 28′.]

January	.....	.....	78	81	82	87	87	78	75	80	81	68	60	54	.....	.....	245.2	77
February	.....	.....	91	89	96	95	94	95	91	89	84	80	74	62	.....	.....	278.2	87
March	.....	67	79	75	77	85	85	85	81	78	74	76	64	49	45	.....	280.6	75
April	.....	77	94	97	98	97	96	95	89	91	94	91	88	84	69	.....	356.1	91
May	73	81	87	92	88	93	93	85	86	92	91	90	91	90	83	100	381.6	89
June	96	97	97	100	100	100	100	100	100	100	100	97	94	94	94	100	420.5	98
July	57	56	62	66	74	75	75	82	85	88	85	83	80	63	52	30	319.0	73
August	.....	66	78	85	88	91	90	87	93	89	89	87	88	80	77	.....	353.9	85
September	.....	59	67	63	83	88	90	91	90	90	91	92	80	68	49	.....	304.4	82
October	.....	100	79	82	82	81	86	82	86	83	80	74	75	77	.....	.....	284.1	81
November	.....	.....	67	67	84	88	90	85	87	89	89	80	61	92	.....	.....	255.6	81
December	.....	.....	64	56	73	83	77	75	86	89	85	83	87	96	.....	.....	246.3	79
Sum	226	603	943	953	1,025	1,062	1,063	1,040	1,049	1,058	1,043	1,001	942	909	469	230	3,725.5	998
Percentage of possible.	75	75	79	79	85	88	89	87	87	88	87	83	78	76	67	77	310.5	83

PORTLAND, ME. (T.).

[N. lat. 43° 39′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	11	44	61	74	83	81	84	70	52	29	33	.....	.....	179.2	62
February	.....	.....	11	17	48	49	61	67	62	64	60	59	52	38	.....	.....	162.2	53
March	.....	40	29	48	51	52	58	64	62	69	69	62	55	43	38	.....	204.7	55
April	0	13	36	51	71	82	85	79	78	68	66	58	52	38	24	25	237.3	59
May[1]	0	5	39	65	76	75	73	74	74	77	76	71	54	42	17	2	179.9	56
June	6	24	58	68	71	73	74	79	81	76	83	77	65	63	25	0	276.2	60
July	3	11	36	55	70	78	86	85	87	83	79	75	69	60	31	5	281.3	60
August	13	16	41	54	67	69	74	78	83	77	77	76	69	53	28	5	266.5	61
September	.....	8	23	51	52	60	68	68	70	62	56	54	43	22	0	.....	188.8	50
October	.....	0	4	17	30	36	43	43	51	48	40	28	21	8	.....	.....	112.5	33
November	.....	.....	6	14	37	46	51	50	54	50	41	27	21	.....	.....	.....	115.3	40
December	.....	.....	.....	11	46	60	74	77	79	78	71	54	28	.....	.....	.....	172.2	62
Sum	22	112	283	462	663	741	821	847	862	836	788	693	558	400	163	37	2,376.1	651
Percentage of possible.	4	14	28	38	55	62	68	71	72	70	64	58	46	40	23	7	198.0	54

[1] For 22 days only.

PORTLAND, OREG. (T.).

[N. lat. 45° 32′.]

January	.....	.....	.....	21	19	18	24	37	37	39	29	16	17	45	.....	.....	74.0	26
February	.....	.....	5	17	19	21	29	41	48	49	37	28	18	16	.....	.....	90.3	30
March	.....	19	22	22	27	35	44	53	55	64	57	46	46	43	33	.....	158.6	43
April	0	15	17	16	25	28	36	47	47	44	43	33	24	17	17	0	120.4	30
May	30	23	24	27	34	38	37	48	48	37	38	38	35	24	29	37	158.7	34
June	47	44	45	40	52	60	66	69	71	75	74	79	69	61	60	62	287.0	61
July	90	82	74	73	80	79	86	89	90	96	95	91	90	92	90	91	411.7	87
August	8	25	26	26	28	34	39	50	48	52	53	55	56	55	59	48	188.4	43
September	.....	48	40	42	48	54	66	77	75	77	72	70	69	71	71	.....	237.8	63
October	.....	0	37	34	45	55	62	71	73	71	68	62	56	71	.....	.....	198.1	59
November	.....	.....	13	17	21	28	28	25	26	26	23	17	11	.....	.....	.....	64.8	23
December	.....	.....	.....	2	6	11	17	23	22	21	9	5	1	.....	.....	.....	35.6	13
Sum	175	256	303	337	404	461	534	630	640	651	598	540	492	495	359	238	2,025.4	512
Percentage of possible.	35	32	30	28	34	38	44	52	53	54	50	45	41	50	51	48	168.8	43

RALEIGH, N. C. (T.).

[N. lat. 35° 45′.]

January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November	.....	.....	22	42	56	62	69	80	77	75	71	59	48	50	.....	.....	189.5	61
December	.....	.....	17	29	50	66	78	78	74	73	72	64	54	.....	.....	.....	194.1	64

ROCHESTER, N. Y. (T.).

[N. lat. 43° 8′.]

January	.....	.....	.....	0	10	48	77	80	82	72	58	30	11	0	.....	.....	144.6	49
February	.....	.....	10	8	29	55	70	78	75	69	66	55	41	27	.....	.....	162.7	53
March	.....	64	36	36	46	57	66	67	71	74	73	61	53	49	53	.....	214.7	58
April	86	47	48	56	70	77	82	87	80	79	77	75	64	50	48	.....	273.6	68
May	45	57	67	77	86	92	97	99	99	100	98	99	99	91	74	61	393.8	87
June	58	61	67	76	84	87	77	79	85	80	76	73	81	74	68	60	342.2	74
July	38	41	57	61	72	72	75	76	79	77	83	73	67	57	39	33	299.2	64
August	11	29	37	57	70	74	75	74	79	81	73	67	60	46	39	41	266.3	62
September	.....	43	30	31	40	45	61	59	59	56	52	48	49	54	76	.....	183.6	49
October	.....	0	18	21	30	36	42	37	35	34	36	24	22	22	.....	.....	104.2	30
November	.....	.....	28	17	26	32	32	36	22	28	18	16	7	.....	.....	.....	70.9	24
December	.....	.....	.....	6	13	22	31	29	20	30	21	14	16	.....	.....	.....	59.2	21
Sum	238	342	398	446	576	697	785	801	786	780	731	635	570	470	392	195	2,515.0	639
Percentage of possible.	48	43	40	37	48	58	65	67	66	65	61	53	48	47	56	49	209.6	53

ST. LOUIS, MO. (T.).

[N. lat. 38° 38′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	38	39	47	52	57	56	56	54	49	35	33	.....	.....	147.3	48
February	.....	.....	28	25	35	49	54	63	67	60	57	51	42	44	.....	.....	156.4	50
March	.....	17	39	41	56	64	75	80	86	80	67	49	36	31	22	.....	217.2	58
April	.....	39	48	58	69	76	79	91	96	95	86	83	76	59	26	.....	286.5	72
May	22	40	57	65	80	84	87	89	89	89	86	84	83	70	45	11	326.4	74
June	53	53	59	65	67	70	79	83	90	85	83	85	76	65	53	49	317.4	71
July	34	39	54	77	81	78	81	82	83	89	84	76	78	68	52	49	325.5	72
August	.....	58	64	79	85	87	92	94	95	92	89	87	80	69	62	73	344.8	81
September	.....	30	27	35	51	72	76	74	81	80	80	67	53	41	40	.....	225.8	60
October	.....	64	57	61	77	79	80	85	88	87	85	84	78	79	.....	.....	272.3	79
November	.....	.....	36	35	42	50	54	59	49	47	50	40	37	.....	.....	.....	138.8	46
December	.....	.....	.....	40	49	57	58	59	65	66	63	57	45	.....	.....	.....	166.5	57
Sum	109	340	469	619	731	813	867	916	945	926	884	812	719	559	300	182	2,924.9	768
Percentage of possible	36	42	47	52	61	68	72	76	79	77	74	68	60	56	43	46	243.7	64

SALT LAKE CITY, UTAH (P.).

[N. lat. 40° 46′.]

January	.....	.....	.....	36	40	47	48	43	41	41	42	28	29	47	.....	.....	119.0	40
February	.....	.....	55	53	55	63	69	64	66	71	68	62	60	62	.....	.....	194.9	63
March	.....	8	33	34	49	55	53	51	49	52	50	58	57	39	17	.....	178.6	48
April	.....	56	50	50	58	66	69	66	57	63	59	57	52	42	34	.....	224.5	56
May	41	39	42	51	52	55	59	57	62	58	59	60	54	49	49	59	237.8	53
June	70	75	83	88	93	93	92	94	93	89	83	86	75	73	60	56	373.4	83
July	58	57	71	75	82	83	79	78	71	75	75	77	73	60	50	49	324.5	71
August	80	64	73	81	80	84	80	86	79	75	78	85	73	69	64	70	328.1	77
September	.....	46	62	83	86	88	91	83	87	90	89	86	77	63	66	.....	303.0	81
October	.....	100	62	62	72	79	81	83	83	84	85	76	69	81	.....	.....	262.9	76
November	.....	.....	35	34	38	42	43	46	47	47	43	42	42	.....	.....	.....	125.3	42
December	.....	.....	.....	40	43	51	53	44	59	59	63	47	43	.....	.....	.....	146.8	51
Sum	249	445	566	687	748	806	817	795	794	804	794	764	704	585	340	234	2,818.8	741
Percentage of possible	62	56	57	57	62	67	68	66	66	67	66	64	59	58	49	58	234.9	62

SAN DIEGO, CAL. (P.)

[N. lat. 32° 43′.]

January	.....	.....	0	42	54	62	68	66	72	75	74	72	46	28	.....	.....	197.7	62
February	.....	.....	51	62	77	84	90	90	80	82	79	79	77	68	.....	.....	250.8	78
March	.....	67	46	53	60	67	79	72	73	68	79	75	65	70	79	.....	252.3	68
April	.....	75	63	68	74	83	92	95	93	93	96	95	87	80	77	.....	329.1	84
May	87	66	58	56	70	78	84	90	86	92	88	82	73	59	50	40	318.5	74
June	11	10	14	30	52	62	74	75	74	81	85	84	60	68	60	60	258.0	60
July	0	22	20	27	49	61	66	85	88	85	84	76	70	70	68	60	272.5	62
August	.....	11	16	28	48	76	90	93	92	93	92	90	85	82	68	.....	292.2	71
September	.....	27	29	40	61	73	82	92	91	95	95	89	85	83	80	.....	279.1	75
October	.....	0	33	38	55	65	80	80	82	80	81	83	77	70	.....	.....	242.4	69
November	.....	.....	70	71	70	69	79	83	85	90	83	80	76	88	.....	.....	246.0	78
December	.....	.....	64	71	72	76	87	80	78	84	82	83	69	67	.....	.....	242.9	78
Sum	98	278	464	586	742	856	971	1,001	994	1,018	1,018	988	890	833	482	160	3,181.5	859
Percentage of possible	33	35	39	49	62	71	81	83	83	85	85	82	74	69	69	53	265.1	72

SAN FRANCISCO, CAL. (T.).

[N. lat. 37° 48′.]

January	.....	.....	.....	1	15	31	48	57	58	62	55	33	10	0	.....	.....	114.6	37
February	.....	.....	0	18	63	77	88	95	98	97	94	88	64	21	.....	.....	231.3	74
March	.....	0	6	24	39	49	65	71	76	70	78	67	45	13	24	.....	188.1	51
April	.....	3	31	51	68	74	80	83	81	77	77	68	65	45	20	.....	243.9	62
May	31	23	44	59	71	80	84	88	93	93	87	79	66	30	10	21	283.7	64
June	28	41	55	66	77	92	91	94	94	97	97	94	83	74	65	35	343.3	77
July	44	36	40	52	69	90	95	96	99	98	96	97	91	64	52	52	341.2	76
August	.....	4	9	20	40	62	88	97	100	98	96	92	83	64	43	71	276.2	65
September	.....	0	3	28	46	66	74	80	85	87	90	85	68	39	8	.....	225.7	61
October	.....	0	4	40	61	74	85	88	91	92	92	80	53	32	.....	.....	239.1	69
November	.....	.....	0	21	50	61	66	78	81	82	77	69	28	.....	.....	.....	182.4	60
December	.....	.....	.....	5	32	52	60	62	64	60	55	30	18	.....	.....	.....	134.0	45
Sum	103	107	192	385	631	808	924	989	1,020	1,013	994	882	674	382	222	179	2,803.5	741
Percentage of possible	34	13	19	32	53	67	77	82	85	84	83	74	56	38	32	45	233.6	62

SANTA FE, N. MEX. (P.).

[N. lat. 35° 41′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	.....	67	81	87	91	90	83	79	75	66	57	41	.....	.....	239.7	77
February	.....	.....	69	65	72	80	80	81	87	80	74	75	58	41	.....	.....	230.6	73
March	.....	27	53	67	75	71	72	69	76	70	69	68	65	55	38	.....	250.6	67
April	.....	73	83	86	88	90	90	89	88	88	86	86	82	68	60	.....	320.3	84
May	78	74	90	90	90	89	84	81	84	85	83	78	71	67	61	57	351.5	81
June	71	75	93	95	94	86	88	85	80	82	82	80	76	61	46	31	345.6	79
July	35	48	60	66	74	75	74	75	66	64	55	35	31	28	25	17	242.4	55
August	.....	67	71	77	82	87	89	76	74	73	64	71	65	49	35	50	295.6	71
September	.....	48	58	70	72	77	79	72	75	72	72	65	66	48	42	.....	253.3	68
October	.....	33	45	60	63	73	71	68	73	72	68	61	55	44	.....	.....	223.3	64
November	.....	.....	74	78	89	89	91	90	91	85	87	82	68	50	.....	.....	261.0	85
December	.....	.....	83	66	80	80	84	81	84	79	72	65	51	.....	.....	.....	225.7	75
Sum	184	445	779	887	960	984	993	957	961	929	887	832	745	552	307	155	3,248.6	879
Percentage of possible	61	56	71	74	80	82	83	80	80	77	74	69	62	50	44	39	270.7	73

SAVANNAH, GA. (P.)

[N. lat. 32° 05′.]

January	.....	.....	25	34	50	56	59	55	53	62	50	48	46	45	.....	.....	164.3	51
February	.....	.....	48	48	50	62	71	75	81	84	82	70	60	59	.....	.....	215.7	67
March	.....	33	43	53	65	72	75	73	75	77	82	78	74	66	57	.....	258.4	69
April	.....	43	53	65	71	76	71	80	81	81	85	87	83	60	43	.....	280.5	72
May	75	69	75	82	85	84	81	70	71	77	79	77	64	53	44	.....	310.8	73
June	36	44	61	64	70	71	72	73	65	63	58	47	51	44	30	28	245.9	58
July	10	53	63	67	62	69	73	63	70	72	65	70	63	46	18	13	263.4	61
August	.....	56	65	75	76	79	80	71	67	76	72	71	60	50	29	.....	278.0	67
September	.....	43	51	79	84	84	79	77	70	76	73	67	63	53	57	.....	262.0	71
October	.....	60	44	53	71	72	77	64	64	62	63	66	57	55	.....	.....	221.2	63
November	.....	.....	43	45	49	52	53	51	50	59	58	58	51	42	.....	.....	164.8	52
December	.....	.....	52	57	60	61	62	64	71	64	58	60	49	33	.....	.....	189.3	60
Sum	121	401	623	722	793	838	853	816	818	853	825	799	721	606	278	41	2,854.3	764
Percentage of possible	40	50	52	60	66	70	71	68	68	71	69	67	60	50	40	20	237.9	64

SEATTLE, WASH. (T.).

[N. lat. 47° 38′.]

January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November	.....	.....	8	14	19	19	20	28	27	25	23	22	19	.....	.....	.....	60.7	23
December	.....	.....	.....	0	1	8	12	16	22	23	19	5	0	.....	.....	.....	32.9	13

TAMPA, FLA. (T.).

[N. lat. 27° 57′.]

January	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November	.....	.....	52	50	54	75	74	75	69	66	53	36	52	49	.....	.....	193.2	60
December	.....	.....	32	39	43	54	64	67	66	68	63	50	48	48	.....	.....	178.7	55

VICKSBURG, MISS. (T.).

[N. lat. 32° 22′.]

Month.	Percentage of sunshine recorded during hours ending (local time)—																Total. (hours).	Percentage of possible.
	5h a. m.	6h	7h	8h	9h	10h	11h	Noon.	1h p. m.	2h	3h	4h	5h	6h	7h	8h		
January	.....	.....	25	24	22	25	34	35	43	45	43	40	30	23	.....	.....	107.5	34
February	.....	.....	46	46	53	57	62	61	63	58	56	50	53	57	.....	.....	178.7	56
March	.....	22	41	41	45	53	66	72	69	65	66	61	57	47	39	.....	211.4	57
April	.....	36	30	53	67	77	87	84	88	86	82	71	65	51	37	.....	263.1	67
May	38	42	52	68	82	89	94	93	92	91	85	81	83	70	54	.....	330.4	77
June	27	32	43	63	87	93	95	93	95	92	86	88	81	74	64	55	328.4	77
July	33	61	65	86	97	97	100	97	100	100	100	100	90	82	75	70	387.8	89
August	.....	56	58	72	90	94	96	97	95	92	88	74	59	48	27	.....	315.2	76
September	.....	71	63	71	83	83	90	91	82	80	80	84	77	71	84	.....	294.8	79
October	.....	60	37	43	57	67	70	77	75	69	62	57	51	60	.....	.....	214.5	61
November	.....	.....	50	49	60	65	82	80	78	77	75	70	65	67	.....	.....	218.1	69
December	.....	.....	52	57	61	69	73	79	84	85	82	76	72	67	.....	.....	230.2	74
Sum	98	380	562	673	804	869	949	959	964	940	905	852	783	717	380	125	3,080.1	816
Percentage of possible	33	48	47	56	67	72	79	80	80	78	75	71	65	60	54	62	256.7	68

WASHINGTON, D. C. (P.).

[N. lat. 38° 54′.]

January	.....	.....	.....	30	45	51	48	48	47	45	52	46	44	43	.....	.....	139.9	46
February	.....	.....	48	42	42	54	51	47	47	49	55	47	49	52	.....	.....	151.2	48
March	.....	42	39	45	61	60	54	60	66	71	61	65	53	48	43	.....	212.2	57
April	.....	35	42	54	56	59	57	63	64	64	61	60	58	46	42	.....	219.6	55
May	38	36	42	47	49	57	55	53	44	47	47	44	45	40	29	25	200.0	45
June	30	33	45	49	56	60	58	61	62	61	67	51	51	38	34	35	226.3	51
July	26	34	40	45	60	59	63	61	70	68	57	65	54	39	32	32	237.1	52
August	.....	68	72	75	78	81	84	80	75	78	77	72	64	63	61	55	311.7	74
September	.....	57	50	54	59	59	64	68	62	67	63	67	56	53	58	.....	224.0	60
October	.....	82	46	50	55	63	60	59	65	66	62	57	51	40	.....	.....	197.4	57
November	.....	.....	41	28	34	46	57	50	57	56	54	45	41	.....	.....	.....	141.3	47
December	.....	.....	.....	49	53	61	61	70	68	71	68	55	52	.....	.....	.....	179.9	61
Sum	94	387	465	568	648	710	712	720	727	743	724	674	618	462	299	147	2,440.6	653
Percentage of possible	31	48	46	47	54	59	59	60	61	62	60	56	52	46	43	37	203.4	54

WILMINGTON, N. C. (T.).

[N. lat. 34° 14′.]

January	.....	.....	30	13	44	54	66	76	76	70	59	48	29	22	.....	.....	167.4	53
February	.....	.....	32	31	49	64	76	79	76	76	73	70	53	39	.....	.....	198.7	62
March	.....	30	47	57	71	78	86	92	87	89	83	82	63	39	30	.....	209.8	72
April	.....	56	58	70	88	94	99	95	95	94	97	92	83	60	50	.....	324.1	83
May	14	35	46	74	86	86	86	93	90	91	87	84	74	43	18	0	307.5	71
June	3	4	11	54	60	70	72	74	76	72	63	55	47	25	10	10	208.9	48
July	0	9	18	61	74	78	79	80	84	86	70	67	61	33	19	14	254.4	58
August	.....	28	37	72	80	89	90	91	85	77	74	71	63	53	37	.....	288.0	69
September	.....	38	47	77	85	91	97	100	94	90	88	84	79	51	36	.....	299.3	81
October	.....	33	30	61	67	75	77	77	79	75	70	64	50	29	.....	.....	227.6	65
November	.....	.....	24	34	44	60	68	73	77	76	70	66	44	33	.....	.....	186.2	60
December	.....	.....	11	32	59	61	75	71	78	72	66	58	46	67	.....	.....	190.2	62
Sum	17	233	391	636	807	900	971	1,001	997	968	900	841	692	494	200	24	2,922.1	784
Percentage of possible	6	29	33	53	67	75	81	83	83	81	75	70	58	41	29	8	243.5	65

SNOWFALL, 1896-97.

TABLE XI.—MONTHLY AND SEASONAL SNOWFALL, 1896-97.

[Inches and tenths.]

Stations.	1896.				1897.					
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Annual.
Abilene, Tex	.....	.....	.....	.....	4.6	T.	.....	.....	.....	4.6
Albany, N. Y	.....	.....	0.1	5.0	11.8	9.4	2.6	T.	.....	28.9
Alpena, Mich	.....	0.7	1.1	6.6	8.0	10.4	16.3	1.7	.....	44.8
Amarillo, Tex	.....	.....	.....	.....	19.7	3.0	T.	T.	.....	22.7
Astoria, Oreg	.....	.....	3.5	0.0	0.3	1.5	3.8	.....	.....	9.1
Atlanta, Ga	.....	.....	.....	6.2	0.1	T.	.....	.....	.....	6.3
Atlantic City, N. J	.....	.....	4.5	4.3	12.4	3.2	T.	.....	.....	24.4
Augusta, Ga	.....	.....	.....	1.0	T.	.....	.....	.....	.....	1.0
Baker City, Oreg	.....	.....	6.2	4.2	7.3	13.3	13.4	1.2	0.1	45.7
Baltimore, Md	.....	.....	3.0	3.2	4.7	0.7	T.	.....	.....	11.6
Binghamton, N. Y	.....	T.	1.2	5.7	14.2	12.9	4.9	0.4	.....	39.3
Bismarck, N. Dak	.....	T.	31.0	0.2	9.7	13.2	7.6	3.0	.....	64.7
Block Island, R. I	.....	.....	0.4	16.6	13.1	6.8	1.0	.....	.....	37.9
Boston, Mass	.....	.....	2.2	8.6	18.2	10.9	3.3	T.	.....	43.2
Buffalo, N. Y	.....	T.	0.2	3.4	27.8	12.0	4.1	2.7	.....	50.2
Cairo, Ill	.....	.....	.....	T.	1.3	1.7	T.	.....	.....	3.0
Canby, Fort, Wash	.....	.....	2.0	0.0	0.0	3.5	3.0	.....	.....	8.5
Cape Henry, Va	.....	.....	.....	9.8	1.4	T.	.....	.....	.....	11.2
Carson City, Nev	.....	0.8	0.5	1.6	6.8	30.5	24.7	0.2	.....	65.1
Charlotte, N. C	.....	.....	.....	11.0	1.1	.....	.....	.....	.....	12.1
Chattanooga, Tenn	.....	.....	.....	.....	2.8	T.	.....	.....	.....	2.8
Cheyenne, Wyo	2.0	2.8	0.8	0.3	2.7	5.3	22.8	5.2	.....	41.9
Chicago, Ill	.....	T.	4.2	1.3	13.1	14.6	11.2	0.9	.....	45.3
Cincinnati, Ohio	.....	.....	T.	0.3	8.0	3.8	0.1	0.1	1.5	13.8
Cleveland, Ohio	.....	T.	0.3	9.9	11.0	5.1	2.6	0.4	.....	29.3
Columbia, Mo	.....	.....	T.	T.	2.2	9.3	0.4	.....	.....	11.9
Columbia, S. C	.....	.....	.....	3.4	T.	.....	.....	.....	.....	3.4
Columbus, Ohio	.....	.....	T.	1.1	3.5	2.7	1.2	T.	T.	8.5
Concordia, Kans	.....	.....	0.2	T.	7.2	5.2	3.5	.....	.....	16.1
Corpus Christi, Tex	.....	.....	T.	T.	6.0	.....	.....	.....	.....	6.0
Davenport, Iowa	.....	.....	T.	2.5	8.5	9.5	10.1	0.2	.....	30.8
Denver, Colo	.....	2.5	0.9	4.6	6.1	10.8	12.1	2.2	.....	39.2
Des Moines, Iowa	.....	T.	2.6	0.9	13.9	8.1	6.1	T.	.....	31.6
Detroit, Mich	.....	T.	T.	7.4	8.7	8.2	10.4	T.	.....	34.7
Dodge City, Kans	.....	T.	0.1	T.	15.9	22.5	1.3	.....	.....	39.8
Dubuque, Iowa	.....	T.	T.	3.8	9.2	10.2	5.1	T.	.....	28.3
Duluth, Minn	T.	T.	19.5	9.1	13.1	22.9	13.9	T.	T.	78.5
Eastport, Me	.....	.....	4.7	4.8	16.2	12.6	22.2	11.0	.....	71.5
El Paso, Tex	.....	.....	.....	.....	3.1	.....	.....	.....	.....	3.1
Erie, Pa	.....	3.0	3.5	8.9	22.6	6.0	1.5	1.0	.....	46.5
Eureka, Cal	.....	.....	.....	.....	.....	.....	0.5	.....	.....	0.5
Evansville, Ind	.....	.....	T.	0.0	1.2	T.	.....	.....	.....	1.2
Fort Smith, Ark	.....	.....	.....	.....	1.3	.....	.....	.....	.....	1.3
Galveston, Tex	.....	.....	.....	T.	0.1	.....	.....	.....	.....	0.1
Grand Haven, Mich	.....	0.4	7.0	9.4	33.6	10.9	10.3	0.9	.....	72.5
Green Bay, Wis	.....	2.2	16.1	7.7	1.4	17.6	11.1	0.8	T.	56.9
Hannibal, Mo	.....	.....	0.1	0.2	6.4	9.3	0.3	.....	.....	16.3
Harrisburg, Pa	.....	.....	0.1	2.7	7.3	9.0	4.8	T.	.....	23.9
Havre, Mont	.....	0.5	15.5	1.6	5.3	3.2	3.9	1.5	.....	31.5
Helena, Mont	5.8	1.8	31.7	0.5	6.8	14.7	12.1	6.2	T.	79.6
Huron, S. Dak	.....	6.0	16.7	0.9	26.7	5.2	4.0	T.	.....	59.5
Idaho Falls, Idaho	.....	.....	14.9	6.7	6.4	24.9	34.1	4.7	.....	91.7
Indianapolis, Ind	.....	T.	T.	0.1	13.9	6.8	1.4	5.0	2.4	29.6
Kansas City, Mo	.....	.....	T.	T.	12.3	15.4	1.2	.....	.....	28.9

TABLE XI.—MONTHLY AND SEASONAL SNOWFALL, 1896–97—Continued.

Stations.	1896.				1897.					
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Annual.
Keokuk, Iowa			T.	T.	5.8	5.9	3.8			15.5
Kittyhawk, N. C					T.					T.
Knoxville, Tenn					4.5	T.	T.			4.5
La Crosse, Wis		0.8	8.9	4.8	7.9	12.7	6.7	T.		41.8
Lander, Wyo		6.7	8.0	T.	2.3	11.1	13.8	10.5		52.4
Lexington, Ky			T.	T.	8.6	1.5	T.	0.0	1.5	11.6
Lincoln, Nebr					5.8	8.7	2.8			17.3
Little Rock, Ark					0.1	T.				0.1
Louisville, Ky			T.	T.	4.6	0.8	T.			5.4
Lynchburg, Va			2.0	T.	6.7	0.5	T.			9.2
Marquette, Mich		6.3	31.0	14.4	20.6	20.1	39.8	7.5	T.	139.7
Memphis, Tenn					0.3	0.1				0.4
Miles City, Mont		T.	13.7	0.7	6.6	6.0	23.8	T.		50.8
Milwaukee, Wis		2.4	16.3	5.9	11.9	17.1	14.4	4.5	0.1	72.6
Minneapolis, Minn		T.	8.8	4.2	13.6	10.3	16.0	0.5		53.4
Montgomery, Ala				T.	T.					T.
Moorhead, Minn		4.9	30.4	7.1	15.5	13.6	7.3			78.8
Nantucket, Mass			0.4	9.5	3.5	12.8	0.3	T.		26.5
Narragansett Pier, R. I			3.0	9.5	12.5	11.0	1.5			37.5
Nashville, Tenn				T.	1.5	T.	0.1			1.6
New Haven, Conn			6.1	17.8	25.5	12.1	5.9	T.		67.4
New Orleans, La					1.0					1.0
New York, N. Y			3.8	12.6	11.7	8.8	2.2	T.		39.1
Norfolk, Va				11.0	1.5	T.				12.5
Northfield, Vt		0.2	4.3	6.0	33.0	14.1	20.3	5.7		83.6
North Platte, Nebr		13.0	1.1	0.0	4.4	5.2	3.0	7.2		33.9
Oklahoma, Okla					5.1	T.				5.1
Omaha, Nebr		T.	0.1	0.5	6.5	6.0	1.8			14.9
Oswego, N. Y			5.6	19.6	52.7	8.5	7.6	1.0		95.0
Palestine, Tex					3.0					3.0
Parkersburg, W. Va			T.	0.6	5.8	2.0	1.1			9.5
Pensacola, Fla					T.					T.
Philadelphia, Pa			2.8	8.7	7.8	6.4	T.			25.7
Pierre, S. Dak		3.5	20.1	0.1	14.9	2.3	10.7	2.8		54.4
Pittsburg, Pa		T.	T.	3.2	10.6	3.8	2.2	0.1		19.9
Point Reyes Light, Cal						T.				T.
Port Angeles, Wash			5.5	0.0	T.	0.5	4.5			10.5
Port Huron, Mich		T.	1.2	8.9	10.7	9.9	5.5	0.4		36.6
Portland, Me			4.4	6.1	16.8	19.1	26.8	2.4		75.6
Portland, Oreg			2.0	0.0	1.8	T.	5.0			8.8
Pueblo, Colo		T.	3.6	1.7	5.0	11.7	2.8	T.		24.8
Pysht, Wash			11.0	0.0	0.0	1.0	8.0			20.0
Raleigh, N. C				7.5	1.8	0.0	T.			9.3
Rapid City, S. Dak		2.8	10.6	0.1	6.1	4.7	10.1	3.9		38.3
Red Bluff, Cal						3.5				3.5
Rochester, N. Y		T.	5.5	13.9	20.1	13.7	8.1	5.2		66.5
Roseburg, Oreg			0.2	0.0	T.	T.	3.5			3.7
St. Louis, Mo			0.7	T.	5.2	7.1	T.	T.		13.0
St. Paul, Minn		0.3	14.0	7.8	19.7	10.9	15.1	4.6		72.4
Salt Lake City, Utah			11.1	5.5	13.5	17.9	12.9	2.4		63.3
San Antonio, Tex			T.	0.0	0.2					0.2
Sandusky, Ohio		T.	T.	5.1	9.3	7.7	2.5	T.		24.6
Santa Fe, N. Mex		T.	1.5	4.0	7.6	10.7	10.0	0.2		34.0
Sault Ste. Marie, Mich	T.	5.9	17.5	8.6	16.1	10.3	17.8	2.7	T.	78.9
Seattle, Wash			20.0	T.	6.1	0.2	4.4			30.7
Shreveport, La					3.5	0.5				4.0
Sioux City, Iowa		T.	10.1	0.1	13.0	5.1	1.8			30.1
Spokane, Wash			16.5	3.4	13.2	15.8	16.4			65.3
Springfield, Ill		T.	3.7	T.	6.9	5.0	0.4	0.1		16.1
Springfield, Mo			0.2	T.	7.4	4.7	T.			12.3
Tatoosh Island, Wash			1.0	0.0	3.0	3.0	8.5			15.5
Toledo, Ohio		T.	0.7	7.3	13.2	6.2	5.5	2.0		34.9
Topeka, Kans			T.	T.	4.7	11.8	2.3			18.8
Vicksburg, Miss					0.5					0.5
Vineyard Haven, Mass			T.	12.5	9.5	11.4	0.1	T.		33.5
Walla Walla, Wash			10.9	8.8	10.0	2.2	5.0			36.9
Washington, D. C			2.5	1.0	6.7	6.0	T.			16.2
Wichita, Kans			T.	T.	6.8	9.2	0.2			16.2
Williston, N. Dak		0.5	20.5	1.0	5.6	11.0	15.2	2.5		56.3
Wilmington, N. C					T.					T.
Winnemucca, Nev		T.	0.3	T.	2.0	5.9	2.1	T.		10.3
Woods Hole, Mass			0.6	22.6	15.5	10.1	0.8	T.		49.6

SEVERE LOCAL STORMS AND TORNADOES.

The important details of each storm are given in the list below. The approximate geographic position and the direction of movement of each storm are shown on Chart XXII. The numbering in the list is by dates rather than by individual storms. Corresponding numbers on the chart show the position of the storms described in the text.

CHRONOLOGICAL LIST OF SEVERE LOCAL STORMS AND TORNADOES, 1896.

No. 1, March 28.—3 p. m. (Central time); Westalton, St. Charles County, Mo. No casualties; loss slight; width 600 feet; length not given; moved northeast.

No. 1a.—3.40 p. m. (Central time); Oregon, Ogle County, Ill. No casualties; width 990 feet; length unknown; loss $8,000; moved northeast.

No. 2, April 11.—10 p. m. (Central time); Colorado, Mitchell County, Tex. One person killed; loss $2,500; width 300 feet; length 330 feet; moved northeast.

No. 3, April 12.—5 a. m. (Central time); Cale, Choctaw Nation, Ind. T. No casualties; loss $500; width 300 feet; length not given; moved northeast.

No. 4, April 15.—3 a. m. (Central time); Faulk County, S. Dak. (towns of Burkmere, Millard, and Cressbard). Two killed; 2 injured; loss about $5,000; width from 1 to 3 miles; length about 10 miles; moved northeast. (Probably a severe thunderstorm.)

No. 5, April 20.—2.15 p. m. (Central time); Fremont (4 miles northwest of), Sandusky County, Ohio. Three killed; 20 injured; loss in county, $100,000; width about one-half mile; length 6 miles; moved east.

No. 6, April 25.—Between 9 and 9.30 p. m. (Central time); Cloud, Clay, and southern edge of Washington counties, Kans. Eight killed; 20 injured; loss $15,000; width one-half mile; length 20 miles; moved east and then northeast.

No. 7, April 26.—4.30 p. m. (Central time); between Valley City and Sanborn, Barnes County, N. Dak. One person injured; loss small; width 600 feet; length 12 miles; moved east.

No. 8, April 27.—Between 6 and 7 p. m. (Central time); Epiphany, Hanson County, S. Dak. Several persons injured; loss $10,000 in county; width one-fourth mile; length about 15 miles; moved north.

No. 8a.—6.30 p. m. (Eastern time); Spencer (6 miles east of), McCook County, S. Dak. No casualties; loss $5,000; width not given; length 8 or 10 miles; moved northwest.

No. 8b.—7 p. m. (Central time); Vilas (one-half mile west of), Miner County, S. Dak. One injured; loss $2,500; width 660 feet; length about 10 miles; moved north. (Probably a continuation of No. 8a.)

No. 9, April 28.—Between 8 and 9 p. m. (Central time); near Saling, Mo. No casualties; property loss $400; path 300 feet wide 5 miles long; moved northeast.

No. 10, May 7.—8.15 p. m. (Central time); Clark County, S. Dak. One killed; property loss $1,000; path quite narrow, probably 10 miles long; moved northeast.

No. 11, May 11.—6 p. m. (Central time); Rice County, Kans. (near the towns of Sterling and Wherry). No casualties; property loss small; width 900 feet; length 6 miles; moved northeast.

No. 11a.—8 p. m. (Central time); Worthington, Nobles County, Minn. No casualties; loss $2,000; width 300 feet; length one-half mile; moved north, slightly east. (Touched the ground at intervals only.)

No. 12, May 12.—4.30 p. m. (Central time); Payne County, Okla. (near towns of Perkins and Ingalls). No casualties; property loss about $1,000; path 200 yards wide; length 12 to 15 miles; destruction not continuous; moved northeast. A funnel cloud was observed at Oklahoma, about 40 miles southwest of Perkins, at 3.30 p. m. The destruction in the neighborhood of Oklahoma was light, amounting to $300 only. The Payne County tornado was evidently a further manifestation of the storm conditions observed at Oklahoma.

No. 12a.—In the afternoon; Elkhorn (near), Douglas County, Nebr. No casualties; property loss not given (small); width 600 to 900 feet; length 2 miles; moved northeast. (An overgrown whirlwind.)

No. 12b.—5 p. m. (Central time); Lawrence (near), Dallas County, Tex. No casualties; loss $1,000; width 1,200 feet; length one-half mile; moved northwest.

Tornadoes, 1896.

Chart XXII.

No. 12c.—Between 6 and 7 p. m. (Central time); Navarro County (near Mestens and Frost), Tex. No casualties; loss $2,500; width 450 to 1,200 feet; length 1 mile; moved southeast. (Several storms in the locality; only one had a funnel cloud.)

No. 13, May 15, the Sherman tornado.—A strip of country extending from near the southern edge of Denton County, Tex., northeastward to the Indian Territory line—a distance of 80 miles—was traversed by a series of tornadoes on the afternoon of May 15, 1896. Seventy-eight persons were killed; at least twice that number severely injured, and a property loss aggregating $165,000 was sustained by the residents of Denton and Grayson counties. Five tornado clouds, each following a separate and distinct path, were observed. The first, according to the report of Local Forecast Official I. M. Cline, of Galveston, appeared in the southwestern part of Denton County, between 1 and 2 p. m. (Central time), reaching Justin at 2.20 p. m.; thence it moved north 7 miles and northeast 2 miles, respectively, and disappeared. The second tornado cloud appeared about 4 miles east of the point at which No. 1 disappeared; moved northeast and north for a total distance of about 15 miles and disappeared. No. 3 appeared about 10 miles to the eastward of the point at which No. 2 disappeared. Its course was north-northeast for 15 miles until it rose from the ground about a mile north of Sherman, after passing through that city. No. 4 apparently formed 4 miles south of Sherman and moved northeast to the Indian Territory line, striking the Red River at Carpenters Bluff. No. 5 was observed at Joel, Indian Territory, about 5 miles from the southern border and 18 miles northeast of Sherman. The time of occurrence is given as 4.40 p. m. (Central time), some minutes before No. 3 struck Sherman. Nothing definite can be learned of its subsequent movement. The rate of movement of the storm clouds or of the air currents in which they traveled can not be determined with much accuracy, but it does not appear to have exceeded 20 miles per hour.

The comparatively slow progress of No. 3 made observations of the appearance of the cloud and the action of the forces at work an easy matter. An observer on the outskirts of Sherman, who had excellent view of the cloud and who was himself caught up in it and carried a little west of north for a distance of two blocks, describes its appearance as follows:

* * * * * * *

"It did not resemble a funnel-shaped cloud. It looked to me like a great ball of vapor rolling over and over toward me. When I first saw it distinctly at that hill it seemed to be about 250 yards wide and 100 feet high. The motion, as it presented itself to me, was that of a ball rolling over and over, not spiral. Whatever the ball of cloud struck was lifted right up from the ground. I saw the effects as it came to house after house between the hill and me. When the ball reached Mrs. C.'s, the house went right up in the air off its foundations. It was whole until it was up 10 or 15 feet. Then it went all to pieces, just as if it had exploded."

One of the striking characteristics of the Sherman tornado was the very sharp line of no destruction on either side. The path of destruction was quite narrow, varying from 50 to 200 yards. In one case had a family gone 100 feet east or west it would have been saved from almost complete annihilation, as evidenced by the growing corn and other undisturbed vegetation not more than 100 feet east or west of where the house stood. In a great many tornadoes the region of destructive winds frequently extends a quarter of a mile on either side of a line drawn through the center of the storm's path. Fortunately in this case buildings just outside of the immediate storm track were not seriously injured.

The tornado cloud when 2 miles southwest of Sherman, according to the observations of Prof. A. Q. Nash, of the Sherman Institute, was moving north 22° east. If it had continued in this direction it would have passed directly through the heart of the city. As it was, its course curved gradually to the westward, so that on leaving the city its direction was north 16° west, a change of 38° in something like 2 miles. Another interesting fact noted in connection with the storm was that on high ground the path of great destruction was much wider than on the lower levels. There was no apparent difference in the intensity of the storm on high or low levels, nor was there any noticeable diminution in its power when the funnel cloud was last observed in contact with the earth.

The track of the tornado, especially on the highway leading northward from Sherman, showed what might be termed a pounding or crushing effect on the surface of the ground. Fence wires were torn from their fastenings and crushed into the roadbed to a depth of from one-half to 2 inches.

No. 14, May 17, the tornado in Marshall, Nemaha, and Brown counties.—This storm had its origin in the southern portion of Washington County, Kans., between the villages of Palmer and Parallel, on the afternoon of May 17, 1896. Its direction was northeast until a point 6 miles southeast of Barnes was reached, thence east by south until near the town of Irving, whence it followed a general northeasterly course through or near the towns of Frankfort, Baileyville, Seneca, Oneida, Sabetha, and Reserve, Kans., and Falls City, Nebr. It crossed the Missouri River near Rulo, Nebr., as a severe wind and thunderstorm, and was last reported in Holt County, Mo. From its inception in Washington County, Kans, to the border line between Kansas and Nebraska, the storm presented the usual characteristics of a violent tornado. During the latter part of its course, however, it widened out and decreased in violence in the central portion. Thus, at Reserve, Kans., a few miles from the Nebraska line, the sweep of the storm included the whole of the village and portions of the adjacent country. At Falls City, Nebr., the path of destruction was 2 miles wide, with a narrower track of very great destruction 1¼ miles wide. From its origin in Washington County to Frankfort, Marshall County, almost 40 miles, the tornado passed through a farming community in plain view and at a comparatively slow rate of motion. At both Frankfort and Seneca the funnel cloud was observed fully half an hour before it struck. It was also plainly seen 10 miles to the northward of Seneca and Oneida. The path of great destruction

was quite narrow at first, not over 700 feet at Frankfort and Seneca, gradually widening out as it passed northeastward. Twenty-five lives were lost, 6 at Seneca, 6 at Oneida, 3 at Sabetha, 5 at Reserve, and 5 in the vicinity of Falls City and Reserve. Seventy-three persons were severely injured. The property loss in Kansas was about $250,000; Nebraska, $75,000.

No. 14a.—12.45 a. m. (Central time); Graves and Marshall counties, Ky. (towns of Sympsonia and Elva). Five killed; loss about $5,000; width from 100 to 300 feet; moved southeast.

No. 15, May 19.—4 p. m. (Central time); Rock Post-Office, Cowley County, Kans. Two injured; loss $6,000; width from 300 feet to one-half mile; length about 8 miles; moved northeast by east. The storm cloud advanced very slowly, thus giving those in its path ample time to escape.

No. 16, May 20.—4.30 p. m. (Central time); South Hill, Mecklenburg County, Va. No casualties; loss $2,000; width 50 feet; length not given; moved north.

May 20.—Tornado clouds were observed in three different sections of Kansas, viz:

No. 17.—8 p. m. (Central time); Emporia (3 miles south of), Lyons County. Two injured; loss about $500; width 20 feet; length not known; moved northeast.

No. 17a.—Between 4 and 5 p. m. (Central time); Topeka (15 miles north of). One injured; loss $2,500; width 100 feet; length about 6 miles; moved northeast.

No. 17b.—11 a. m. (Central time); Arkansas City (7 miles south of). No casualties; loss about $200; width varied from 20 to several hundred feet; length about 5 miles; moved northeast.

No. 18, May 24, Polk and Jasper counties, Iowa, Tornado.—First observed about 2½ miles southwest of Polk City, Polk County, Iowa; passed thence in an easterly direction through the county a few miles south of Ankeny, and through the northern edge of the towns of Bondurant, Santiago, and Valeria. Was last observed near Mingo in Jasper County, having traversed a distance about 35 miles from 9.30 to 11 p. m., (Central time.) Nineteen persons were killed and a large number were injured. Many persons took refuge in caves and cellars and were saved from death or injury. The property loss was about $75,000. The path of great destruction was at first from one-fourth to one-half mile wide, narrowing as the tornado passed eastward to 30 rods at Valeria and 50 rods near Mingo.

No. 18a, May 24.—10.20 p. m. (Central time); Manchester, Delaware County, Iowa. Funnel cloud dipped down just south of city. One killed, 2 injured; property loss within 4 miles of city estimated at $50,000. Path near city 1 mile long, about 30 rods wide. General course south 85° east.

No. 19, May 25.—1 a. m. (Central time); the storm was general throughout northern Illinois, but assumed the characteristics of a tornado in the counties of Ogle, Lee, Winnebago, Boone, and Cook, only. Eight killed; others injured; loss of property $95,000; path variable in length and width; moved east.

No. 19a. Tornadoes in eastern Michigan.—Tornadic activity was again renewed between 6 and 7 o'clock p. m. (Central time) in eastern Michigan. A number of separate and distinct funnel clouds were observed extending over a strip of country between Saginaw Bay on the north and Detroit on the south.

The most destructive storm had its origin on the west ½ of the northwest ¼ of section 5, in township 5 north of range 8 east, and swept in an easterly direction across the townships of Groveland, Brandon, and Oxford, in Oakland County, and Dryden, in Lapeer County, a distance of more than 25 miles. The width of the path of great destruction varied from about 30 yards at the beginning to probably three-fourths of a mile in the widest part.

Through the township of Groveland the tornado passed across the middle of the sections eastward, and consequently only the buildings on the north and south roads were wrecked, but when it had reached the west line of the township of Brandon the storm had veered to the southward as far as the south line of the first tier of sections, along which line (or nearly so) a main highway runs for about 9 miles and on which as many fine farm buildings were situated as could be found anywhere in a like distance. These were almost entirely swept away. The villages of Oakwood and Thomas, which were badly wrecked, only escaped total destruction by being just outside of the center of the storm.

The force of the storm seemed to be simply irresistible. Large oak and hickory trees were broken and twisted off and carried a considerable distance, and forests and orchards were leveled to the ground. This storm possessed all of the usual characteristics of a severe tornado. It is worthy of note, moreover, that it began at about the same hour of the day as the Polk-Jasper County, Iowa, tornado of the day previous. The crushing effect in the center of the path was observed as in the Sherman, Tex., tornado. Mr. Norman B. Conger, local forecast official, Weather Bureau, notes that the grass was pounded down into the earth as though it had been washed therein by a heavy flow of water. The small trees on the south side of the path were stripped of their bark, even to the twigs, as though it had been done by the careful hand of man. The property loss was estimated at $400,000; 47 persons were killed and over 100 were injured.

The tornadoes observed in other portions of the territory above mentioned were not severe and little damage was done in any case except at Mount Clemens, where the property loss was quite large.

No. 19b.—5.30 p. m. (Central time); Bangor (3 miles northwest of), Walworth County, S. Dak. No casualties; property loss $1,000; width of path 1,320 feet; length 5 or 6 miles; moved east.

No. 20, May 27.—The tornadoes at St. Louis and other points in Missouri and Illinois are described in the Monthly Weather Review for March, 1896 (issued in July, 1896). The area over which tornadic action occurred in one place or another is inclosed between the two heavy lines on the chart accompanying this report. Three hundred and six killed; property loss $12,904,900; dimensions of path varied; general course of storm, south of east.

No. 21, May 28.—1.30 p. m. (Eastern time); Columbia, Pa. One killed; 20 injured; property loss about $6,000; path 150 feet wide; length unknown; moved east.

No. 21a.—3.35 p. m. (Eastern time); Montgomery and Bucks counties, Pa. (towns of Ambler, Jarrettstown, and Hatboro). Four killed; 6 injured; property loss about $100,000; path 300 feet to half mile wide; length about 15 miles; moved east-northeast.

No. 22, May 30.—4 p. m. (Mountain time); Lansing, Arapahoe County, Colo. No casualties; property loss $800; path 250 feet wide, 1½ miles long; moved north.

No. 23, June 6.—4.20 p. m. (Central time); Virgil, Beadle County, S. Dak. Also in township 112, range 60 (time unknown). One injured at Beadle; property loss $1,900; path 200 feet wide, 2 miles long. Property loss in township 112, $1,000; both storms moved northeast.

No. 23a.—5.40 p. m. (Central time); Wentworth, Lake County, S. Dak. No casualties; width of path 330 feet; length not given; moved northeast. Property loss about $500. Small funnel 5 or 6 feet in diameter at the bottom and 30 or 40 at the top.

No. 23b.—6.30 p. m. (Central time); Flandreau, Moody County, S. Dak. No casualties; loss of property $6,000; width of path three-fourths of a mile; length not given; moved northeast. Probably severe thunder storm only.

No. 24, June 8.—A minor tornado was observed in Winnebago County, Wis., near Oshkosh. It destroyed a barn in its path and disappeared over Lake Winnebago.

No. 25, June 9.—11 a. m. (Central time); Wyeth City (near Guntersville), Marshall County, Ala. Five persons injured; loss of property $5,000; width of path 200 yards; length 2 miles; moved east.

No. 26, June 21.—4.30 p. m. (Eastern time); Nutley, Essex County, N. J. No casualties; property loss small; width of path from one-half to three-fourths of a mile; length not given; moved east. Funnel cloud apparently did not touch the ground.

No. 27, June 24.—6.30 p. m. (Central time); Clayton, Polk County, Wis. Two persons injured; loss of property, 6 houses destroyed and a few barns wrecked; width of path not given; length 5 miles; moved northeast.

No. 28, June 27.—2.30 p. m. (Central time); West Louisville, Daviess County, Ky. One person killed and 1 injured; loss of property $1,000; width of path 60 feet; length 9 miles; moved east.

No. 29, July 8.—9.30 a. m. (Eastern time); Halifax County, N. C., near the village of Spring Hill. One killed and 3 injured; property loss about $1,000; path 60 or 70 feet wide and about 6 miles long; moved northeast.

No. 29a, July 8.—About 5 p. m. (Eastern time); Sussex and Prince George counties, Va. Five injured; property loss about $1,200; path 50 to 150 yards wide; total length about 20 miles; destruction not continuous; moved north.

No. 30, July 15.—2 p. m. (Central time); near Hartsville, S. C. No casualties; property loss about $300; path 300 feet wide; length unknown; moved northeast.

No. 31, July 26.—8 p. m. (Central time); near Utica, Mich. No casualties; property loss about $1,000; path 4 miles long; width unknown; moved east.

No. 31a, July 26.—8 p. m. (Central time); Marshall County, Iowa. Towns of St. Anthony, Albion, and Green Mount. (Probably a derecho.) One killed, 1 injured; property loss about $10,000; width of path variable—from 20 yards to half a mile; length about 20 miles; moved a little north of east.

No. 32, July 29.—7.55 p. m. (Central time); Glouster, Athens County, Ohio. One person killed, 10 injured; property loss about $4,000; width of path 450 feet; length 1¼ miles; moved northeast.

No. 33, August 8.—Noon (Central time); near Grayling, Mich. No casualties; property loss $2,000; path 40 to 60 rods wide; length 12 miles; moved east-northeast.

No. 34, September 5.—7 p. m. (Eastern time); Waltersburg, Pa.; 4 injured; property loss about $12,000; path 1,500 feet wide; 8 to 10 miles long; moved northeast.

No. 35, September 12.—5 p. m. (Eastern time); near Springfield, Otsego County, N. Y. No casualties; property loss confined to standing timber; path 3 miles long, one-half mile wide; moved east.

No. 36, October 22.—4 p. m. (Central time ?); near Seguin, Tex. No casualties; property loss small; path 300 feet wide and about 6 miles long; moved northeast. Destruction confined principally to timber.

No. 37, October 28.—5 p. m. (Eastern time); Grayson County, Tex., near Farmington, Howe, and Sherman. Six persons injured; property loss about $2,000; path 30 to 200 yards wide; length 8 or 10 miles.

No. 37a, October 28.—3 p. m. (Central time); Alderson, Ind. T. Two persons injured; property loss $2,500; path 150 feet wide, one-half mile long; moved northeast.

No. 37b, October 28.—7 p. m. (Central time); Mitchell, Lincoln County, Okla. Two killed; property loss $200; path 50 to 60 feet wide, known length 3 or 4 miles; moved north.

No. 37c, October 28.—10.15 p. m. (Central time); Wewoka, Ind. T. Three persons injured; property loss $1,500; path one-fourth mile wide, 4 miles long; moved northeast.

No. 38, October 29.—11.30 a. m. (Central time). Tensas Parish, La. Two killed, 13 injured; property loss about $15,000; path 200 yards wide, length unknown; moved northeast.

No. 38a, October 29.—10 a. m. (Central time); Jefferson County, Ark. (through the edge of the small hamlet of Tucker). Three persons injured; property loss about $600; path 50 yards wide, length unknown; moved northeast.

No. 38b, October 29.—2 p. m. (Central time); Coffeeville, Miss. One person injured; property loss about $1,750; path 150 feet wide, 750 feet long; moved northeast.

No. 38c, October 29.—3 p. m. (Central time); Delay, Lafayette County, Miss. No casualties; property loss $2,500; path 300 yards wide, length unknown; moved northeast.

No. 38d, October 29.—4 p. m. (Local time); New Orleans (waterspout tornado). No casualties; property loss $75,000; width of path variable, not exceeding 200 feet at widest point; length about a mile; moved northeast.

No. 39, November 25.—3 p. m. (Central time); near Mart, McLennan County, Tex. One person killed, 3 injured; property loss $2,000; path 30 to 60 yards wide, length 8 miles; moved northeast.

No. 40, November 26.—10.30 p. m. (Central time); near Tunica, Miss. One person killed, 1 injured; property loss about $1,500; path 300 yards wide, length unknown; storm said to have moved northwest.

Recapitulation as to loss of life by tornado and lightning.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Tornado	.....	.....	.....	17	515	3	3	4	* 114	4	2	.....	662
Lightning	.....	1	6	26	71	45	89	75	21	6	1	.....	341

* West India hurricane of Sept. 29-30.

THE WEST INDIA HURRICANE OF SEPTEMBER 29-30, 1896.

One of the most severe West India hurricanes ever experienced struck the Florida coast at Cedar Keys about 3.30 a. m. September 29. It passed thence to Lake Ontario and the St. Lawrence Valley in twenty-four hours at a rather uniform rate of about 46 miles per hour. As is usual in storms of this class the path of relatively great destruction was quite narrow, not extending over 50 miles at any part of its course.

The storm pursued a northeasterly direction through Florida and Georgia. When near Savannah, it seemed to curve slightly to the northward, passing thence almost due north to the St. Lawrence Valley.

The force of the wind varied greatly within quite narrow limits; places 50 to 100 miles on either side of the central path were not exposed to winds of unusual severity. The violence of the storm in the central portion also varied with time and place. The greatest violence was manifested in Florida during the early morning of the 29th. During the daylight hours of the same date, particularly in the afternoon, when the influence of the diurnal change in wind velocity might be expected to accelerate the movement of the storm winds, the violence of the latter seemed to diminish.

The second period of great violence began in Virginia about 9 p. m., and continued until a little after midnight, when the storm had reached central Pennsylvania. There was then another lull in the violence of the storm, and a subsequent renewal of intensity during the early morning of the 30th at Syracuse, and other points in Cayuga and Cortland counties, N. Y.

The rainfall in the center and on the eastern side of the hurricane's path was quite light as compared with that to the westward, and the rainfall in Florida, Georgia, and South Carolina was also light as compared with the fall farther north. The rainfall in a strip of country extending from North Carolina to the southern border of Pennsylvania, probably 100 miles wide and about the same distance west of the storm center, was exceedingly heavy, 5 and 6 inches being recorded at some stations, and 3 to 4 at others. As the storm reached central New York, the rain area spread far to the westward and the violence of the winds diminished.

The form and color of the clouds as observed in Washington during the early part of the storm greatly resembled ground fog driven by a high wind. They were very low, scarcely above the house tops, and of a pure white. With the shift of wind from the southeast to south and southwest the form and color of the clouds changed, but the darkness soon became so intense that further observations could not be made. The display of atmospheric electricity was almost continuous, and in the form of broad, diffuse flashes, though not of marked brilliancy or intensity. The flashes were very similar to the well-known phenomenon of sheet lightning in summer. There was no thunder at Washington. Thunder and lightning were not observed elsewhere in the storm's path except at a very few places.

The loss of life and property is summarized below:

State.	Loss of life.	Loss of property.	State.	Loss of life.	Loss of property.
Florida	68	$2,225,000	Maryland	8	$500,000
Georgia	25	933,000	Pennsylvania	2	2,140,000
South Carolina	5	25,000	New York	0	50,000
North Carolina	0	20,000			
Virginia	5	695,000	Total	114	7,031,000
District of Columbia	1	443,000			

Blank page retained for pagination

PART VII.

RAINFALL OF THE UNITED STATES.

Blank page retained for pagination

RAINFALL OF THE UNITED STATES.

By ALFRED J. HENRY, Chief of Division.

INTRODUCTION.

It is quite probable that rain falls in the United States at one point or another every day of the year. On very rare occasions the observers of the Weather Bureau report no precipitation at a given hour, but it should be remembered that their range of vision can cover at the utmost less than one-hundredth part of the whole area.

The theories of rainfall given in the books of twenty or thirty years ago are not now wholly accepted. There is one very simple principle, however, upon which no disagreement exists, viz, that in order to produce abundant rain the temperature of air must be suddenly cooled below the dew-point. When the air is thus cooled, a portion of the water vapor which is always present within it is changed to the liquid state, and that which formerly existed as a gas or vapor now becomes visible in the form of minute particles of fog or mist. The particles thus formed may float away with the wind or they may increase in size, coalesce, and fall to the ground of their own weight. Whether the condensation of vapor thus outlined results simply in cloud, or whether rain falls, depends on the magnitude of the temperature changes that take place in the air mass whose vapor is being condensed. A rise in temperature is inimical to further condensation; a fall is favorable to precipitation.

The precise manner in which air is cooled sufficiently to produce rain, whether by contact or by mixing, is not clearly apprehended. Cooling by expansion as air ascends is one of the most effective causes of rainfall. The ascensional movement of air is brought about in several ways, chief of which are: (1) The air may be forced up the side of a mountain into a region of diminished pressure and lower temperature, as happens whenever a mountain range runs in a direction at right angles to the prevailing winds; (2) in the warm season, the lower layers of the atmosphere under the effect of solar radiation, and probably other causes, frequently reach a state of unstable equilibrium, thus inducing ascensional currents—summer thunderstorms are largely a result of this process; (3) last, and doubtless most important of all, is the circulation of air in cyclonic storms, viz, a radial inflow from all sides and an ascensional movement in the center. A very large percentage of the rain of the United States is precipitated in connection with the passage of storms of the latter class.

The conditions which affect or control the rainfall may be divided into two classes, permanent and variable. The permanent conditions which contribute to an abundant rainfall are chiefly: (1) Nearness to the ocean or other large body of water; (2) a location within or near the track of cyclonic storms; (3) mountain ranges, particularly those running in a direction at right angles to the direction of the rain-bearing winds. These conditions may operate singly or in combination. Condition 1 alone is not always effective in producing rainfall, as witness the South Pacific Coast; likewise condition 2 alone is not so effective in the interior of continents far removed from an abundant supply of vapor, as in coastal regions. Montana and North Dakota, while lying directly within one of the great storm paths, are too far removed from the ocean to receive abundant rainfall, although other conditions are favorable.

The rainfall of the North Pacific Coast is an example of the combined effect of all three conditions.

The permanent conditions unfavorable to rainfall are chiefly those of geographic position, whether (*a*) on the leeward side of a mountain range running in a direction at right angles, or

nearly so, to the prevailing winds; (*b*) at a considerable distance from the average track of barometric depressions; or (*c*) remoteness from the ocean.

The variable conditions which influence rainfall are the concomitant changes of pressure, temperature, and wind movement. If we attempt to analyze these forces, we are at once led to the greater problem of the general atmospheric circulation and the modifying effect thereon of the North American Continent—a matter not within the scope of this discussion.

In general, the two classes of conditions which influence precipitation are so blended that it is difficult to assign a quantitative value to the effect of each. We may say, in general, the rainfall of any given place will range between limits previously ascertained by observation, but the character of the fall, whether light or heavy, depends, as before stated, on the daily changes of pressure, temperature, etc., which, in the present state of knowledge, can not be foreseen except for a short time in advance.

It is proposed to discuss the precipitation of the United States under the following topics, in the order named: I. The statistics used and their accuracy; II. Geographic distribution, annual amounts; III. Monthly distribution by districts and types; IV. The precipitation of the crop-growing season; V. Secular variation; VI. Details of precipitation by geographic districts; VII. Excessive precipitation.

I.—STATISTICS USED AND THEIR ACCURACY.

The exposure of the rain gauge.—In analyzing and comparing a large number of rainfall registers, covering different periods of time and made under varying conditions of gauge exposure, it is desirable that inquiry be made at the outset as to the dependence that can be placed upon them.

The problem of measuring the rain and snow that falls would appear at first sight to be quite simple; yet it is beset with many difficulties. It was discovered many years ago that the catch of a gauge on the roof of a building was less than on the ground, and many experiments have since been made with a view of determining the variation of rainfall with altitude above ground.

The experiments carried on under the direction of Dr. G. Hellman, of the German Meteorological Society of Berlin, for a period of seven years, lead to the following conclusions: The more a rain gauge is exposed to the wind, other circumstances being equal, the less rainfall it records, and the greater the altitude of the gauge above ground the less rain it collects, since the disturbing action of the wind is greater than on the surface of the ground. If, however, a gauge is properly protected from the wind, useful results may be obtained even in an elevated position.

Weather Bureau rainfall registers are derived almost wholly from roof exposures, and this must naturally be the case whenever an observing station is located in the midst of a large city. Moreover, the exigencies of the service often require changes from one building to another, thus breaking the continuity of the environment of the gauge and adding an element of probable uncertainty to the recorded results. Accepting the general principle that the depth of rain as determined by roof gauges falls short of the true amount, it is next of importance to ascertain the actual amount of the deficiency.

Comparison of roof and ground exposures.—Fortunately, for purposes of comparison between roof and ground gauges, independent rainfall observations have been made at a few points in rather close proximity to Weather Bureau gauges. At St. Louis, Mo., a series of rainfall measurements have been made at Forest Park, almost 4 miles due west of the Weather Bureau office. The rain gauge at the park is exposed in an open space, about 75 feet from the nearest object. The top of the receiver of the gauge is 4 feet above ground. The Weather Bureau office in the city is domiciled directly under the dome of the city post-office and custom-house. The rain gauge is placed on the roof, about 20 feet back from the edge and 100 feet above the street. It is fairly typical of the best of roof exposures in other cities. A comparison of the records of rain and melted snow at the two stations for the five years 1891–1895 shows that the catch of the Weather Bureau gauge in winter is slightly greater than that of the park. In the warmer months, particularly May and June, the park gauge catches the greater amount. On the average of the year the excess of the park above the Weather Bureau is about 2 inches, or 5 per cent. The rain gauge at the Philadelphia office of the Weather Bureau is situated on the roof of the post-office building, 166 feet above ground. Mr. L. M. Dey, the official in charge of that station, has made

a set of comparative readings between the post-office building gauge and a ground gauge at a point 3 miles east. The ground gauge, on the average of six years' observations, catches 3 inches (8 per cent) per annum more than the roof gauge. Other comparative readings in the vicinity of Philadelphia give substantially the same result. Mr. Dey, who has given the matter some study, is of opinion that the deficiency in the catch of the roof gauge is due to counter wind currents caused by the dome-shaped roof of the building.

In New York City a comparison between the rainfall registers made at the Weather Bureau office on lower Broadway, at an elevation of about 150 feet above the street, and in Central Park, at an elevation of 63 feet above the surface of the ground, for a period of twenty years, shows the catch of the Weather Bureau gauge to be 2.17 inches per annum (5 per cent) greater on the average than the Central Park gauge. In general, however, it does not seem possible to avoid the conclusion that the absolute amount of precipitation as registered by Weather Bureau gauges falls short of the true amount by quantities varying from 5 to 10 per cent of the annual fall.

Heretofore, in dealing with the statistical aspect of the subject, it has been sufficient to accept the available registers of the various geographic districts, whether of ten or twenty years' duration, as representing the true average precipitation.

The inquiry, what constitutes a true normal, is of considerable economic importance, in view of the fact that the average length of continuous rainfall registers in some of the States is less than ten years. The extensive western movement of settlers within the transmississippi section some years ago was influenced in a great measure by several successive years of abundant rainfall. There was an undercurrent of opinion, moreover, that the increased rainfall was in some measure due to the permanent occupation of the major portions of eastern Kansas, Nebraska, and adjacent States by an agricultural population. It was argued, and with some show of reason, that the breaking up of the prairie sod and the cultivation of the soil over such a large extent of territory must increase local evaporation, and consequently the rainfall. It will be shown on subsequent pages, however, that years of "fat" and "lean" rainfall do not alternate in orderly sequence, and that a number of consecutive years of heavy rains can not safely be accepted as indicating a permanent increase in rainfall.

A true normal may be defined as one which will not be materially altered, however long the observations may be continued. In order to reach a conclusion as regards the least number of consecutive years that will satisfy such a condition, several of the longest continuous registers of the United States were examined. The rainfall of eighty-three consecutive years has been measured at New Bedford, Mass. At St. Louis, Mo., the combined registers of Dr. George Engelman and the Weather Bureau cover a period of sixty years. Registers have also been maintained for many years at Philadelphia, Pa.; Cincinnati, Ohio; Fort Leavenworth, Kans., and at other places. It is not possible to obtain a statement of the details of exposure and methods of observation at each of the stations. In fact, there is a notable absence of historic details respecting all but a very few of the rainfall records that extend as far back even as 1850. The writer does not know of a single rainfall register that was established and has been perpetuated under ideal conditions of environment and observational accuracy. The New Bedford register has the merit of being kept by but two persons, the late Samuel Rodman and his son, Thomas R. Rodman, the present voluntary observer of the Weather Bureau for New Bedford.

The possible error of short-period rainfall registers.—In order to obtain the extreme variation or possible error of a ten-year period, the average of the first ten years of each register (1–10) was computed; then, dropping the first year, the average of the second period of ten years (2–11) was computed. Proceeding in like manner, 74 separate combinations of ten-year periods were obtained for the New Bedford record. Had observations been made during the ten years 1884–1893 only, the annual average, if computed from that period, would have been 50.4 inches, whereas the true annual average, as determined from the eighty-three years, is 43.5 inches. On the other hand, had the years 1837–1846 been used, an average of 38.8 inches would have been obtained. The *extreme* variation or actual error in the first case would have been 16 per cent; in the second, 11 per cent of the mean annual fall, the deviation above and below the mean being computed separately. In like manner the *extreme* variations in a ten-year period at Cincinnati were found to be 20 and 17 per cent, respectively; at St. Louis, 17 and 13 per cent; at Fort Leavenworth, 16 and 18 per cent, and at San Francisco, 9 and 10 per cent.

Increasing the number of years and proceeding as described above, it was found that the *extreme* variation of a twenty-five-year record, which is about the period covered by the combined observations of the Signal Service and Weather Bureau, was 10 per cent, both at New Bedford and St. Louis.

The conclusion is reached that at least thirty-five or forty years' continuous observations are required to obtain a result that will not depart more than ± 5 per cent from the true normal, even if the register be continued indefinitely. The *average* variation of a twenty-five-year period is about ± 5 per cent, and of a forty-year period about ± 3 per cent; that is to say, if any period of twenty-five years be selected from a register extending over eighty years, the average of the twenty-five-year period may be 5 per cent above the true normal, or it may be 5 per cent below it.

It is not intended that too great stress shall be put upon these facts, but rather to direct attention to the need of caution when dealing with short-term averages, especially when the period of observation is less than twenty years. The true normal precipitation of a large portion of the United States has not yet been accurately determined; indeed, as will be shown on subsequent pages, twenty-year averages have, in some cases, been reduced by from 5 to 8 per cent by the addition of the five years 1892–1896.

II.—GEOGRAPHIC DISTRIBUTION.

General features.—The distribution of rain and snow over the United States is graphically shown on Chart I. The registers used in the preparation of this chart were those of Weather Bureau stations that have been in operation since 1870, supplemented, in many cases, by private registers kept by cooperating voluntary observers. Probably a third of the whole area is represented by less than twenty consecutive years of observation, a period not long enough, as above stated, to determine the average fall with great accuracy.

The main facts regarding the geographic distribution of precipitation in the United States, as shown by the chart, are as follows: There is a narrow belt of very heavy rainfall on the Northwest Coast, extending from Cape Flattery on the north to midway of the Oregon Coast on the south, and inland as far as the summits of the Coast Range, including in that designation the main and collateral ranges of mountains extending from southern Oregon to the Straits of Fuca. Eastward and southward the annual fall diminishes, reaching a minimum on the lowlands and valleys included between the Coast Range on the west and the Sierra Nevada and the Cascade ranges on the east. The precipitation increases from the valleys to the mountain tops, thence falls away very rapidly with descent on the eastward slope until the great plateau is reached. Here the fall ranges from 5 to 15 inches, with isolated areas where it rises to 20 inches and over. There is but little increase as the western slope of the Rocky Mountains is reached, except in central and northern Idaho.

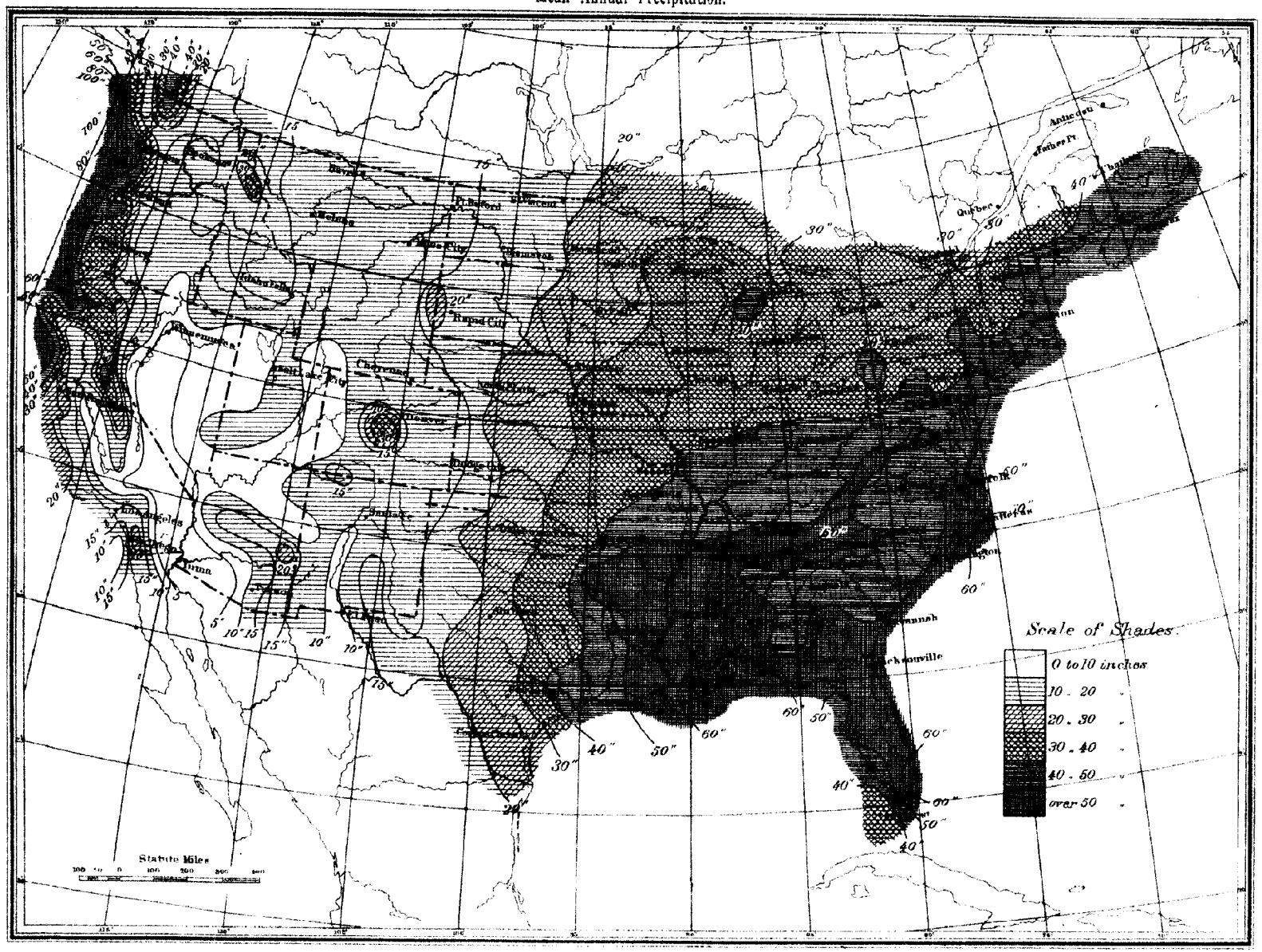
The precipitation on mountain slopes and summits is known to be large, but a quantitative statement of the annual depth can not yet be made. The rainfall of the foothills region east of the Rocky Mountains ranges from 10 to 18 inches, and it increases slowly toward the one hundredth meridian. Eastward of that meridian the annual precipitation varies from a little under 20 inches to about 60 inches on the Florida and Gulf coasts. There is a gradual decline both from the Atlantic Coast westward and from the Gulf Coast northward. The diminution in fall from New Orleans northward to St. Paul is 32 inches; from Eastport westward to St. Paul, 12 inches.

Further information regarding the distribution of precipitation by districts will be found, under Topic 5.—Details of precipitation by geographic districts.

Addition of five-year period, 1892–1896, effect of on averages.—The last official rainfall bulletin issued in 1894, contained the monthly and annual averages to the end of 1891. (Bulletin C.—Rain and Snow of the United States.) The addition of the five-year period 1892–1896 does not materially change the normals or averages heretofore determined, except over the west Gulf Coast, where the old normals have been reduced between 3 and 4 inches per annum at several stations having twenty years of continuous observations. There is also a reduction in the normals of Tennessee and North Carolina of from 1 to 3 inches, and, generally, there is a slight reduction over the Mississippi and Ohio valleys and the eastern seaboard as far north as New York City. On the other hand, there is a slight increase on the Pacific Coast and at isolated stations in the arid regions.

Mean Annual Precipitation.

Chart I.

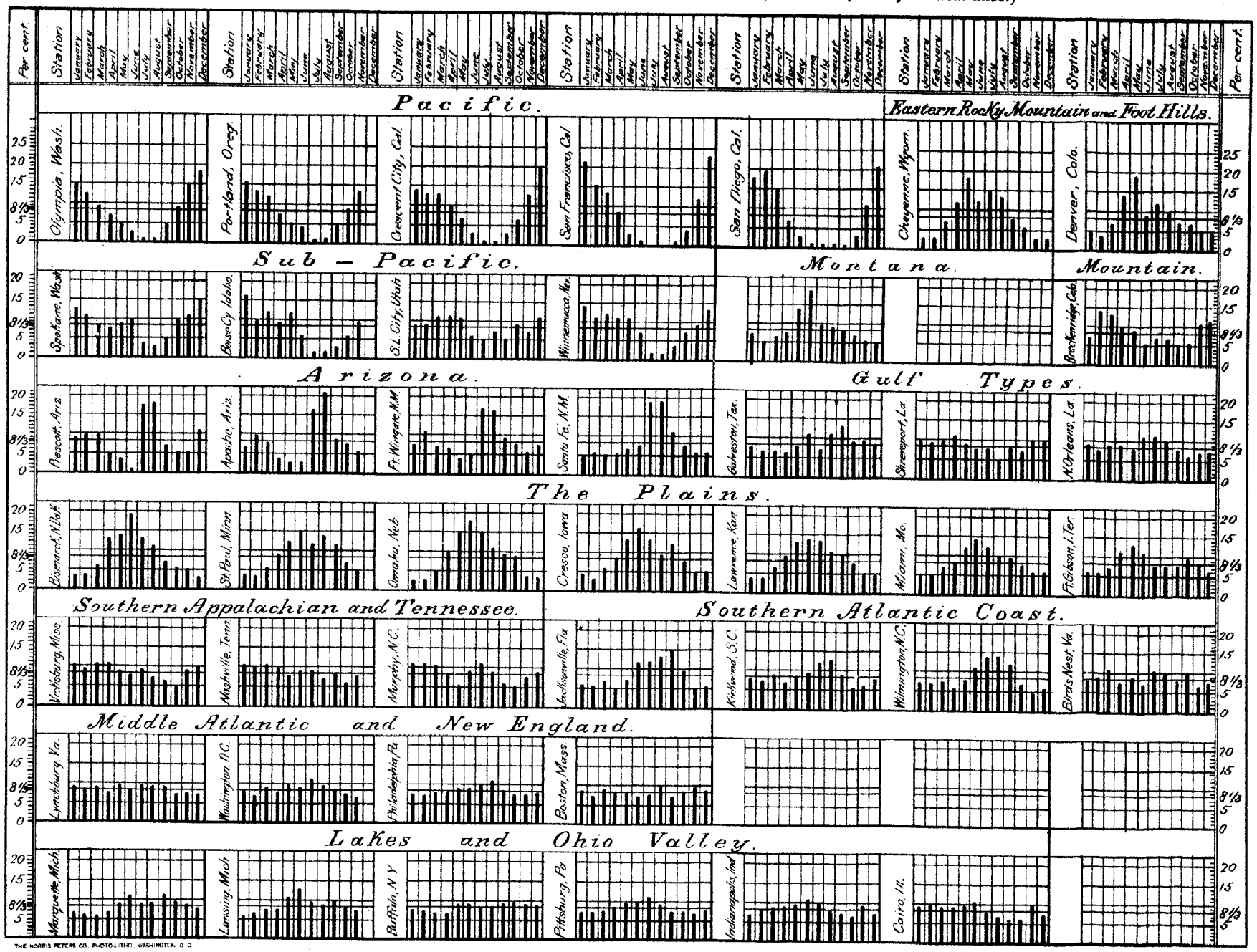


THE NORRIS PETERS CO. PHOTO-LITHO. WASHINGTON, D.C.

Types of Monthly Distribution of Precipitation in the United States.

Rainfall Distribution in the U. S. (Percentage of fall in each month represented by heavy vertical lines.)

Plate I.



THE NORRIS PETERS CO., PHOTO-LITHO. WASHINGTON, D. C.

During the greater portion of the period 1892–1896 drought prevailed in many parts of the United States. It will be instructive, therefore, to compare the rainfall of the last five years with the averages as deduced from observations of former years. One hundred and three stations were used in the comparison, 25 of which showed a rainfall during the five years greater than the average. These were distributed as follows: 14 on the Pacific Coast; 2 in Wyoming; 2 in New York; 1 each in Montana, New Mexico, Minnesota, Kansas, Ohio, Virginia, and South Carolina. At the remaining 78 stations the rainfall was less than the average; at some stations decidedly so. The greatest deficiency—a little over 10 inches per annum on the average—was registered at the 4 stations, Vicksburg, Shreveport, New Orleans, and Galveston.

III.—MONTHLY DISTRIBUTION BY DISTRICTS AND TYPES.

The fundamental data upon which all questions of water supply must depend are the monthly amounts of rainfall. Tables of annual precipitation tell us how much rain or snow falls on the average during the course of a year, but they afford no indication, directly or indirectly, as to whether the rain comes when it will be of the greatest service to agriculture or whether it falls after the time of maturity of the staple crops.

If the precipitation of the year were evenly distributed, each month would receive 8⅓ per cent. To discover the proportion that is received each month throughout the United States is the object of the present chapter.

For convenience of comparison the monthly averages of a number of selected stations have been reduced to percentages of the annual fall. Classifying these by geographic districts it is soon noticed that the distribution over comparatively large areas is practically uniform and that the profile of a single station may be safely used to represent the distribution of the entire district. If now the geographic limits of the districts having different rainfall conditions be ascertained, it will be of material aid in reaching a clear conception of the rainfall system of the United States. We shall find that, generally, a single set of conditions operates to modify or control the rainfall of the various geographic districts, and we may, therefore, view the rainfall of the United States not as a single concrete system, but rather as being composed of a number of separate and distinct types as follows, viz:

Pacific, sub-Pacific, Arizona, Mountain, Eastern Foothills, Plains, Gulf, Southern Appalachian and Tennessee, South Atlantic, Middle Atlantic and New England, Lake Region and Ohio Valley.

Pacific type.—This type is found in all of the territory west of the Cascade and Sierra Nevada ranges, and also obtains in a fringe of country to the eastward of the mountain summits. It is represented by the profiles of Olympia, Wash.; Portland, Oreg.; Crescent City, San Francisco, and San Diego, Cal. (Plate I.) The heavy black vertical lines represent the precipitation of each month expressed as a percentage of the annual fall. A light horizontal line has been inserted at the point on the vertical scale corresponding to 8⅓ per cent for convenience in comparing the distribution at the different stations, it being remembered that if the precipitation were uniformly distributed throughout the year the heavy vertical lines would terminate at the point where they intersect the line of 8⅓ per cent.

The distinguishing characteristic of the Pacific type is a wet season, extending from October to March, and a practically rainless summer, except in northern California and parts of Oregon and Washington. About half of the yearly precipitation comes in the months of December, January, and February, the remaining half being distributed throughout the seven months, September, October, November, March, April, May, and June.

Sub-Pacific.—The term "sub-Pacific" has been given to that type of rainfall which obtains over eastern Washington, Idaho, Nevada, and Utah. The influences that control the precipitation of this region are much similar to those which prevail west of the Sierra Nevada and Cascade ranges. There is not, however, as in the Pacific type, a steady diminution of the winter precipitation with the approach of spring, but rather an increase which culminates in the late spring months. (See the profile of Spokane.) This fact is of very great importance to agricultural interests, whether the natural rainfall is sufficient for the growth and maturity of staple crops or not. In the latter case the rain comes at a time when most needed for irrigation. Salt Lake City has been placed within the sub-Pacific group, although its profile is not similar in all respects to those of the remaining stations. The differences are probably due to the influence of the lake.

Arizona.—The Arizona type, so called because it is more fully developed in that Territory than elsewhere, prevails over Arizona, New Mexico, and a small portion of southern Utah and Nevada. This type, of which Prescott, Fort Apache, Fort Wingate, and Santa Fe are examples, differs from all others in the fact that about 35 per cent of the rain falls in July and August. May and June are generally the months of least rainfall. The summer rains are essentially a feature of the mountain and plateau systems of both Territories, and are believed to be due largely to local convection induced by excessive insolation on the barren, rocky surface of the mountain sides and summits. The winter rains are believed to be due to migratory areas of low pressure pertaining to the general system of storm movement. The character of the winter rains, whether light or heavy, depends largely on the frequency of atmospheric disturbances and especially their movement in latitude.

Mountain.—The Mountain type is represented on the diagram [Plate I] by one station only, Breckenridge, Colo., situated on the western divide of the Rocky Mountains at an elevation of about 9,500 feet above sea level. The observations extend over a little more than seven years, and the type is, therefore, a provisional one only. It is characterized by heavy snowfall in the winter and spring months and a secondary maximum of rain in July and August, and seems to stand in rather close relation to the Pacific and Arizona types.

Montana.—The rainy season in Montana is confined to May and June, 33 per cent of the annual amount falling in these months. The rainfall of the remainder of the year, although small, is well distributed for agricultural purposes.

The Eastern Foothills.—A type closely allied to that of the Plains to the eastward. The Rocky Mountains form a dividing line between diametrically opposite rainfall types. West of the mountains, except in Arizona and New Mexico, the bulk of rain falls in the colder months of the year, but on crossing the range, the rainy season is transferred to the warmer months. In the Foothills region it occurs in April and May; in Montana, in May and June. On the Plains proper and eastward to Michigan and Indiana, it falls in May, June, and July, while on the South Atlantic and Gulf coasts it occurs in August and September, with but few exceptions.

The rainfall of the Eastern Foothills region is not abundant, but what there is comes at the most opportune time of the year. This type is represented by the profiles of Denver and Cheyenne.

The Plains.—The Plains type is a very important one, covering as it does the great wheat and corn region of the interior valleys. It embraces the greater part of the Dakotas, all of Minnesota and Wisconsin, part of Michigan and Illinois, all of Iowa, Nebraska, and Kansas, and the greater part of Missouri. This extensive region is characterized by a scant winter precipitation over the more northern States and moderately heavy rains during the growing season.

The profiles for Bismarck, N. Dak.; St. Paul, Minn.; Omaha, Nebr.; Cresco, Iowa; Lawrence, Kans., and Miami, Mo., illustrate the general features of the Plains type. The winter precipitation of the group decreases with increase of latitude, and there is a secondary maximum in September near the Great Lakes, as may be seen by examining the profiles of St. Paul and Marquette.

The rain of the Plains comes almost wholly as summer thundershowers, and in connection with migratory areas of low pressure that pass across the country.

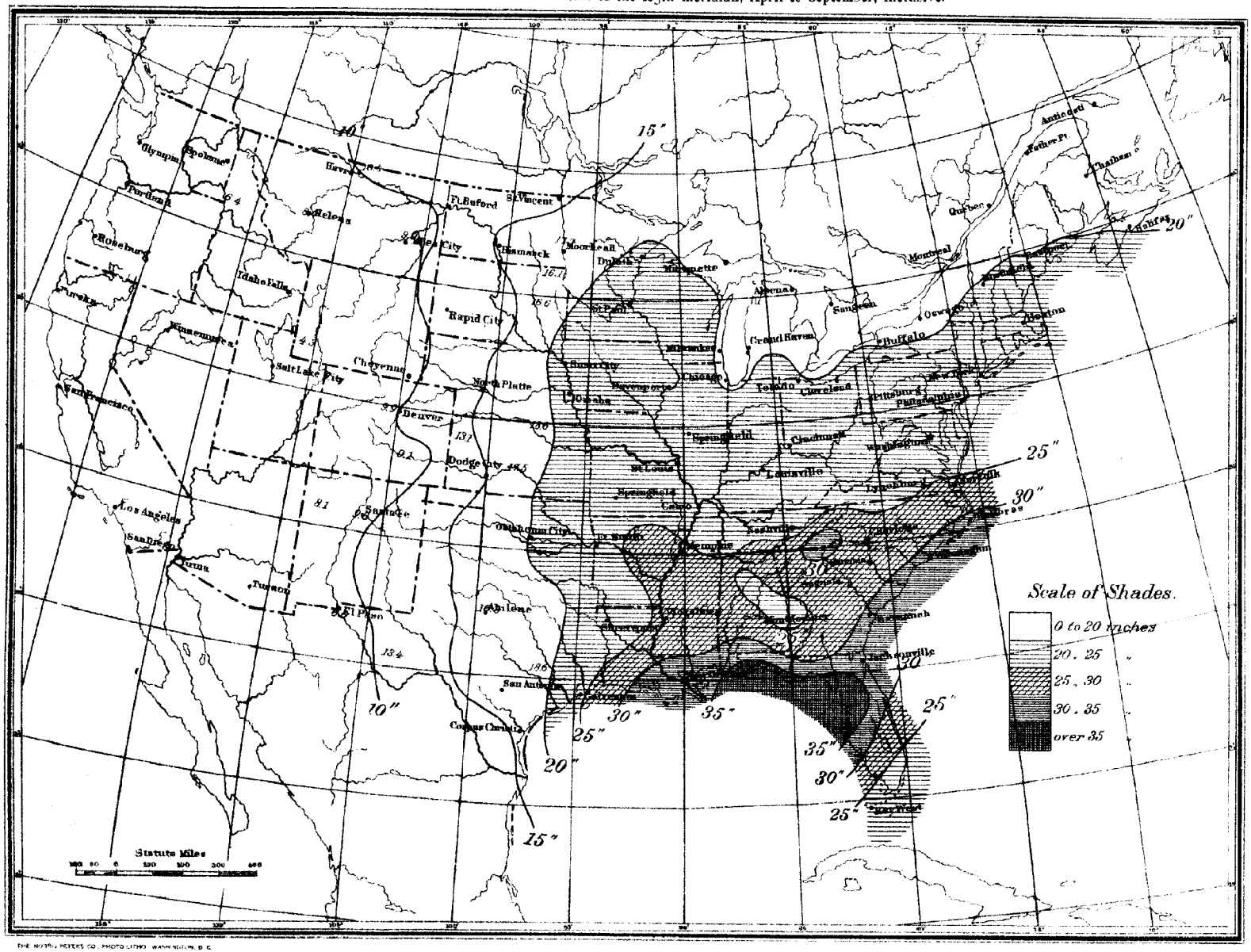
Gulf.—The Gulf type is more complex than any of those hereinbefore considered. The distribution throughout the year is also more uniform, comparatively few months receiving less than 8⅓ per cent of the yearly fall. On the west Gulf the rainfall of June, August, and September is heavier than at other seasons of the year. The maximum of the year on the middle coast, as in Alabama, occurs in March; on the Florida coast in August and September.

Southern Appalachian and Tennessee.—This type has its chief maximum in the late winter and spring, and its chief minimum in October. It prevails in northern Mississippi, Tennessee, western North Carolina, extreme northern Georgia, and northeastern Alabama. The rainfall on the southern extremity of the Appalachian system is quite heavy, and is exceeded only by the rainfall of western Washington and Oregon.

South Atlantic.—Includes the South Atlantic Coast from Virginia southward to Florida. The time of maximum rain in this region is deferred until the months of July, August, and September—the season of subtropical rains in Florida and on the Gulf Coast.

Normal Rainfall of the United States east of the 105th meridian, April to September, inclusive.

Chart II.



THE NORRIS PETERS CO., PHOTO-LITHO. WASHINGTON, D. C.

Middle Atlantic and New England.—The distribution of rain in this region is more uniform than in any other part of the country. The range between months of greatest and least rainfall is very small and of but little practical importance.

Lake region and Ohio Valley.—The distribution in the upper Lake region approaches closely to that of the Plains, with the exception of a second maximum of rain in September, hereinbefore mentioned. The rainfall of the Ohio Valley differs chiefly from that of the Plains in the greater amount that falls in the winter. This is to be expected, since the atmospheric disturbances that originate in the Gulf region and Texas generally pass directly over the valley, giving copious rains in front and on the south side of the storm's path.

IV.—THE PRECIPITATION OF THE CROP-GROWING SEASON.

Pacific Coast compared with the East.—The rainfall conditions of the Pacific Coast are quite different from those of the East, as has been stated on the preceding pages. Grain sown in the fall begins to sprout with the first rain, and thenceforth grows more or less slowly throughout the winter. It is ready for the reaper from the 1st of June to the 1st of July, according to latitude, and with the harvest comes the end of the rains. Fall-sown grain in the East makes little, if any, growth during the winter, but with the advent of warm weather in the spring the plant grows rapidly under favorable conditions of heat and moisture. April to August may therefore be called the critical months for the staple crops in the eastern two-thirds of the United States, and it is with the rainfall of these months that the agriculturist is chiefly concerned. The tables below show the normal rainfall of each month of the growing season, including September, the total for the season, the greatest and least seasonal fall during the period of observation, and the ratio of the seasonal to the annual fall.

TABLE I.—MONTHLY AND SEASONAL AVERAGES OF RAINFALL, ETC.

Stations.	Latitude.	Longitude.	Elevation.	Number of years.	April.	May.	June.	July.	August.	September.	Total.	Maximum.	Minimum.	Year of minimum rainfall.	Percentage of annual.
MAINE.	° ′	° ′	Feet.		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.		
Brunswick	43 54	69 57	64	20	4.2	4.7	3.8	3.8	4.9	3.2	24.6	37.6	14.7	1846	49
Cornish	43 44	70 51	784	40	3.3	3.6	3.5	4.2	4.3	3.4	22.3	34.8	14.9	1880	48
Eastport	44 54	66 59	30	23	3.0	3.7	3.5	3.9	3.5	3.2	20.8	30.6	11.2	1894	46
Gardiner	44 14	69 43	23	53	3.4	3.8	3.2	3.2	3.6	3.2	20.4	31.4	12.3	1844	47
Orono	44 56	68 44	71	24	2.8	3.4	3.4	3.3	3.6	3.4	19.9	29.2	13.4	1895	45
Portland	43 39	70 15	12	25	3.0	3.6	3.4	3.6	3.8	3.1	20.5	25.4	15.2	1883	48
NEW HAMPSHIRE.															
Concord	43 12	71 32	252	42	2.8	3.3	3.1	3.7	3.9	3.4	20.2	27.6	12.7	1869	50
Hanover	43 42	72 49	545	48	2.3	3.2	3.5	3.4	3.7	3.0	19.1	28.9	12.8	1880	53
Lakeport *a*	43 32	71 28	.....	23	2.7	3.3	3.5	4.0	3.8	3.6	20.9	26.9	16.3	1894	49
Stratford	44 40	71 39	1,000	24	2.4	3.4	3.4	4.0	4.0	3.5	20.7	31.0	14.1	1870	53
VERMONT.															
Burlington	44 28	73 12	268	53	1.9	3.1	3.2	4.0	3.6	3.5	19.3	34.4	11.8	1894	59
Lunenburg	44 28	71 41	850	44	2.6	3.6	3.5	3.9	3.8	3.4	20.8	40.8	12.5	1854	53
Strafford	43 52	72 24	500	24	2.5	3.3	3.5	4.1	3.7	3.4	20.5	29.4	14.4	1896	52
MASSACHUSETTS.															
Amherst	42 22	72 32	235	61	3.1	3.9	3.7	4.5	4.4	3.4	23.0	35.0	14.0	1894	52
Boston	42 21	71 04	12	79	3.8	3.7	3.2	3.6	4.3	3.4	22.0	41.7	11.8	1836	48
Fall River	41 42	71 09	259	22	3.9	4.0	3.1	3.5	4.4	3.3	22.2	30.4	16.4	1886	44
Fitchburg	42 36	71 50	433	32	2.9	3.8	3.3	3.7	4.3	3.2	21.2	32.2	13.5	1883	51
Lowell	42 39	71 17	104	42	3.6	3.7	3.3	3.8	4.4	3.3	22.1	34.3	14.5	1883	49
New Bedford	41 39	70 56	100	83	3.6	3.8	3.0	3.1	3.9	3.3	20.7	34.8	11.6	1849	48
Springfield	42 05	72 35	70	47	3.2	4.2	3.8	4.5	4.5	3.4	23.6	33.2	12.3	1864	52
Taunton	41 54	71 05	30	22	3.6	3.3	2.5	3.5	4.2	2.8	19.9	33.1	9.6	1883	44
Worcester	42 16	71 49	473	43	3.7	4.1	3.1	3.8	4.5	3.5	22.7	36.0	13.9	1883	49
RHODE ISLAND.															
Providence	41 50	71 25	11	65	3.7	3.8	3.3	3.3	4.2	3.2	21.5	34.6	11.3	1836	47
CONNECTICUT.															
Hartford	41 45	72 40	38	27	3.0	3.6	3.0	4.1	4.6	3.2	21.5	32.9	13.3	1870	47
New Haven	41 18	72 56	10	45	3.3	3.9	3.1	4.5	4.6	3.8	23.2	38.2	16.0	1894	51
New London	41 21	72 05	8	26	3.7	3.6	3.2	4.0	4.7	3.4	22.6	42.2	12.6	1894	47
Middletown	41 33	72 39	37	33	3.4	3.8	3.5	4.3	4.8	3.6	23.4	37.2	14.2	1894	48
Southington	41 35	72 51	152	26	3.1	3.2	2.8	3.9	4.6	2.9	20.5	31.4	12.6	1883	47
Wallingford	41 27	72 49	73	35	3.6	4.2	3.6	4.2	5.0	3.6	24.2	37.1	15.0	1881	49

a Formerly Lake Village.

TABLE I.—MONTHLY AND SEASONAL AVERAGES OF RAINFALL, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Number of years.	April.	May.	June.	July.	August.	September.	Total.	Maximum.	Minimum.	Year of minimum rainfall.	Percentage of annual.
NEW YORK.	° ′	° ′	Feet.		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.		
Albany	42 40	73 45	32	69	2.8	3.6	4.1	4.2	4.0	3.5	22.2	36.8	14.2	1896	56
Buffalo	42 53	78 53	587	27	2.5	3.4	3.5	3.2	3.2	3.3	19.1	32.8	11.4	1881	50
Cooperstown	42 42	74 57	1,300	43	2.6	3.6	4.1	4.3	4.1	3.4	22.1	33.4	12.8	1881	57
Gouverneur	44 25	75 35	423	21	2.1	2.7	2.7	2.8	2.3	3.1	15.7	30.1	5.4	1842	50
New York	40 43	73 58	52	61	3.4	4.0	3.8	4.0	4.7	3.4	23.3	42.6	12.5	1849	52
North Salem	41 20	73 34	361	23	3.4	4.4	3.5	4.0	4.1	3.1	22.5	35.2	15.6	1841	55
Rochester	43 08	77 42	494	27	2.5	3.3	3.3	3.0	3.0	2.4	17.5	21.7	9.6	1887	50
Ithaca	42 27	76 30	375	36	2.2	3.4	3.7	3.5	3.0	3.0	18.8	27.5	11.3	1879	57
NEW JERSEY.															
Atlantic City	39 22	74 25	13	23	3.3	3.1	3.0	3.5	4.3	3.2	20.4	33.4	13.8	1895	50
Trenton	40 14	74 45	33	24	3.7	4.1	3.9	5.5	5.3	4.0	26.5	39.4	17.4	1895	53
Lambertville	40 23	74 57	75	25	3.3	4.4	3.8	4.4	4.9	4.3	25.1	42.3	14.9	1848	54
Newark	40 45	74 10	13	52	3.5	4.0	3.5	4.4	5.0	3.8	24.2	40.1	12.1	1881	52
New Brunswick	40 30	74 27	48	43	3.7	3.9	3.9	4.7	4.9	3.8	24.9	37.2	11.7	1881	53
South Orange	40 45	74 15	141	26	3.3	3.2	3.6	4.9	5.2	4.0	24.2	49.9	12.5	1881	51
Vineland	39 29	75 01	97	25	3.3	3.9	3.3	4.3	4.9	4.0	23.7	33.0	14.2	1884	50
PENNSYLVANIA.															
Blooming Grove	41 23	75 09	.....	25	3.2	4.0	4.1	5.0	4.0	3.1	24.3	42.8	12.8	1881	55
Dyberry	41 38	75 18	1,100	25	2.5	3.4	3.1	4.6	3.8	2.8	20.2	27.5	14.2	1875	53
Erie	42 07	80 05	686	23	2.5	3.8	3.9	2.8	3.3	4.0	20.3	27.3	11.5	1891	49
Gettysburg	39 49	77 15	624	24	3.5	4.0	3.5	3.4	3.6	3.0	21.0	32.1	11.6	1845	54
Harrisburg	40 16	76 53	320	25	3.0	4.6	4.4	4.2	3.9	3.6	23.7	37.4	11.5	1849	59
Pittsburg *a*	40 22	79 59	745	54	3.0	3.5	3.6	4.0	3.4	2.9	20.4	33.5	12.8	1854	56
Philadelphia	39 53	75 10	32	72	3.4	3.8	3.8	4.0	4.3	3.5	22.8	41.1	10.3	1881	54
DISTRICT OF COLUMBIA AND MARYLAND.															
Washington	38 54	77 03	110	41	3.4	4.1	3.9	4.5	4.0	3.5	23.4	39.9	14.3	1894	55
Baltimore	39 17	76 37	68	26	3.4	3.8	4.0	4.7	4.0	3.9	23.8	38.7	15.0	1893	54
Cumberland	39 39	78 45	639	24	2.5	3.4	3.8	3.4	3.2	2.8	19.1	29.4	11.0	1885	57
Emmitsburg	39 43	77 20	498	12	3.5	4.6	3.9	3.4	3.3	3.8	22.5	33.8	13.5	1885	52
Fallston	39 30	76 24	300	25	3.5	4.3	4.1	4.4	4.7	4.5	25.5	42.9	15.1	1881	53
Frederick	39 24	77 24	415	15	3.7	4.4	4.6	3.5	2.7	3.7	22.6	31.2	15.0	1854	56
Fort McHenry	39 16	76 35	36	45	3.0	3.4	3.4	3.5	4.0	3.4	20.7	42.9	11.5	1855	53
Woodstock College	39 19	76 51	820	21	3.2	4.0	3.7	3.7	4.0	4.0	22.6	30.7	11.6	1884	51
VIRGINIA.															
Lynchburg	37 22	79 12	523	26	3.3	4.0	3.5	4.1	3.9	3.9	22.7	39.4	12.3	1881	53
Norfolk	36 51	76 17	12	26	4.3	4.2	4.4	5.8	6.3	4.7	29.7	43.3	19.9	1884	57
Powhatan Hill	38 13	77 12	317	20	2.4	3.4	3.4	3.6	4.5	2.8	20.1	28.0	12.2	1872	61
Prospect Hill Farm	37 25	75 52	573	27	3.7	4.0	3.2	4.7	4.6	3.7	23.9	39.3	9.2	1884	51
Wytheville	36 55	81 00	2,230	26	3.4	3.7	4.0	4.0	4.0	3.7	22.8	30.7	17.3	1885	55
NORTH CAROLINA.															
Hatteras	35 15	75 40	20	22	4.7	4.6	4.6	6.4	6.4	6.4	33.1	52.0	23.7	1887	50
Kittyhawk	36 00	75 42	22	18	4.4	3.7	4.6	5.8	6.8	4.6	29.9	47.3	16.0	1893	53
Lenoir	35 58	81 30	1,186	25	3.5	4.8	4.1	5.1	5.7	4.6	27.8	39.7	14.8	1881	55
Southport	33 55	78 01	34	20	2.8	3.4	3.9	6.8	5.7	5.6	28.2	38.3	20.2	1882	56
Wilmington	34 14	77 57	52	26	2.9	4.2	5.7	7.1	7.3	6.3	33.5	56.5	27.0	1882	62
Weldon	36 24	77 32	80	24	3.4	4.6	4.0	5.1	5.3	4.0	26.4	39.3	16.5	1881	56
SOUTH CAROLINA.															
Aiken	33 32	81 34	520	23	3.4	3.7	4.6	4.9	5.9	3.5	26.0	35.6	16.6	1861	54
Kirkwood	34 17	80 33	232	32	3.1	3.6	3.9	5.2	5.3	3.9	25.0	37.9	12.8	1869	57
Charleston	32 47	79 56	15	80	2.4	3.6	4.8	6.6	7.2	5.7	30.3	52.0	11.3	1850	62
GEORGIA.															
Atlanta	33 45	84 23	1,050	27	4.2	3.6	4.1	3.9	4.5	3.7	24.0	36.3	16.0	1878	48
Augusta	33 28	81 54	134	27	3.4	3.4	4.6	5.4	5.0	3.7	25.5	37.4	17.4	1870	53
Forsyth (near)	33 00	83 55	735	23	3.8	3.3	4.7	4.9	5.7	3.3	25.7	38.5	16.1	1878	48
Quitman (near)	30 45	83 39	170	15	4.0	3.0	6.6	6.2	5.6	4.1	29.5	33.0	19.8	1886	55
Savannah	32 05	81 05	32	48	2.7	3.8	5.8	6.6	7.8	5.2	31.9	53.9	19.0	1881	63
FLORIDA.															
Fort Barrancas	30 21	87 18	20	23	4.9	4.6	5.8	8.4	9.9	5.9	39.5	77.4	18.7	1851	56
Fort Brook	28 00	82 28	20	24	1.9	2.9	7.6	9.8	9.5	6.2	37.9	73.1	22.7	1857	71
Key West	24 33	81 49	27	49	1.2	2.9	4.5	3.8	5.0	6.6	24.0	46.1	12.8	1893	63
Jacksonville	30 20	81 39	24	27	2.7	3.8	6.1	6.2	6.7	8.2	33.7	52.3	23.7	1896	62
ALABAMA.															
Greensboro	32 41	87 36	220	23	4.0	3.5	3.7	3.6	5.2	3.1	23.1	32.1	13.9	1858	46
Greene Springs	32 47	87 43	500	23	6.0	3.8	4.4	4.5	4.6	2.8	26.1	36.3	17.5	1870	48
Mobile	30 41	88 02	4	26	4.6	4.3	5.9	6.7	6.8	5.0	33.3	49.6	20.0	1894	53
Montgomery	32 23	86 18	162	24	4.8	4.0	4.7	4.6	4.0	2.9	25.0	36.7	18.3	1875	48
Mount Vernon Arsenal	31 12	88 02	200	30	4.6	3.9	6.1	6.2	5.9	3.7	30.4	46.6	18.9	1891	49
Union Springs	32 12	85 39	485	26	4.4	3.2	3.9	3.8	3.9	2.5	21.7	33.0	10.1	1870	47
MISSISSIPPI.															
Columbus	33 31	88 28	208	34	5.8	3.6	4.1	4.7	4.2	3.4	25.8	40.3	14.2	1860	47
Natchez	31 34	91 27	206	23	5.2	4.1	4.0	5.1	4.5	3.7	26.6	38.5	16.8	1862	49
Vicksburg	33 22	90 53	190	42	5.3	4.4	3.9	4.5	3.4	3.3	24.8	42.6	7.8	1851	47

a Combined with Allegheny Arsenal.

TABLE I.—MONTHLY AND SEASONAL AVERAGES OF RAINFALL, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Number of years.	April.	May.	June.	July.	August.	September.	Total.	Maximum.	Minimum.	Year of minimum rainfall.	Percentage of annual.
LOUISIANA.	° ′	° ′	Feet.		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.		
Baton Rouge	30 26	91 11	19	24	4.7	4.5	5.0	6.3	5.9	4.2	30.6	81.9	17.1	1844	51
New Orleans	29 58	90 04	6	26	5.2	4.8	6.7	6.4	6.0	4.6	33.7	49.7	15.2	1891	56
Shreveport	32 30	93 40	183	25	5.2	4.2	3.7	3.4	2.1	3.7	22.3	38.1	13.7	1883	46
ARKANSAS.															
Helena	34 36	90 36	197	21	6.7	4.5	4.7	4.5	3.5	3.9	27.8	53.2	15.0	1881	48
Washington	33 34	93 41	660	28	6.0	5.2	3.9	4.7	3.9	3.1	26.8	40.8	14.6	1851	49
Fort Smith	35 22	94 24	418	33	4.8	4.7	4.2	3.9	3.4	3.1	24.1	37.4	10.4	1856	58
TEXAS.															
Austin	30 16	97 42	480	30	3.0	4.2	2.7	1.8	2.7	4.2	18.6	32.0	9.3	1856	56
El Paso	31 45	106 30	3,697	33	0.1	0.3	0.5	1.6	1.9	1.6	6.0	14.8	1.1	1860	68
Fort Brown	25 52	97 28	165	28	0.7	2.1	1.9	2.1	2.9	5.6	15.3	38.9	3.7	1850	59
Fort Clark	29 14	100 51	1,000	27	1.5	3.2	2.5	1.6	2.5	3.6	14.9	30.0	4.1	1893	66
Fort Duncan *a*	28 38	100 15	800	26	1.1	2.5	2.9	2.1	2.9	3.7	15.2	25.1	4.6	1893	70
Fort McIntosh	27 31	99 32	460	30	1.3	2.3	2.3	1.8	2.8	2.6	13.1	19.2	5.0	1856	64
Galveston	29 17	94 49	3	26	2.8	3.7	4.9	3.1	5.3	6.0	25.8	43.7	9.1	1896	58
San Antonio	29 24	98 29	686	26	2.5	3.0	3.1	2.0	3.6	3.6	17.8	27.2	4.9	1858	59
WEST VIRGINIA.															
Morgantown	39 36	79 59	963	19	3.5	3.6	4.7	5.2	4.6	3.7	25.3	37.2	17.5	1894	54
Wheeling	40 03	80 43	637	12	2.8	4.1	3.7	3.7	4.1	2.8	21.2	36.5	12.9	1894	55
OHIO.															
Cincinnati	39 06	84 30	490	62	3.3	4.0	4.4	3.9	3.8	3.0	22.4	33.3	11.9	1870	53
Cleveland	41 30	81 42	582	41	2.7	3.5	3.9	3.4	3.1	3.6	20.2	31.4	12.5	1895	55
Marietta	39 30	81 26	611	69	3.3	3.9	4.1	4.4	3.9	3.1	22.7	38.3	14.5	1894	54
North Lewisburg	40 11	83 35	1,030	25	3.1	3.9	4.0	4.4	3.3	3.2	21.9	33.5	10.2	1895	54
Portsmouth	38 48	83 03	528	64	3.2	3.5	4.0	3.9	3.4	2.8	20.8	35.1	9.7	1854	51
Steubenville	40 25	80 41	663	39	3.4	3.9	4.0	4.0	3.9	3.5	22.7	33.7	13.5	1854	55
Toledo	41 40	83 34	579	26	2.2	3.4	3.4	3.1	2.7	2.4	17.2	26.5	10.2	1893	55
Wauseon	41 36	84 07	767	23	3.0	4.2	4.1	3.4	2.7	2.6	20.0	35.2	10.2	1895	54
KENTUCKY.															
Louisville *b*	38 15	85 45	432	54	4.2	4.1	4.7	4.1	3.8	3.0	23.9	37.0	14.6	1881	51
Newport Barracks	39 06	84 29	515	24	3.3	4.1	4.2	4.3	3.5	3.4	22.8	40.2	10.5	1870	57
TENNESSEE.															
Austin	36 12	87 10	568	17	4.8	3.4	5.1	4.0	3.7	3.8	24.8	34.2	13.3	1887	48
Glenwood Cottage *c*	36 28	87 20	394	30	4.9	3.8	4.1	3.7	3.5	2.9	22.9	33.6	16.3	1860	48
Knoxville	35 56	83 58	900	26	4.9	4.0	4.2	4.4	4.0	2.7	24.2	38.2	15.6	1894	48
Memphis	35 09	90 03	245	26	5.4	4.4	4.6	3.4	3.5	3.1	24.4	49.2	12.8	1887	46
Nashville	36 10	86 47	435	32	4.7	3.9	4.3	4.3	3.6	4.1	24.9	29.8	15.4	1871	50
Chattanooga	35 04	85 15	783	18	4.5	4.1	4.7	4.1	4.1	3.7	25.2	37.3	13.6	1894	47
INDIANA.															
Evansville	38 02	87 29	386	18	4.5	4.4	4.5	3.6	3.8	3.3	24.1	33.8	15.1	1887	51
Indianapolis	39 46	86 10	722	27	3.6	4.0	4.5	4.2	3.3	3.1	22.7	36.7	10.9	1870	54
Laconia	38 05	86 07	530	23	3.8	3.8	4.3	3.3	3.2	2.9	21.3	31.5	13.6	1874	49
Logansport	40 45	86 22	586	19	3.5	5.0	4.2	2.9	2.9	3.1	21.6	33.8	11.0	1895	55
New Harmony	38 10	87 54	350	25	3.4	3.7	3.9	3.8	3.4	3.2	21.4	30.8	10.4	1871	54
Richmond	39 51	84 53	968	22	3.6	4.3	3.9	3.5	3.9	4.1	23.3	38.0	10.4	1856	55
Spiceland	39 48	85 18	1,063	28	2.9	3.8	4.4	4.1	3.3	3.1	21.6	38.2	11.1	1871	54
Vevay	38 46	84 59	525	31	3.7	4.0	4.9	3.8	3.2	3.2	22.8	33.1	12.4	1895	53
ILLINOIS.															
Augusta	40 12	90 57	674	19	4.0	4.1	4.1	4.8	3.6	4.1	24.7	36.7	14.8	1857	63
Aurora	41 47	88 08	648	22	3.2	4.0	3.8	3.3	3.4	3.2	20.9	35.5	14.8	1887	56
Cairo	37 00	89 10	313	25	3.8	4.1	4.4	3.4	2.8	2.6	21.1	29.0	10.0	1887	49
Chicago	41 52	87 38	580	30	3.0	3.7	3.7	3.4	2.9	3.0	19.7	29.1	11.9	1887	58
Golconda	37 23	88 30	.....	18	3.8	4.3	4.4	3.4	3.2	3.2	22.3	39.1	14.2	1869	50
Marengo	42 15	88 37	819	45	2.8	3.9	4.3	3.7	3.7	3.8	22.2	43.1	12.0	1863	63
Mattoon	39 29	88 24	737	15	4.2	5.0	4.8	3.9	3.4	2.9	24.2	36.8	15.1	1881	57
Ottawa	41 22	88 48	688	25	2.9	4.0	3.6	3.6	2.9	2.9	19.9	37.3	9.7	1887	59
Peoria	40 42	89 36	452	41	3.2	3.8	3.7	4.0	3.0	3.5	21.2	34.9	10.4	1870	61
Rockford	42 15	89 05	730	22	3.3	4.0	4.8	3.6	3.2	2.4	21.3	41.2	13.8	1874	59
Sandwich	41 31	88 32	656	17	3.7	4.6	4.3	4.5	4.5	3.5	25.1	36.5	10.6	1877	59
Winnebago	42 17	89 12	861	18	3.2	4.0	4.1	3.5	3.2	3.6	21.6	33.8	14.4	1859	63
IOWA.															
Amana	41 47	91 55	.....	21	2.6	4.1	4.8	3.9	3.5	3.4	22.3	32.3	9.7	1886	67
Ames	42 00	93 38	926	21	2.9	4.1	4.4	4.7	3.4	3.6	23.1	38.7	13.0	1886	74
Brookville	41 04	92 05	.....	17	3.1	4.0	4.6	3.9	3.5	3.1	22.2	41.3	9.7	1863	68
Clinton	41 50	90 10	593	22	3.1	4.7	4.7	3.9	3.3	3.3	23.0	34.6	13.9	1886	63
Cresco	43 32	92 10	1,300	25	2.6	3.8	5.0	3.9	2.8	3.6	21.7	36.1	12.0	1877	70
Davenport	41 30	90 39	595	26	2.8	4.2	4.2	3.6	3.6	3.2	21.6	32.8	10.9	1894	65
Dubuque	42 30	90 40	611	27	2.6	3.7	4.6	4.2	3.2	4.1	22.4	39.1	10.6	1894	65
Fort Madison	40 37	91 28	522	43	3.2	4.3	4.4	3.8	3.7	3.7	23.1	37.6	13.7	1857	63
Independence	42 29	91 57	915	27	2.2	4.1	4.9	4.4	3.3	4.3	23.2	42.3	11.0	1894	72
Iowa City	41 37	91 30	667	33	3.0	4.3	4.7	4.4	4.4	4.0	24.8	41.3	10.5	1886	65
Keokuk	40 25	91 21	505	25	3.2	4.1	4.5	4.1	2.8	3.5	22.2	37.9	13.0	1887	64
Logan	41 00	95 00	.....	27	2.7	4.4	5.6	5.0	3.9	3.2	24.8	40.7	10.7	1894	73
Monticello	42 15	91 15	880	42	2.6	3.9	4.5	4.2	3.7	3.8	22.7	39.3	10.2	1871	63
Mount Pleasant	40 59	91 37	729	16	2.5	4.5	5.8	3.1	3.2	2.8	21.9	33.5	11.1	1890	67
Muscatine	41 26	91 05	562	48	3.5	4.4	4.8	3.8	4.2	3.7	24.4	*d* 56.6	11.1	1863	63
Oskaloosa	41 18	92 36	843	13	2.6	3.6	4.4	3.4	2.8	3.3	20.1	30.6	9.8	1890	69

a Camp Eagle Pass. *b* Combined with Springdale. *c* Clarksville. *d* Probably an over-measurement.

TABLE I.—MONTHLY AND SEASONAL AVERAGES OF RAINFALL, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Number of years.	April.	May.	June.	July.	August.	September.	Total.	Maximum.	Minimum.	Year of minimum rainfall.	Percentage of annual.
MISSOURI.	° ′	° ′	Feet.		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.		
Hermann	38 41	91 27	480	21	3.4	4.6	5.1	3.7	2.9	3.7	23.4	31.6	11.0	1883	60
Miami	39 18	93 15	640	49	3.0	4.2	5.0	4.2	3.6	3.4	23.4	42.4	8.1	1860	65
Oregon	39 59	95 09	1,100	41	3.3	4.7	4.7	4.3	4.3	3.1	24.4	36.8	12.7	1894	68
St. Louis	38 38	90 12	431	60	3.7	4.7	5.0	3.8	3.5	3.1	23.8	31.2	10.7	1871	58
INDIAN TERRITORY AND OKLAHOMA.															
Fort Gibson	35 50	95 20	510	29	4.1	4.5	3.9	2.7	2.8	2.7	20.7	34.7	9.7	1838	58
Fort Sill	34 40	98 23	1,190	24	2.7	4.4	3.7	2.9	3.2	2.8	19.7	31.3	8.0	1896	66
MICHIGAN.															
Alpena	45 05	83 30	609	24	2.2	3.5	3.7	2.9	3.5	3.8	19.6	30.3	12.6	1895	56
Detroit	42 20	83 03	580	46	2.6	3.1	3.8	3.6	2.6	3.0	18.7	31.0	10.9	1895	58
Grand Haven	43 05	86 18	593	25	2.6	3.4	3.8	2.8	2.7	3.6	18.9	30.5	10.6	1891	55
Grand Rapids	42 57	85 40	604	14	2.8	3.6	4.2	2.4	2.4	3.4	18.8	28.3	11.3	1895	55
Kalamazoo	42 20	85 38	770	20	2.6	4.4	4.5	3.2	2.6	3.2	20.5	28.6	15.0	1895	57
Lansing	42 44	84 32	836	33	2.4	3.4	4.0	3.1	2.7	2.9	18.5	32.8	12.9	1887	59
Port Huron	43 00	82 26	584	22	2.1	3.4	3.5	2.4	2.6	2.6	16.6	25.1	8.8	1889	53
MINNESOTA.															
Fort Ripley	46 10	94 24	1,169	27	1.8	3.2	4.3	4.0	3.3	3.1	19.7	28.3	8.6	1864	73
Fort Snelling	44 53	93 10	722	44	2.3	3.2	3.9	3.4	3.1	3.3	19.2	35.3	11.6	1852	74
Minneapolis	44 58	93 15	810	29	2.5	3.5	4.1	3.2	3.7	3.4	20.4	33.4	10.8	1894	69
St. Paul	44 58	93 03	703	39	2.5	3.5	4.1	3.3	3.8	3.2	20.4	28.1	12.2	1882	72
WISCONSIN.															
Beloit	42 30	89 11	741	30	2.9	3.2	4.0	3.5	3.6	3.4	20.6	35.2	10.9	1870	62
Embarrass	44 25	88 38	796	29	2.6	3.7	5.3	4.5	4.9	4.1	25.1	39.0	15.7	1867	62
La Crosse	43 49	91 15	657	24	2.4	3.3	4.5	4.0	3.2	4.2	21.6	32.1	11.8	1887	70
Madison	43 05	89 24	857	28	2.6	3.5	4.5	4.0	3.1	3.1	20.8	35.5	7.9	1895	63
Manitowoc	44 07	87 46	593	33	2.4	2.6	3.6	3.5	3.2	3.0	18.3	29.6	11.5	1891	59
Milwaukee	43 02	87 54	591	53	2.8	3.4	3.8	3.2	2.7	3.0	18.9	29.7	12.6	1847	61
NORTH DAKOTA.															
Bismarck	46 47	100 38	1,670	22	2.3	2.5	3.5	2.3	2.0	1.2	13.8	23.4	7.7	1889	75
Fort Buford *a*	48 01	103 58	1,855	29	1.2	2.4	2.8	1.7	1.2	0.8	10.1	17.8	4.4	1871	73
St. Vincent *b*	48 56	97 10	789	24	1.5	2.5	3.9	2.6	2.6	1.7	14.8	23.4	8.5	1889	76
Fort Totten	47 59	98 57	1,565	21	1.4	2.3	3.7	2.4	2.5	1.0	13.3	17.7	8.3	1883	75
SOUTH DAKOTA.															
Fort Meade	44 26	103 28	3,624	16	2.8	3.5	3.3	1.9	1.7	0.6	13.8	20.3	8.9	1893	74
Fort Randall	43 04	98 42	1,236	32	1.9	3.4	3.3	2.7	2.6	1.9	15.8	34.3	5.3	1863	75
Fort Sully	44 39	100 39	1,688	25	2.1	2.6	3.3	2.7	1.9	0.9	13.5	21.4	7.5	1884	78
Fort Wadsworth	45 43	97 40	2,000	18	2.0	3.0	3.7	3.4	2.7	1.3	16.1	25.1	7.8	1871	77
Yankton	42 56	98 23	1,206	20	3.3	4.0	4.1	3.5	3.0	2.6	20.5	32.3	11.3	1894	79
NEBRASKA.															
De Soto	41 28	96 03	1,100	24	2.6	4.5	4.6	4.3	3.3	3.3	22.6	39.5	13.0	1886	68
Genoa	41 26	97 43	1,585	21	2.9	4.1	4.5	3.9	2.5	2.8	20.7	30.1	11.1	1894	77
North Platte	41 08	100 45	2,809	29	2.1	3.0	3.5	2.5	2.3	1.5	14.9	21.7	8.0	1869	82
Omaha	41 16	95 56	1,040	27	3.1	4.5	5.3	4.6	3.3	3.0	23.8	39.9	11.1	1894	76
KANSAS.															
Dodge City	37 45	100 01	2,477	22	1.8	3.1	3.3	3.2	2.8	1.3	15.5	27.6	9.0	1893	78
Independence	37 13	95 41	798	25	3.7	4.6	4.9	4.2	3.0	3.7	24.1	36.4	16.9	1890	66
Lawrence	38 58	95 14	829	31	3.2	4.6	5.0	4.7	3.9	3.5	24.9	38.6	15.7	1886	69
Leavenworth	39 19	94 57	770	57	2.9	4.4	5.4	4.0	4.1	3.6	24.4	42.6	9.3	1864	70
Manhattan	39 12	96 37	1,014	35	2.6	4.1	4.5	4.7	3.6	3.0	22.5	36.4	10.2	1860	75
Fort Riley	39 02	96 45	1,074	40	2.0	3.4	3.9	3.7	3.7	2.8	19.5	31.0	9.7	1860	76
Topeka	39 03	95 39	886	18	2.9	4.8	5.2	4.7	4.0	3.1	24.7	36.7	14.8	1886	72
Wallace	38 54	101 35	3,303	18	1.6	2.8	2.3	3.4	1.7	1.3	13.1	31.8	6.4	1873	83
MONTANA.															
Fort Assinaboine *c*	48 36	109 45	2,576	16	1.0	1.7	3.1	2.1	1.4	1.2	10.5	22.9	5.2	1883	74
Helena	43 33	112 04	3,932	15	1.1	1.6	2.3	1.1	0.6	1.2	7.9	13.0	3.8	1889	60
Fort Keogh	46 22	105 56	2,367	19	1.1	2.2	2.8	1.2	0.9	0.8	9.0	18.3	5.6	1894	71
WYOMING.															
Cheyenne	41 08	104 48	6,064	27	1.5	2.3	1.5	1.9	1.6	1.0	9.8	17.3	3.9	1876	77
Laramie	42 14	104 25	7,159	21	1.3	2.6	1.4	1.5	1.2	0.9	8.9	29.0	1.3	1863	72
Fort Bridger	41 28	110 30	6,753	17	0.9	1.0	0.5	0.5	0.9	0.5	4.3	7.2	1.8	1871	46
IDAHO.															
Boise City	43 37	116 00	2,768	27	1.3	1.6	0.8	0.2	0.2	0.4	4.5	9.1	2.0	1881	32
Fort Lapwai	46 18	116 54	2,000	12	1.3	1.8	1.5	0.4	0.6	0.8	6.4	10.6	2.4	1872	39
UTAH.															
Corinne	41 30	112 18	4,232	23	1.1	1.1	0.6	0.4	0.3	0.6	4.1	8.7	2.0	1877	35
Camp Douglas	40 46	111 50	5,024	23	2.0	2.4	0.7	0.8	0.7	0.7	7.3	14.4	3.2	1865	43
Ogden	41 12	111 57	4,307	23	1.5	1.5	0.6	0.2	0.4	0.7	4.9	9.9	0.5	1881	35
Promontory	41 35	112 35	4,905	27	0.8	0.8	0.5	0.2	0.4	0.7	3.4	9.0	0.3	1890	41
Salt Lake City	40 46	111 54	4,262	29	2.0	2.0	1.1	0.9	1.3	1.0	8.3	23.3	2.2	1890	44
Terrace	41 30	113 30	4,544	22	0.4	0.6	0.2	0.1	0.1	0.3	1.7	4.8	0.0	1882	40

a Also Williston. *b* Pembina, N. Dak., and St. Vincent, Minn., combined. *c* Havre.

Least Rainfall, April to September, inclusive.

Chart III.

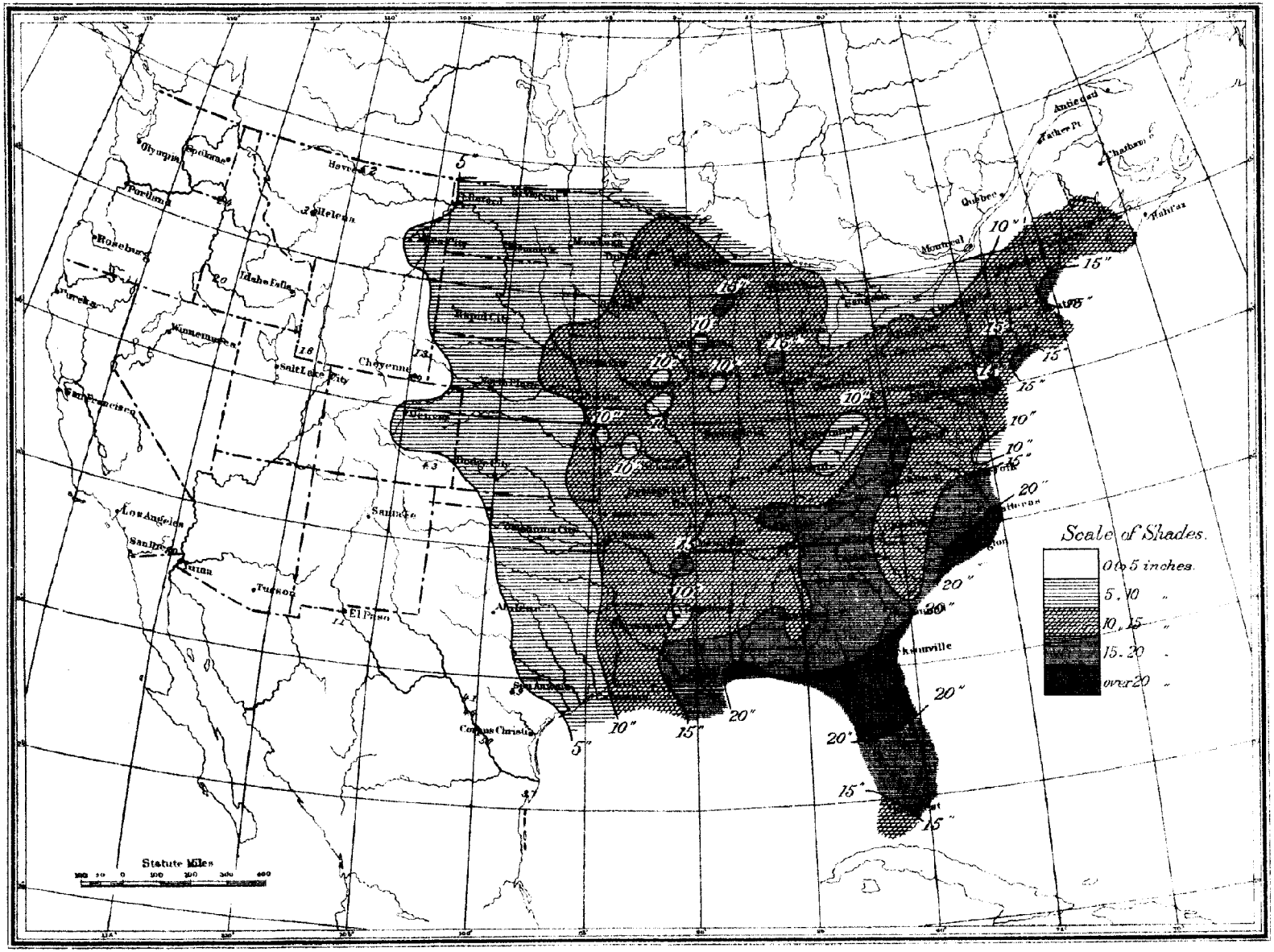


TABLE I.—MONTHLY AND SEASONAL AVERAGES OF RAINFALL, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Number of years.	April.	May.	June.	July.	August.	September.	Total.	Maximum.	Minimum.	Year of minimum rainfall.	Percentage of annual.
NEW MEXICO.	° ′	° ′	Feet.		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.		
Santa Fe	35 42	106 01	6,939	37	0.7	0.9	1.1	2.7	2.7	1.6	9.7	18.4	4.6	1889	66
Fort Stanton	33 29	105 31	6,151	19	0.6	1.0	1.7	3.2	3.8	2.1	12.4	22.8	5.4	1892	69
Fort Wingate	35 28	108 32	7,038	30	0.9	0.5	0.6	2.4	2.3	1.3	8.0	14.2	1.7	1892	55
COLORADO.															
Colorado Springs	38 51	104 46	5,978	12	1.4	2.4	1.9	3.2	2.2	1.1	12.2	16.7	7.1	1888	84
Denver	39 45	105 00	5,182	27	2.0	2.7	1.3	1.7	1.4	0.9	10.0	14.7	5.6	1871	70
Fort Garland	37 25	105 23	7,921	20	1.1	1.0	1.2	2.4	2.0	1.1	8.8	33.6	1.4	1863	70
Fort Lyon	38 06	103 30	3,910	17	1.0	1.8	1.4	2.2	1.8	0.9	9.1	15.8	4.3	1871	77

Average distribution for the crop season.—The averages for the crop-growing season and the absolute amount of rain that fell in the season of least rainfall are also graphically shown on Charts II and III, respectively. The particular significance of these figures and charts lies in the fact that they broadly outline the areas in the United States east of the Rocky Mountains that are adapted to agricultural operations without irrigation. The exact amount of rainfall required for the successful cultivation of crops has not been fixed nor can be in terms of rainfall alone. On the Pacific Coast and over comparatively small areas in the arid regions wheat and other cereals are grown with a seasonal rainfall considerably less than 15 inches, but it should be remembered that the climatic conditions, as regards temperature and humidity, are quite different from those which obtain in the wheat region of the Northwest. The character of the soil, especially as regards its ability to retain moisture, is a very important consideration. It is said, in explanation of the fact that wheat is grown in eastern Washington, where the *yearly* fall is generally under 18 inches, that the rainfall of winter and early spring is conserved in the soil and is supplied to the plant by capillary action during the early part of the growing season.

The average rainfall of Spokane, in the wheat region of eastern Washington, during April, May, and June, is but 4.5 inches, or about as much as falls in a single month in the wheat region of the Mississippi Valley. It is quite obvious that the growth of the plant is not due to the rainfall of the spring and early summer months alone.

A comparison of the seasonal precipitation chart with the returns of the Eleventh Census confirms the view above expressed, viz, that the area devoted to the cultivation of cereals can be broadly defined by the line of 15 inches, or nearly that amount of rain, per season, although no hard and fast rule can be laid down. The valley of the Red River of the North is widely known as a famous wheat-producing region; yet the seasonal rainfall from St. Vincent northward is a little under 15 inches.

Least rainfall during crop season.—The chart of least rainfall is intended to show the smallest amount of rain that has ever been recorded between April 1 and September 30. The registers from which the chart was prepared are not wholly synchronous, and therefore the results do not always accord as closely as might be wished. Nevertheless, it is worthy of note that the least rainfall at stations whose records extend over forty or fifty years is not greatly below the extreme recorded in half the time. There seems to be a fairly constant ratio between the least rainfall and the mean fall of any place; thus, in California the fall in the year of least rain is generally 50 per cent of the mean. In the present case, those stations east of the Alleghanies having an average fall for the season of 20 inches, generally, have not less than 11 or 12 inches, or about 60 per cent, in the year of least rainfall. West of the Alleghanies the ratio is a little less, the fall of the driest year being about 55 per cent of the seasonal average.

The ratio of the rainfall of the crop season to the total of the year.—This varies still more widely. On the plains 70 per cent and upward of the yearly fall comes in the growing months of the year; elsewhere the ratio is less, being a little over 50 per cent east of the Mississippi River.

As might be expected, the years of least rainfall are not distributed evenly throughout the whole observational period. No very useful deductions can be made from the whole mass of data, since a common period of time is not covered by all the registers. Of the whole number used,

however, 81 cover the period 1871–1896, and of these 49 extend over varying periods of time preceding 1871. Some interesting facts may be drawn from these registers.

Periods of drought.—The years of minimum rainfall or drought from 1871 to 1896 fall in groups, separated by irregular time intervals. The first group centers about 1871; the second, 1881; the third, 1887; and the last, 1894–95. The drought of 1887 was severe in some months, but not consistently so throughout the entire season; the droughts of 1881 and 1894 were widespread and severe. The former was confined principally to States east of the Alleghanies, while the latter was felt from Nebraska eastward to Massachusetts and southward to Alabama. Prior to 1870 the few records available indicate a local drought in Kansas and western Missouri in 1860, more severe than has since been experienced. Widespread drought in the central valleys and Lake region also occurred in 1863. The periods of extensive drought in chronological order are, therefore, 1860, 1863, 1870–71, 1881, 1887, and 1894–95. There have been, of course, severe local droughts in various portions of the United States during the intervening years, as there must always be in a territory of such vast extent.

In order to determine how closely the least seasonal rainfall of the period 1871–1896 approaches the lowest ever recorded, an examination was made of the group of 49 stations whose registers extend over earlier years as well as the period 1871–1896.

The table below shows the minima of the two periods at the points having the longest records:

TABLE II.—LEAST RAINFALL APRIL TO SEPTEMBER, INCLUSIVE, AT THE STATIONS NAMED (INCHES AND TENTHS).

Stations.	1871–1896.	Previous years.	Continuous record from—
New Bedford, Mass	13.2 in 1891	11.6 in 1849	1814
Boston, Mass	13.9 in 1887	11.8 in 1836	1818
Providence, R. I	16.3 in 1894	11.3 in 1836	1832
Amherst, Mass	13.9 in 1887	11.8 in 1836	1836
New York, N. Y	12.7 in 1881	12.5 in 1849	1836
Newark, N. J	12.1 in 1881	16.4 in 1845	1844
Philadelphia, Pa	10.3 in 1881	14.5 in 1825	1825
Washington, D. C	14.3 in 1894	16.7 in 1869	1856
Savannah, Ga	19.0 in 1881	20.8 in 1857	*a* 1837
Portsmouth, Ohio	12.8 in 1878	9.7 in 1834	*b* 1830
Cincinnati, Ohio	12.6 in 1895	11.9 in 1870	1835
Louisville, Ky	14.6 in 1881	15.4 in 1856	*c* 1842
St. Louis, Mo	10.7 in 1871	15.8 in 1870	1837
Miami, Mo	13.3 in 1871	8.1 in 1860	1847
Monticello, Iowa	10.2 in 1871	12.4 in 1863	1855
Fort Riley, Kans	11.1 in 1875	9.7 in 1860	1854
Average	13.2	13.2	

a 1839, 1859–1868, inclusive, and 1870 missing. *b* 1856, 1857, and 1858 missing. *c* 1860 missing.

As will be seen by the above, the year of least rainfall occurred prior to 1871 in nine cases, and either with or subsequent to 1871 in the remaining seven cases. The two principles illustrated by these facts are that intense droughts are not general in extent of territory covered, and that for all practical purposes the least rainfall may be expected to occur within a twenty-five-year period.

V.—SECULAR VARIATION.

The question of secular variation of rainfall, touched upon on page 320, is not only intensely interesting in its physical aspect, but also of very great economic importance. It is not surprising, therefore, that it should have been the subject of extended investigation at the hands of rainfall students in many parts of the world. The literature of the subject is very extensive, and much ingenuity has been displayed in the search for cycles or periods of recurrent phenomena. It is true that suggestions of a faint periodicity have been found in some regions of the globe, but it is still the general belief that the vicissitudes of rainfall, if not wholly fortuitous, are so intermingled with the variations of pressure, temperature, etc., that no satisfactory solution of the problem will be reached until the greater problem of the general circulation of the atmosphere has been solved.

The local distribution of rainfall is exceedingly erratic. Thus, the catch of two gauges, having practically the same exposure and but a few miles apart, may differ as much as 10 or 15 inches in the total of the year, due solely to the occurrence of a few more thunderstorms at one station than at the other. Individual registers, therefore, often afford doubtful and conflicting information

respecting the yearly fall of one and the same region. But if we group the rainfall registers of an entire district, the combined result will generally show whether the fall of the year is abnormal and to what extent.

The table below was formed by computing the departure from the normal of the actual annual rainfall at each of the various stations in the several geographic districts. The annual departures were then added algebraically and the average of the sum obtained. Thus, in New England in 1887 the algebraic sum of the annual departures was $+21.6$ inches $\div 9 = +2.4$ inches as given below:

TABLE III.—DEPARTURES FROM THE NORMAL PRECIPITATION BY GEOGRAPHIC DISTRICTS DURING THE TEN YEARS 1887–1896.

Districts.	Number of stations.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	Years. Above.	Years. Below.
		Inches.	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*		
New England	9	+2.4	+10.1	+5.2	+5.8	+0.3	−4.3	−0.8	−7.5	−2.8	−5.0	5	5
Middle Atlantic States	11	−1.0	+4.7	+12.0	+5.4	+4.5	−2.3	+2.9	−2.5	−7.6	−7.2	5	5
South Atlantic States	11	−1.5	+0.2	+2.0	−5.0	−1.7	−7.4	+1.5	−2.0	−1.5	−10.7	3	7
Eastern Gulf States	5	−6.0	+7.2	−6.7	−5.0	−0.2	−7.0	−1.2	−6.9	−6.4	−9.0	1	9
Western Gulf States	8	−6.1	+8.3	−2.2	+2.1	−9.1	−3.8	−9.3	−4.6	−8.6	−12.5	2	8
Ohio Valley and Tennessee	11	−4.2	+1.9	−4.3	+9.2	+0.3	−1.9	−2.6	−8.9	−11.6	−4.6	3	7
Lower Lake region	8	−3.9	−4.8	−2.4	+5.2	−3.6	+3.8	−0.3	−3.8	−5.5	+0.1	3	7
Upper Lake region	10	−3.1	−5.0	−3.6	−0.1	−2.4	−0.8	+0.7	−2.4	−5.4	−4.6	1	9
Extreme Northwest	4	−1.0	−2.9	−6.3	−0.4	+3.9	−1.0	−0.9	−0.4	−1.1	+2.9	2	8
Upper Mississippi Valley	13	−4.9	−0.6	−6.1	+0.1	−5.1	+4.7	−3.4	−8.7	−9.2	+0.5	3	7
Missouri Valley	10	−2.2	−2.3	−4.1	−4.1	+0.9	+2.0	−2.1	−8.0	−0.6	+0.2	3	7
Northern Slope	6	+1.1	0.0	−2.4	−2.7	+4.5	+1.8	−1.1	−1.2	−1.0	+0.9	4	5
Southern Slope	4	+1.3	+3.7	−2.4	+1.8	−0.8	+2.2	−5.2	−3.4	+4.0	+1.0	6	4
Middle Slope	7	−4.2	−4.5	−0.3	−4.2	+6.0	+1.8	−5.4	−5.1	+0.6	−1.8	3	7
Southern Plateau	9	+0.9	+0.2	−1.4	+1.0	−2.1	−4.7	−1.7	−2.7	+0.2	+1.1	5	5
Middle Plateau	5	−3.9	−1.7	+1.9	−0.4	+2.0	−0.6	+0.4	+0.7	−2.8	+2.4	5	5
Northern Plateau	4	−2.1	−4.5	−4.1	−4.1	−0.8	0.0	+6.2	+3.2	−3.0	+1.1	3	6
North Pacific Coast	8	−6.2	−6.6	−10.6	−9.0	+8.4	−3.0	+13.3	+11.8	+5.8	+10.1	5	5
California	12	−5.6	−1.8	+11.4	+1.9	−3.4	+4.4	+1.0	+0.6	−1.1	+1.0	6	4
Above the mean		4	8	5	9	9	7	7	4	4	11	.....	.....
Below the mean		15	10	14	10	10	11	12	15	15	8	.....	.....

It appears beyond question that there has been a very general deficiency of rain in the great majority of the years and in almost all of the districts. Moreover, there does not seem to be any law of compensation by which a deficit in one district is balanced by a surplus in another. The South Atlantic and Gulf States, in particular, show a marked deficit throughout almost the entire period. This fact naturally suggests an inquiry into the rainfall of the preceding ten years. The following statement shows the average precipitation at the principal Weather Bureau stations in the region just mentioned for twenty consecutive years in periods of ten years each:

Average annual precipitation in periods of ten consecutive years, 1877–1886 and 1887–1896.

Stations.	Average 1877–1896.	1877–1886.	1887–1896.	Difference.	Stations.	Average 1877–1896.	1877–1886.	1887–1896.	Difference.
	Inches.	*Inches.*	*Inches.*	*Inches.*		*Inches.*	*Inches.*	*Inches.*	*Inches.*
Lenoir, N. C.	50.09	51.40	48.78	−2.62	Mobile, Ala	62.67	66.61	58.73	−7.88
Hatteras, N. C	65.58	73.41	57.76	−15.65	Montgomery, Ala	50.97	52.04	49.90	−2.14
Wilmington, N. C	53.06	58.83	47.30	−11.53	Vicksburg, Miss	54.37	62.04	46.69	−15.35
Charleston, S. C	54.59	56.82	52.37	−4.45	Memphis, Tenn	52.77	56.76	48.78	−7.98
Augusta, Ga	46.99	46.53	47.44	+0.91	New Orleans, La	58.81	61.34	54.28	−7.06
Savannah, Ga	49.83	50.91	48.75	−2.16	Shreveport, La	47.34	54.26	40.42	−13.84
Jacksonville, Fla	53.40	57.69	49.12	−8.57	Galveston, Tex	46.18	52.40	39.96	−12.44

The facts presented above may be viewed from either of two standpoints: (1) The rainfall of the first period was abnormally high and the apparent decrease noted in the second period is merely a return to normal conditions; or (2) there has been a permanent decrease in the rainfall. The first proposition seems to be the more rational one. The heavy rainfall on the Texas coast, where there is a marked deficiency, is largely due to the advent of cyclonic storms from the Gulf which often have a very slow movement and give torrential rainfall for several days in succession. Thus, 8.70 inches fell on September 16–17, 1877; 8.40 inches on October 24, 1877; 8.24 inches on September 3–4, 1885; 16.53 inches on September 15–20, 1885. In the last-named case the rainfall at points less than 100 miles inland was not a fifth of the fall at Galveston, on the coast.

The movement of these storms, after passing several hundred miles northward, is much accelerated and less rain is precipitated than on and near the coast.

The seaward margin of the South Atlantic States is in the region of West India hurricanes, and naturally receives a greater amount of rainfall in years when these storms are prevalent. While these facts may partially explain the marked variation in the rainfall of individual years, they by no means fully account for the phenomenon in all of its phases.

Although the droughty conditions were nowhere so intense as in portions of the South Atlantic and Gulf States, yet the rainfall of the United States, as a whole, for the ten years 1887–1896 was below the average of the ten years next preceding. This interesting fact naturally suggested an inquiry into the rainfall of the period prior to 1877. Unfortunately the continuous registers available for such purpose are so few and so widely separated that no general comparison can be made. But it is possible to determine with some accuracy the average annual fall for a number of consecutive years prior to the beginning of Signal Service observations in comparatively small areas of the older States, as in New England, the Ohio Valley, and the middle Mississippi Valley.

For obvious reasons a single register does not always truly indicate the rainfall of the district in which it may be situated, but when there is reasonable agreement among three or more registers in the same district it may be assumed that the average of the three affords a close approximation to the true fall. Using three or more registers, we have determined what Blandford has termed progressive averages of precipitation for southeastern New England for each year of the period 1834–1896, the upper Ohio Valley for the same period, and the middle Mississippi Valley, 1858–1896. The stations used and the yearly averages are given in the table following:

TABLE IV.—PROGRESSIVE AVERAGES OF PRECIPITATION.

Southeastern New England: Boston, New Bedford, and Providence.
Upper Ohio Valley: Marietta, Portsmouth, and Cincinnati.
Middle Mississippi Valley: Muscatine, Monticello, Marengo, and Peoria.

$$\frac{(a + 4b + 6c + 4d + e}{16} = c')$$

Where c' = progressive average of the middle year of the group.

Years.	Southeastern New England.				Upper Ohio Valley.				Middle Mississippi Valley.				
	Boston.	New Bedford.	Providence.	Mean.	Marietta.	Portsmouth.	Cincinnati.	Mean.	Muscatine.	Monticello.	Marengo.	Peoria.	Mean.
	Inches.	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
1816	.....	38.1	.....	38.1	.....	.....	.....	.....	.....	.....	.....	.....	.....
1817	.....	37.8	.....	37.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
1818	.....	36.7	.....	36.7	.....	.....	.....	.....	.....	.....	.....	.....	.....
1819	.....	36.4	.....	36.4	.....	.....	.....	.....	.....	.....	.....	.....	.....
1820	39.0	37.3	.....	38.2	.....	.....	.....	.....	.....	.....	.....	.....	.....
1821	36.7	39.2	.....	38.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
1822	36.0	42.2	.....	39.1	.....	.....	.....	.....	.....	.....	.....	.....	.....
1823	37.5	44.3	.....	40.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
1824	37.4	42.9	.....	40.2	.....	.....	.....	.....	.....	.....	.....	.....	.....
1825	37.4	42.2	.....	39.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
1826	40.0	45.5	.....	42.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
1827	41.7	47.6	.....	44.6	.....	.....	.....	.....	.....	.....	.....	.....	.....
1828	41.4	48.1	.....	44.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
1829	42.6	51.7	.....	47.2	.....	.....	.....	.....	.....	.....	.....	.....	.....
1830	45.6	54.5	.....	50.0	43.3	.....	.....	43.3	.....	.....	.....	.....	.....
1831	47.0	51.7	.....	49.4	46.4	.....	.....	46.4	.....	.....	.....	.....	.....
1832	45.0	45.6	.....	45.3	46.1	40.3	.....	43.2	.....	.....	.....	.....	.....
1833	41.3	41.2	.....	41.2	42.0	36.7	.....	39.4	.....	.....	.....	.....	.....
1834	39.2	40.1	36.8	38.7	39.1	31.4	.....	35.2	.....	.....	.....	.....	.....
1835	38.7	39.8	35.6	38.0	39.1	29.9	.....	34.5	.....	.....	.....	.....	.....
1836	38.3	38.2	34.8	37.1	39.7	33.9	.....	36.8	.....	.....	.....	.....	.....
1837	38.4	36.2	35.0	36.5	39.2	38.0	45.4	40.9	.....	.....	.....	.....	.....
1838	40.3	36.5	36.3	37.7	37.2	37.0	39.7	38.0	.....	.....	.....	.....	.....
1839	43.4	39.4	38.5	40.4	36.4	35.5	38.5	36.8	.....	.....	.....	.....	.....
1840	45.6	42.0	41.4	43.0	38.4	38.6	40.7	39.2	.....	.....	.....	.....	.....
1841	45.2	42.0	42.6	43.3	41.0	42.7	42.7	42.1	.....	.....	.....	.....	.....
1842	43.5	40.7	41.5	41.9	41.6	44.8	44.2	43.5	.....	.....	.....	.....	.....
1843	42.5	40.2	39.8	40.8	40.1	44.3	45.8	43.4	.....	.....	.....	.....	.....
1844	41.6	39.6	38.8	40.0	38.2	41.9	46.5	42.2	.....	.....	.....	.....	.....
1845	40.0	38.2	38.3	38.8	39.3	41.6	48.8	43.2	.....	.....	.....	.....	.....
1846	39.3	37.0	39.1	38.5	43.9	44.1	53.9	47.3	.....	.....	.....	.....	.....
1847	40.7	36.8	40.8	39.4	46.8	45.3	56.7	49.6	.....	.....	.....	.....	.....
1848	42.4	37.0	41.1	40.2	46.2	45.1	55.3	48.9	42.0	.....	.....	.....	42.0
1849	44.5	39.7	41.8	42.0	45.4	46.0	52.2	47.9	50.8	.....	.....	.....	50.8
1850	46.9	44.7	43.9	45.2	44.6	45.1	48.2	46.0	58.0	.....	.....	.....	58.0

TABLE IV.—PROGRESSIVE AVERAGES OF PRECIPITATION—Continued.

Years.	Southeastern New England.				Upper Ohio Valley.				Middle Mississippi Valley.				
	Boston.	New Bedford.	Providence.	Mean.	Marietta.	Portsmouth.	Cincinnati.	Mean.	Muscatine.	Monticello.	Marengo.	Peoria.	Mean.
	Inches.	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
1851	47.6	46.0	44.6	46.1	42.7	40.3	44.9	42.6	61.6	.....	.....	.....	61.6
1852	47.5	42.8	45.2	45.2	41.1	35.5	45.0	40.5	56.7	.....	.....	.....	56.7
1853	47.2	40.8	46.8	44.9	40.2	33.6	49.9	41.3	44.2	.....	.....	.....	44.2
1854	46.7	40.4	45.7	44.3	40.2	35.8	46.7	40.9	34.2	.....	.....	.....	34.2
1855	47.7	38.4	42.8	43.0	39.9	38.6	42.3	40.3	33.0	.....	.....	.....	33.0
1856	51.0	36.7	42.2	43.3	40.1	39.8	36.9	38.9	37.3	.....	.....	.....	37.3
1857	53.9	38.6	43.7	45.4	44.8	42.8	37.7	41.8	42.4	38.5	.....	.....	40.4
1858	54.6	42.2	44.5	47.1	50.1	46.1	42.3	46.2	43.8	39.6	39.6	39.0	40.5
1859	54.0	43.7	43.5	47.1	49.2	44.5	42.8	45.5	39.3	37.6	35.9	37.0	37.4
1860	53.2	43.0	42.7	46.3	45.3	40.6	40.6	42.2	36.4	36.2	33.5	34.3	35.1
1861	54.7	42.6	45.0	47.4	43.4	39.4	39.7	40.8	40.0	39.4	35.0	35.9	37.6
1862	58.6	42.7	48.4	49.9	41.9	39.1	39.2	40.1	41.2	41.5	34.4	37.8	38.7
1863	59.1	42.5	48.0	49.9	40.7	38.8	38.2	39.2	36.3	37.8	30.5	36.1	35.2
1864	54.4	42.0	44.8	47.1	42.4	41.5	39.0	41.0	32.8	34.1	29.7	34.2	32.7
1865	50.7	41.8	43.8	45.4	45.6	45.6	41.7	44.3	32.8	35.1	33.2	34.1	33.8
1866	52.0	42.9	45.8	46.9	47.0	46.7	42.2	45.3	33.4	36.0	35.5	33.0	34.5
1867	56.7	46.2	48.3	50.4	45.9	45.4	40.3	42.9	35.3	34.5	36.6	32.0	34.6
1868	60.5	49.3	49.9	53.2	43.7	44.0	39.4	42.4	37.8	34.0	38.8	33.8	36.1
1869	58.6	49.4	49.8	52.6	40.9	42.0	37.6	40.2	37.0	34.3	38.0	34.2	35.9
1870	52.6	48.2	48.9	49.9	37.5	38.3	34.0	36.6	33.9	33.0	33.5	32.1	33.1
1871	49.2	47.8	48.7	48.6	34.3	35.1	32.8	34.1	33.1	31.8	30.5	32.6	32.0
1872	49.9	48.2	49.2	49.1	34.9	35.9	35.2	35.3	33.2	31.7	29.9	35.3	32.5
1873	50.0	49.5	49.0	49.5	38.1	39.5	38.1	38.6	32.8	31.5	28.9	35.0	32.0
1874	48.6	50.1	48.7	49.1	39.9	41.9	40.5	40.8	35.1	32.0	29.5	34.0	32.6
1875	48.5	48.1	49.4	48.7	40.0	42.1	43.3	41.8	40.7	36.5	33.0	36.6	36.7
1876	50.5	45.8	50.6	49.0	39.1	39.9	44.0	41.0	45.0	42.9	35.6	39.4	40.7
1877	53.9	45.8	52.0	50.6	37.2	36.0	42.4	38.5	44.1	44.3	35.1	37.9	40.4
1878	54.3	45.9	52.5	50.9	35.9	34.5	43.8	38.1	39.8	41.7	33.5	34.3	37.3
1879	49.4	43.7	51.1	48.1	37.0	37.7	48.4	41.0	37.0	41.8	33.8	33.9	36.6
1880	45.4	41.4	50.2	45.6	40.4	42.7	51.1	44.7	38.6	44.4	36.7	37.0	39.2
1881	45.1	40.9	50.7	45.6	45.2	46.8	51.0	47.7	42.4	44.0	39.2	39.5	41.3
1882	43.9	42.3	50.7	45.6	48.4	49.1	50.4	49.3	44.3	40.0	38.4	39.6	40.6
1883	42.6	45.1	50.5	46.1	46.5	47.7	47.6	47.3	43.8	37.4	36.3	38.8	39.1
1884	43.9	48.4	50.4	47.6	41.8	43.6	41.5	42.3	42.0	37.3	35.2	37.2	37.9
1885	46.1	46.4	49.8	47.4	39.6	41.3	35.9	38.9	38.2	36.2	34.3	33.7	35.6
1886	46.8	48.1	50.7	48.6	40.1	41.7	33.6	38.5	33.8	34.0	35.2	30.6	33.4
1887	49.2	51.3	54.2	51.6	42.6	42.9	33.8	39.8	32.6	32.8	30.6	31.0	31.8
1888	52.9	53.6	56.9	54.5	46.4	44.2	34.5	41.7	33.9	32.6	28.0	33.2	32.1
1889	53.9	55.0	55.7	54.9	49.3	46.4	36.8	44.2	34.0	33.4	28.9	32.7	32.2
1890	51.3	54.2	52.1	52.5	49.0	47.1	39.4	45.2	33.3	34.6	31.0	31.0	32.7
1891	48.1	50.4	48.3	48.9	44.4	46.3	39.0	43.2	34.4	34.3	35.0	31.7	33.8
1892	45.5	47.2	45.8	46.2	39.1	42.5	37.2	39.6	35.3	32.5	36.0	33.0	34.2
1893	43.6	46.6	45.6	45.3	35.7	38.8	35.4	36.6	33.2	29.4	34.5	32.7	32.4
1894	42.8	45.8	46.6	45.1	33.1	36.1	32.5	33.9	29.9	25.7	32.0	32.5	30.0
1895	42.7	44.6	47.0	44.8	33.1	35.5	30.9	33.2	28.3	24.6	30.5	33.6	29.2
1896	43.7	45.3	47.9	45.6	36.2	36.7	31.9	34.9	28.2	26.3	30.4	35.0	30.0
Mean	.....	.....	.....	45.8	.....	.....	.....	41.3	.....	.....	.....	.....	35.2

As before stated, the fact that a period of abundant rain was followed by one of diminished fall, culminating in the extensive droughts of 1894–95, led to an examination of the older rainfall registers of the United States. The examination has not been productive of positive results, so far as the rainfall periodicity of the whole country prior to 1877 is concerned. This result might have been inferred on the ground that the conditions which determine the character of fall in the several rainfall districts are varied and complex, wherefore failure of rains in all districts on the one hand, or a preponderance of rain on the other, is not likely. In tropical India the variation of rainfall in different years is intimately connected with the strength and persistence of the summer monsoon, and the problem is much simplified. The rainfall of higher latitudes, however, partakes largely of the nature of fortuitous phenomena whose underlying causes are difficult of ascertainment.

The data given in the table and graphically expressed on Plate II are not wholly barren of results. It may, therefore, be instructive to examine them more closely, since it is only by studying the details of the rainfall régimé of smaller geographical divisions that we may expect to gain a better knowledge of the vicissitudes of rainfall of greater divisions.

Plate II exhibits the fluctuation in the yearly amounts of precipitation during the years given at the top of the sheet. The heavy horizontal lines represent the normal precipitation. The amount that the actual fall of any year exceeded or fell short of the normal may be found by noting the intersection of the curved lines with the smaller horizontal lines, whose values are given in inches on the left margin.

If periods of heavy and light rainfall alternated regularly, the line of departure from the normal (the curved line) would rise and fall in a series of bends or inflections precisely as the temperature rises and falls with the alternation of day and night. Reference to the diagram itself will best show how closely the fall of the three regions under consideration approaches any sort of periodicity. The Ohio Valley curve is more symmetrical than the others, and there appears to be a rough periodicity of about nine years. Thus there were periods of heavy rainfall about 1837, 1847, 1858, 1866, 1875, 1882, and 1890, and of drought in 1839, 1856, 1863, 1871, 1878, 1886, and 1895. Should this periodicity hold, the crest of the next period of heavy precipitation will fall about 1899.

The curve for the middle Mississippi Valley gives little indication of any sort of periodicity. The important facts shown are: (1) The deficiency of the last ten years was preceded by a corresponding excess, and (2) there were no marked fluctuations between 1858 and 1875. Prior to 1858, if the record made at Muscatine can be relied upon, the rains were heavier than have since been reported. There is also an indication of a period of heavy rainfall at St. Louis, Mo., in the fifties, but the years of maximum fall do not coincide with those at Muscatine.

Comparing the curves one with another, it is readily seen that they are not symmetrical, especially as regards the epochs of maximum and minimum fall. Thus the period of relatively light rainfall in New England during 1880–1883 was one of heavy rainfall both in the Ohio and middle Mississippi valleys. Likewise 1878 was a year of heavy rainfall in New England, but of drought in the Ohio Valley.

The New England curve shows a rather remarkable increase in precipitation, beginning about 1845 and reaching a climax in 1888–89, if the droughty period of 1880–1882 be excepted. This fact is so contrary to general belief that as an additional check upon the accuracy of the figures the simple arithmetical means of the annual amounts of each station have been computed in periods of ten years each, beginning in 1837. There was no especial reason for beginning with that year, except that it brought the last ten-year period to a close with 1896. The ten-year means are given below.

Periods.	Boston.	New Bedford.	Providence.
	Inches.	*Inches.*	*Inches.*
1837–1846	41.3	38.8	38.4
1847–1856	46.5	40.4	43.9
1857–1866	54.5	42.1	45.1
1867–1876	52.6	48.4	49.4
1877–1886	46.8	44.6	50.8
1887–1896	47.1	49.6	50.1

Thus it appears that there was a period of about forty years (1837–1876) during which there was a total increase in the annual precipitation at the stations named of about 10 inches (from an average of 41 inches to an average of 52 inches at Boston, etc.). But further examination shows that the increase was largely a local phenomenon, since it is not apparent at points west of the Connecticut River. The register of Amherst, in west-central Massachusetts, shows an increase from 1837 to 1846, and but little variation in later decades. The figures are as follows:

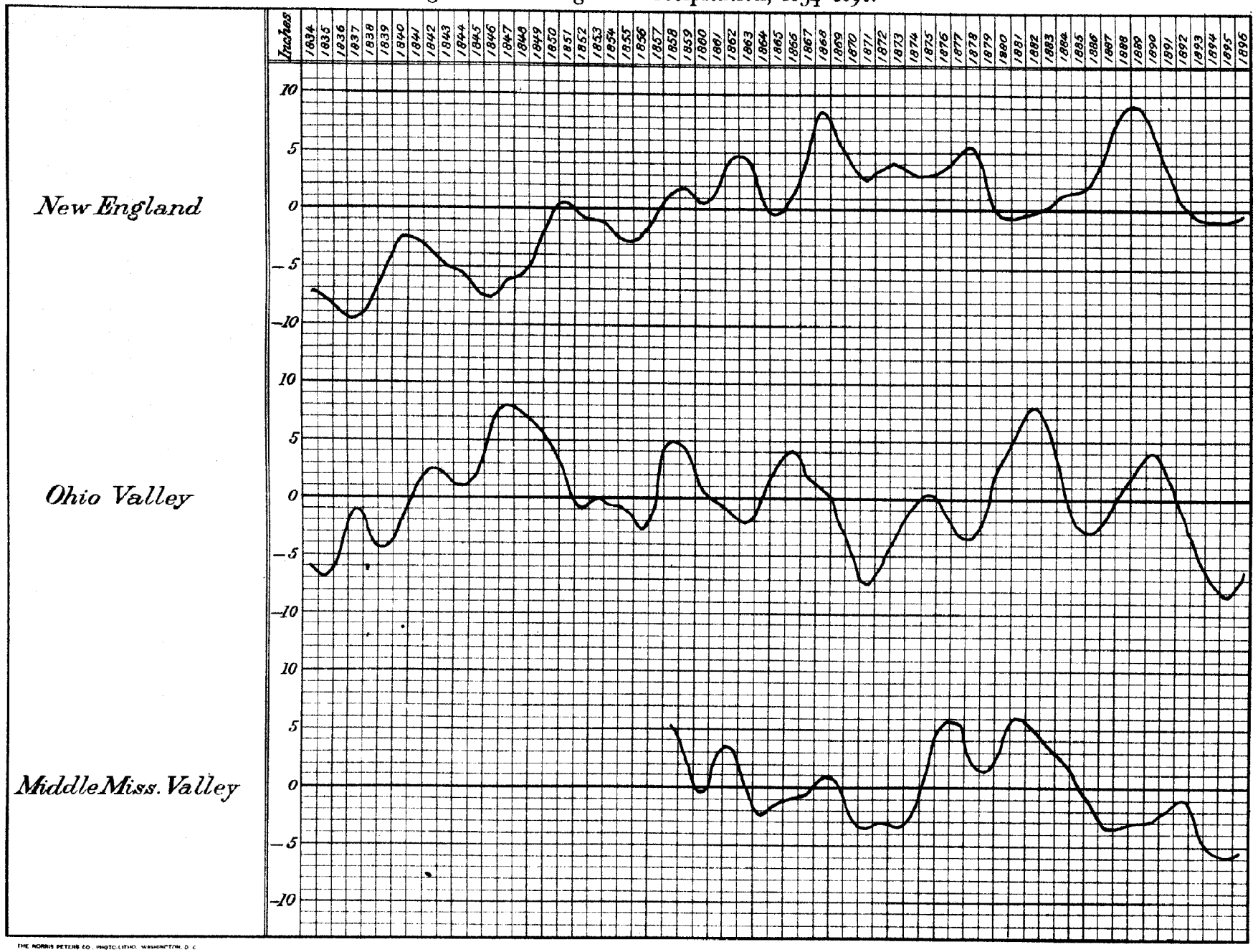
Average precipitation, Amherst, Mass.

	Inches.
1837–1846	41.5
1847–1856	45.6
1857–1866	45.5
1867–1876	45.6
1877–1886	42.2
1887–1896	45.4

Some interesting and possibly suggestive facts may be obtained by an inspection of the years of least rainfall shown by full-faced type (Table IV). There is a suggestion in these data that, while the more intense droughts are of comparatively small area, yet what might be termed the dominating influence is often felt over a very large extent of territory. The drought of 1860, which was most severe in Kansas and Missouri, was also felt in the middle Mississippi Valley and again in New England, although in the latter region, more as a slight obstacle in the path of a

Progressive Averages of Precipitation, 1834–1896.

Plate II.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

wave of increasing precipitation than as a period of absolute drought. So also the severe drought of 1835 in the Ohio Valley was felt in New England as a moderate drought only.

The drought of 1863 in the upper Ohio Valley and Lake Region appeared in the middle Mississippi Valley in the following year, and in the year next following (1865) there was a period of relative drought in New England. From these and other facts it may be assumed that there is not a progressive movement from west to east in droughts as in ordinary weather conditions. There is, however, a tendency for them to recur in irregular periods of from four to eleven years.

Finally, it may be observed that the drought of 1894–95, whether measured by the amount of rain that fell or the time that it persisted, was the most severe that has ever been experienced in the Ohio and Mississippi valleys.

One other phase of rainfall variability that may be touched upon is the tendency in nature of one extreme to be followed by another, and this oscillation from dry to wet, or vice versa, may be accomplished quickly or it may run through three or four years. One of the most remarkable individual cases of a complete reversal within two years is that of Mount Hamilton, California, on whose summit 90.1 inches of rain and melted snow were measured in 1884, but only 18.4 inches in 1885. The year 1884 was one of generally heavy precipitation throughout the Pacific Coast and, in a greater or less degree, over the Plateau region west of the Rocky Mountains during the months of January, February, March, and December. In a great many cases the early part of 1885 was dry. Another interesting case is that of the general drought over a large portion of the Plateau region in 1889. The Humboldt River in Nevada, which had flowed uninterruptedly for thirty years, went dry. The precipitation on the headwaters of that stream had been decreasing gradually for several years, reaching a minimum of 5.3 inches in 1887, and continuing low during 1888 and 1889. Elsewhere the drought was also severe, but it was finally broken by a succession of atmospheric disturbances, which passed over the Plateau region far south of the usual course of such storms and precipitated heavy rains over central and lower California, Nevada, Arizona, and Utah. As much rain fell at Fort Mohave, in the desert of that name, in the single month of December as fell in the four years 1880–1883. On the other hand, the precipitation of Washington and Oregon was exceedingly scanty, being the least ever known in December at a number of places. The whole system of atmospheric circulation and storm movement seems to have been shifted for the time being 5° or 10° to the southward. The meteorological conditions for the month were so exceptional, and withal so instructive, that they have been reproduced as Charts IV and V, respectively. The first named shows the pressure distribution and prevailing winds for the month; the second, the precipitation. To complete the series, two additional charts, Nos. VI and VII, have been reproduced, as illustrating the conditions that obtain during a month of deficient rainfall on the Pacific Coast.

The rainfall of the Pacific Coast is due, first, to its position in latitude, viz, on the southern edge of the great highway of storms striking the continent from the North Pacific, and, second, because the ordinary ascensional movement of air in cyclonic storms is greatly augmented by the sharp contrasts of valley and mountain, which tend to force upward relatively large masses of warm, moist air.

The prevailing winds and the pressure distribution shown on Chart IV are very favorable to heavy precipitation in California and the Plateau region. The pressure distribution is abnormal, as, also, the rainfall; indeed, a similar configuration of the isobars could not be found in a brief search through the records of the last twenty years. The chart represents an extreme condition, viz, a transfer of the usual track of low-pressure areas of the northern boundary southward to central California and the Plateau regions of Nevada and Arizona, thus giving copious rains to a region the greater portion of which is ordinarily almost destitute of rain. Such a condition may not happen again in the next twenty years, but, having once occurred, it must henceforth be included among the possibilities of Pacific Coast weather.

Ordinarily the Plateau region of Nevada and Utah in winter is covered by an area of high pressure whose characteristics are comparatively clear skies and little or no precipitation. Chart VI shows the winter high of the great basin as having a westward and northwestward extension, so that Washington, Oregon, and California come under its influence and northerly winds and clear weather prevail in California—a condition, it is needless to say, inimical to the precipitation of moisture.

The average paths of atmospheric disturbances in the United States have been determined by Prof. F. H. Bigelow (Weather Bureau Bulletin No. 20, Storms, Storm Tracks, and Weather Forecasting), but the causes which lead to the migrations of storms from beaten paths, and upon which the character of the rainfall, whether scant or excessive, seems to depend, are not known.

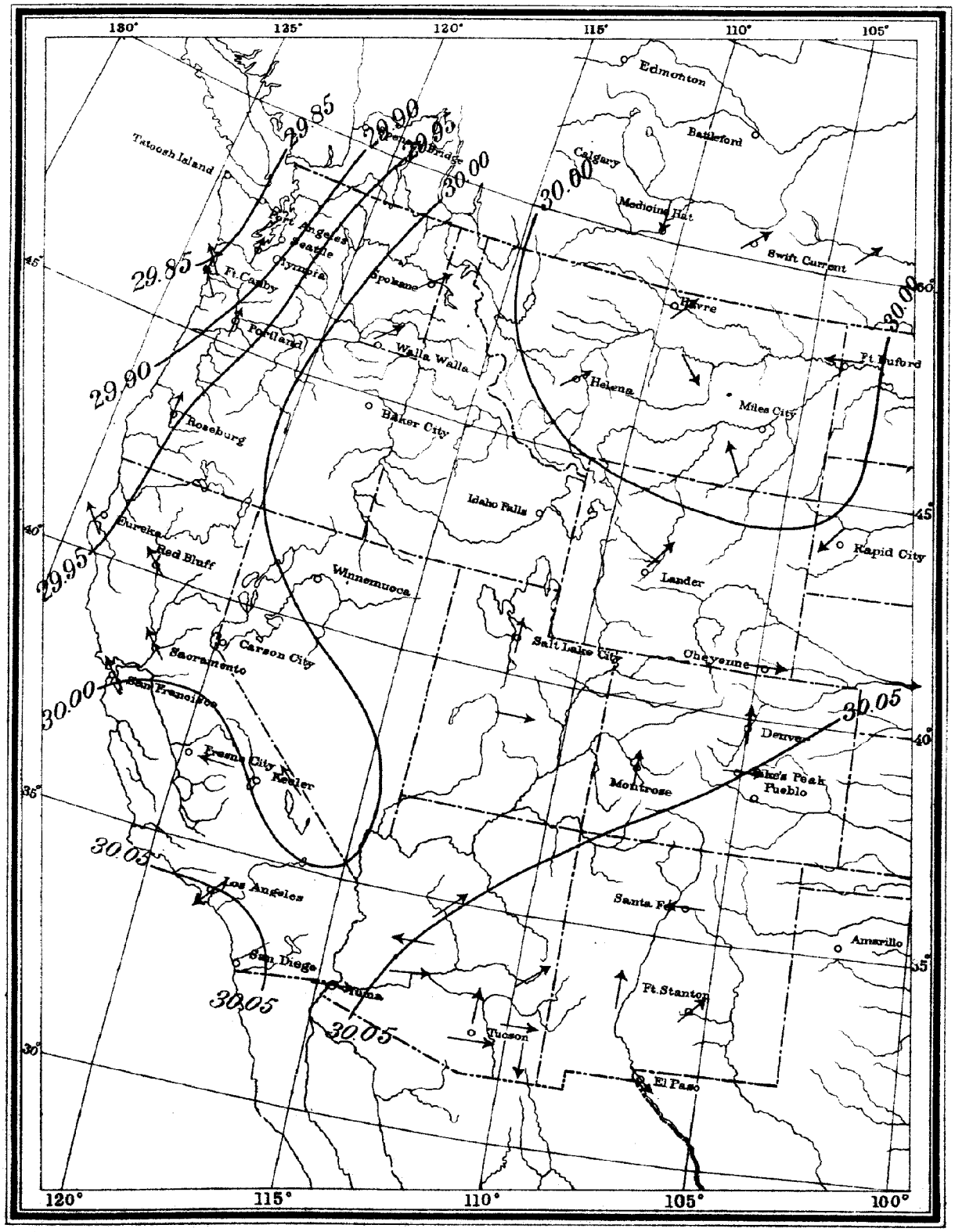
It will doubtless be remembered that the drought of 1895 east of the Rocky Mountains was broken in many States during the early part of 1896, although at the end of that year a deficiency of rainfall still existed in the South Atlantic and Gulf States. The present spring (1897) has witnessed a flood in the Lower Mississippi greater than any for a number of years previous. The distribution of pressure and the prevailing winds favorable to heavy rains in the central and lower valleys (March, 1897) are shown on Chart VIII; those unfavorable (March, 1885), by Chart X. Charts IX and XI show the distribution and lineal depth of rainfall for corresponding periods, and the tracks of low-pressure areas have also been added in red.

We can do no more than present the facts as they exist. The treatment of this subject has, necessarily, been superficial, and, in a measure, unsatisfactory. It has not been possible, nor is it believed to be desirable to undertake, with the data available at present, a systematic investigation of the underlying causes of rainfall variation, but rather to carry along such an investigation in connection with other studies of the general atmospheric circulation.

Pressure Distribution and Prevailing Winds, December, 1889.

(Typical of a wet month on the California Coast.)

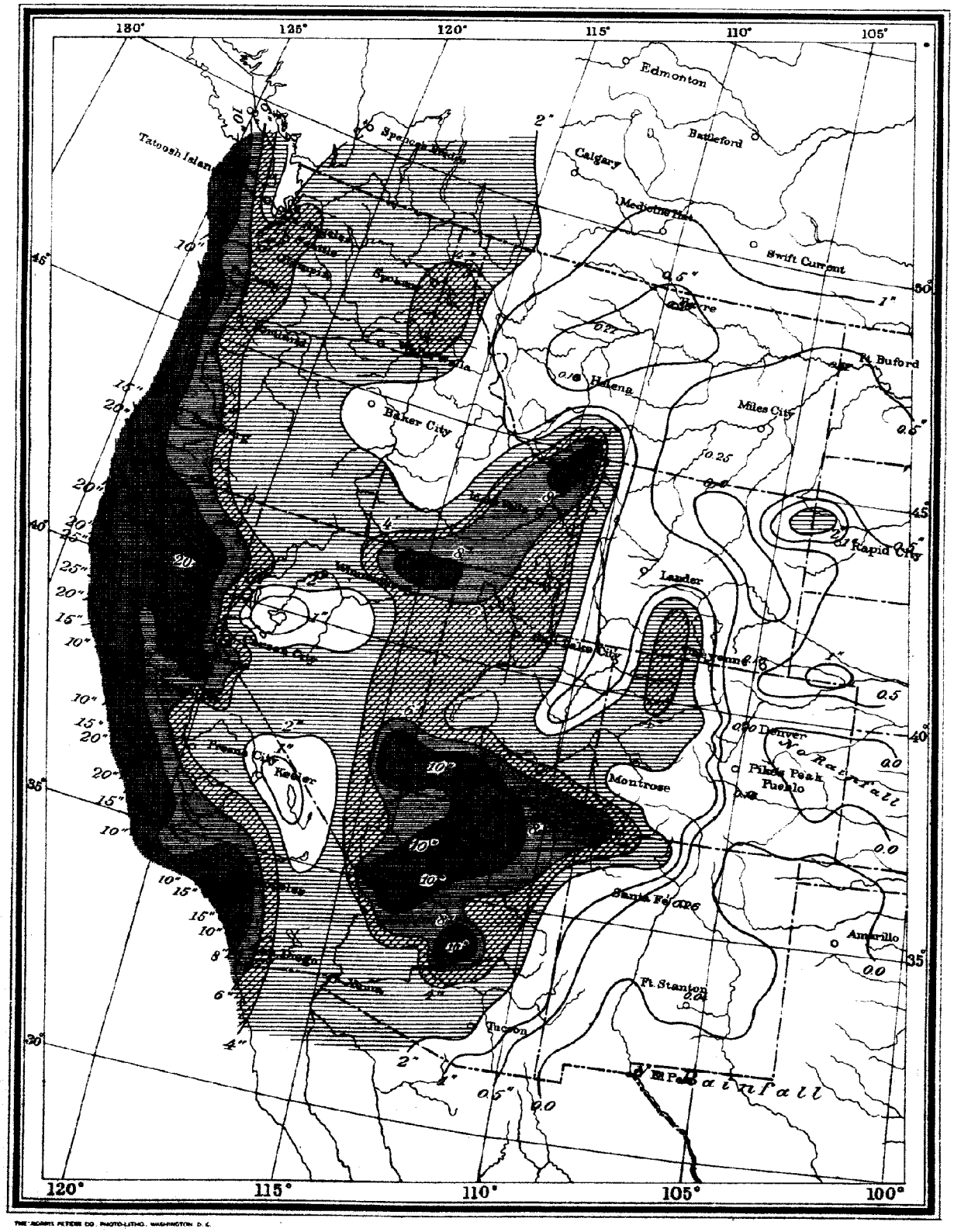
Chart IV.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

Rainfall, December, 1889.

Chart V.

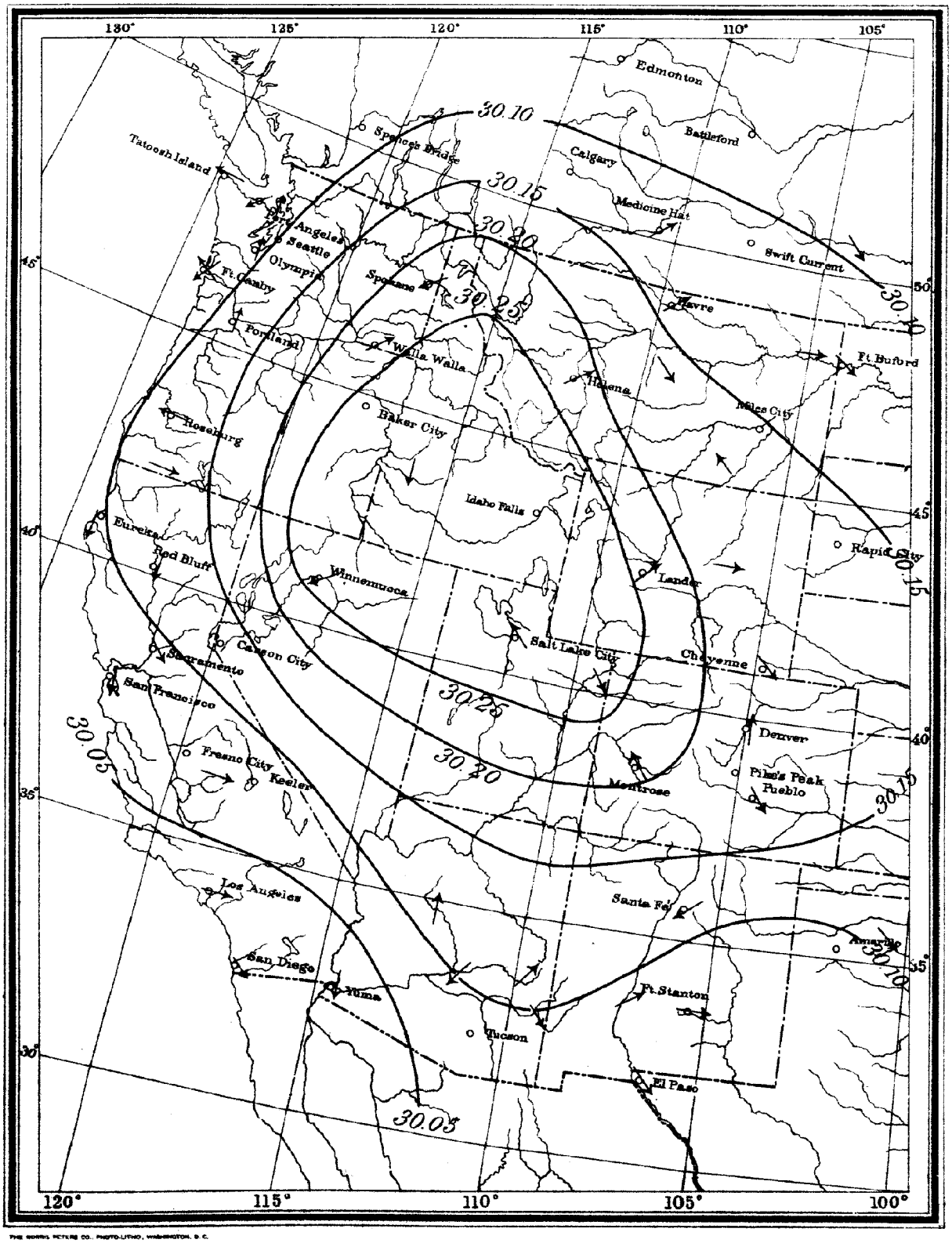


THE BORRIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

Pressure Distribution and Prevailing Winds, January, 1889.

(Typical of a dry month on the California Coast.)

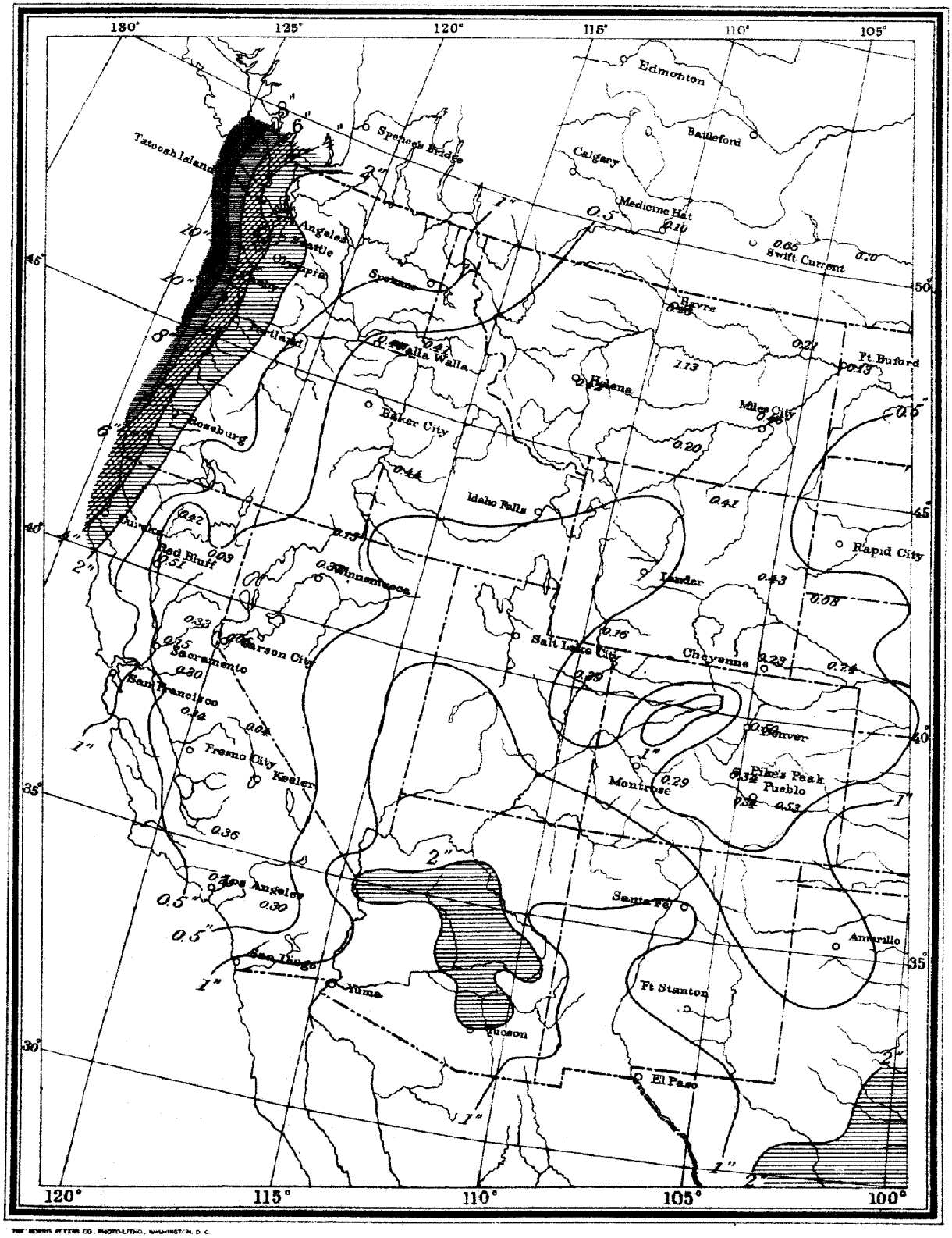
Chart VI.



THE BORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

Rainfall, January, 1889.

Chart VII.

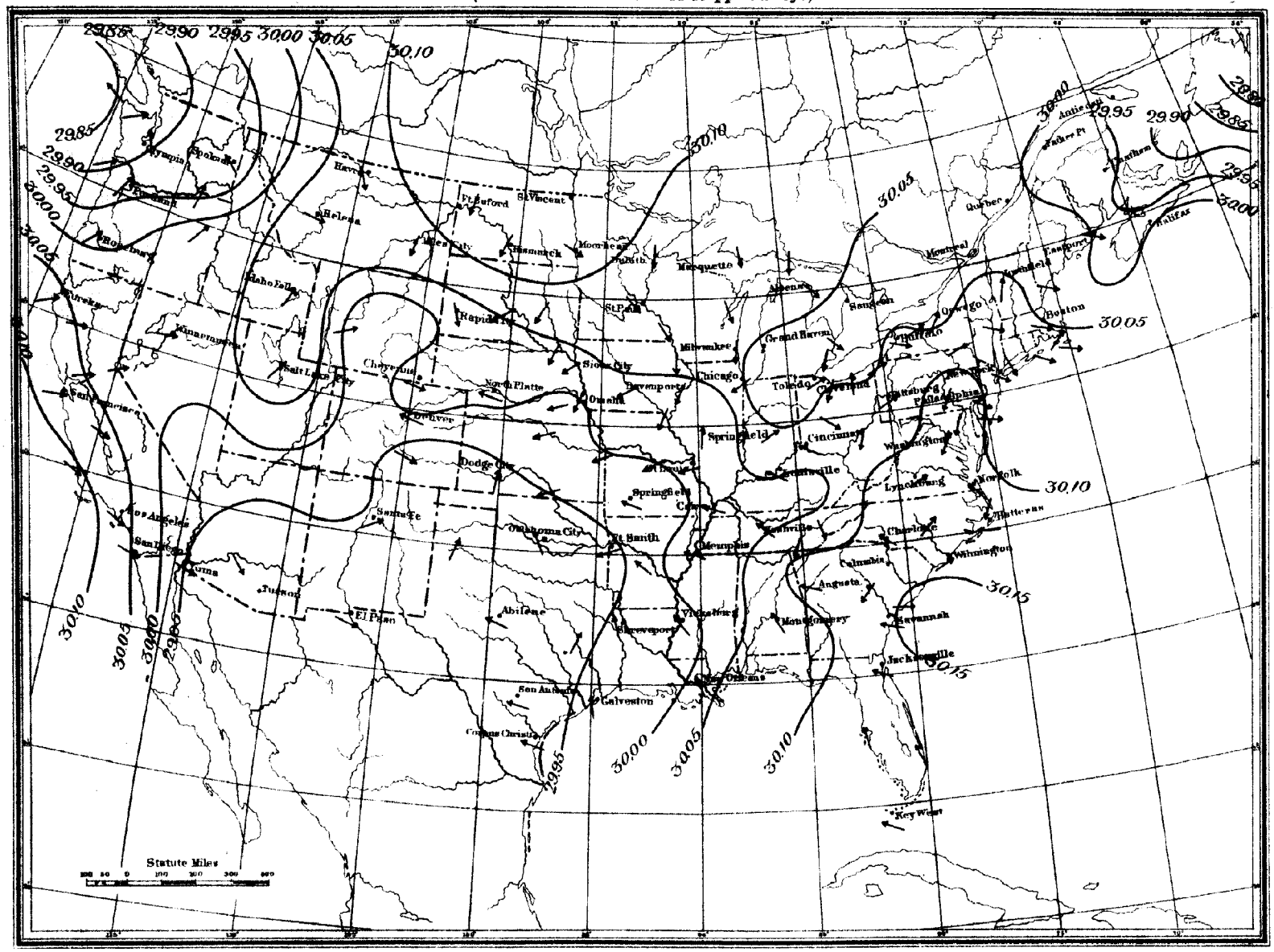


THE MORRIS PETTER CO., PHOTO-LITHO., WASHINGTON, D. C.

Pressure Distribution and Prevailing Winds, March, 1897.

(A wet March in the Mississippi Valley.)

Chart VIII.

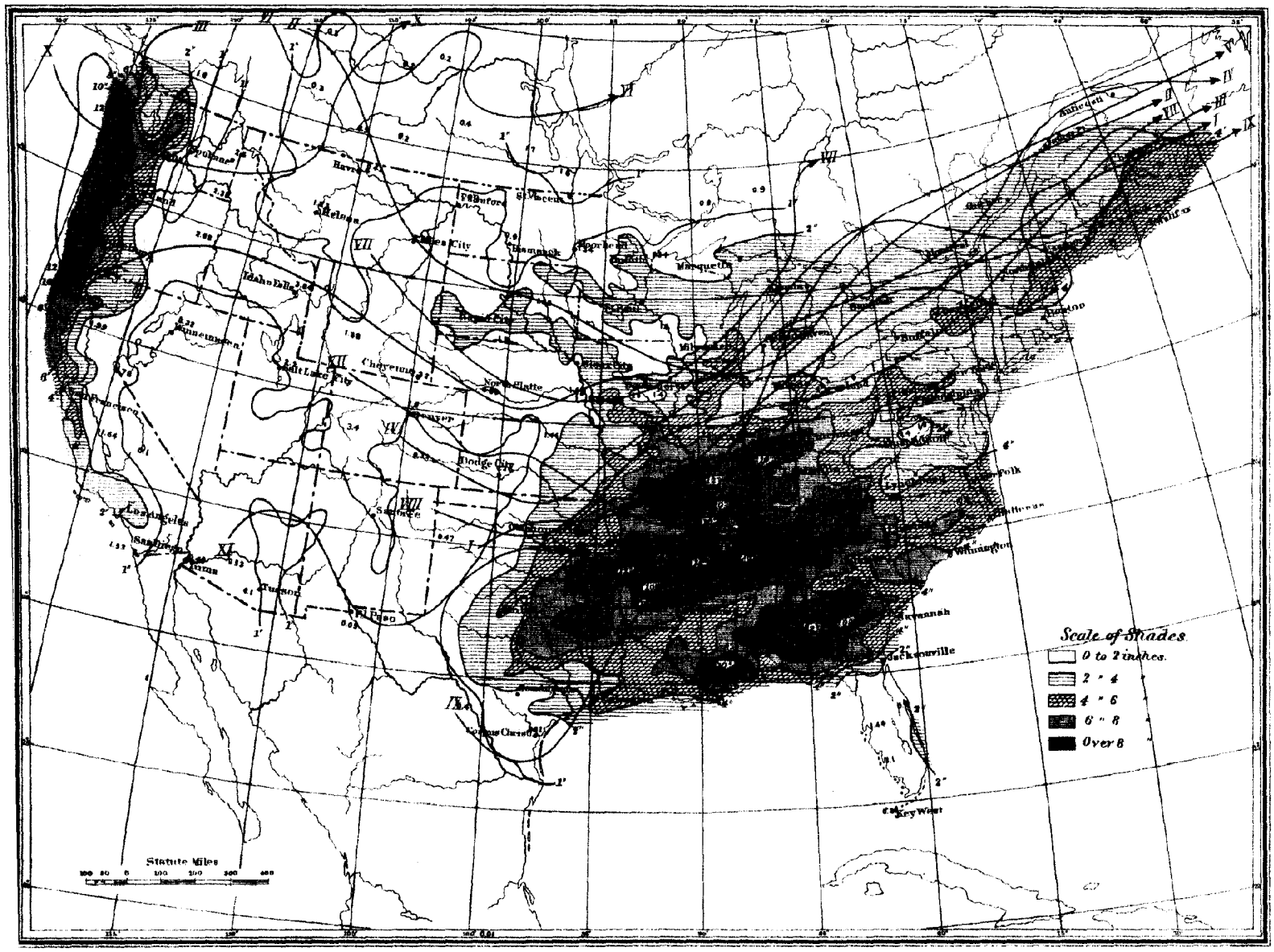


THE MORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

Precipitation, March, 1897.

(Tracks of low pressure areas in red.)

Chart IX.

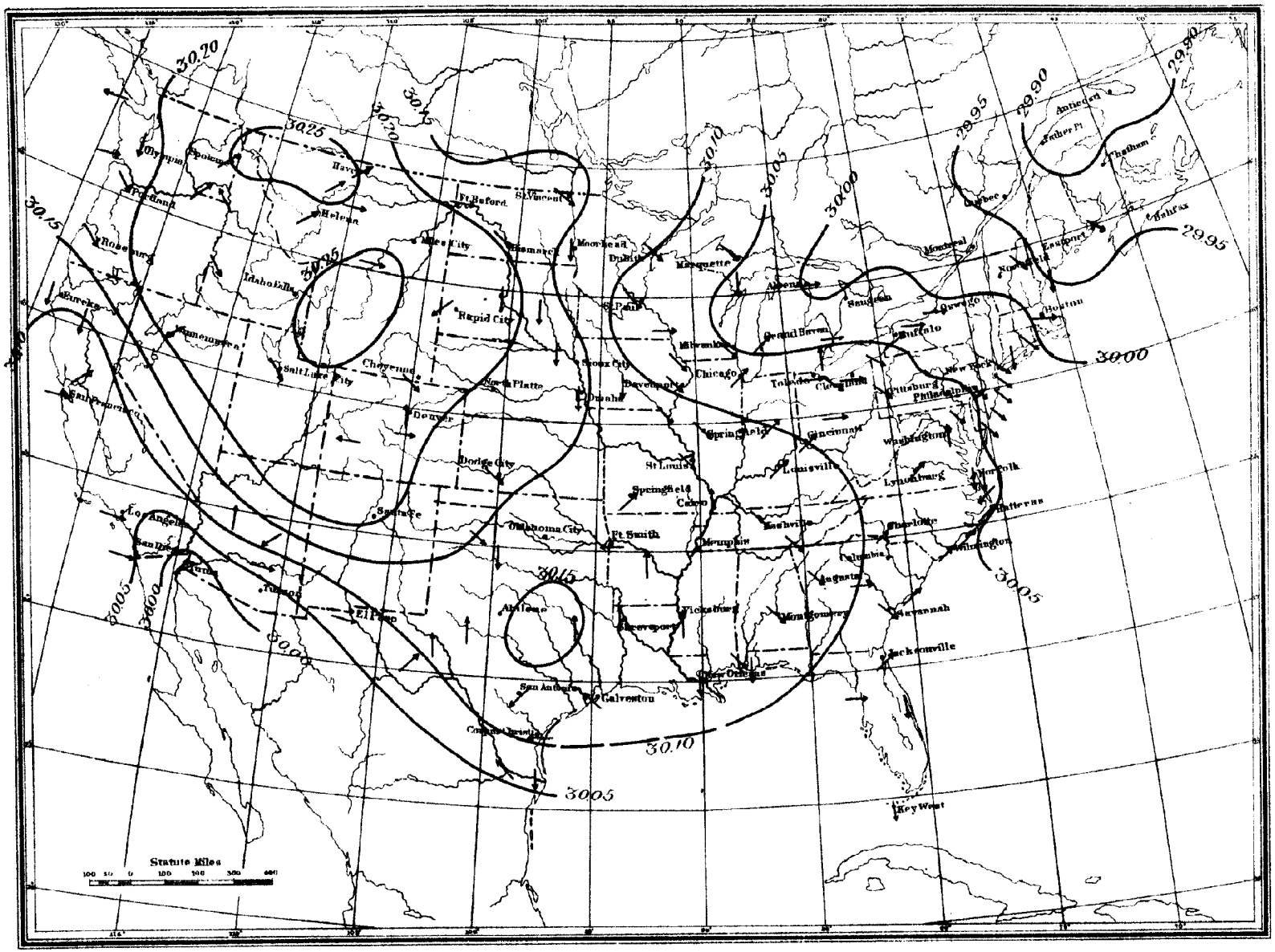


THE BOHRIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

Pressure Distribution and Prevailing Winds, March, 1885.

(A dry March in the Mississippi Valley.)

Chart X.

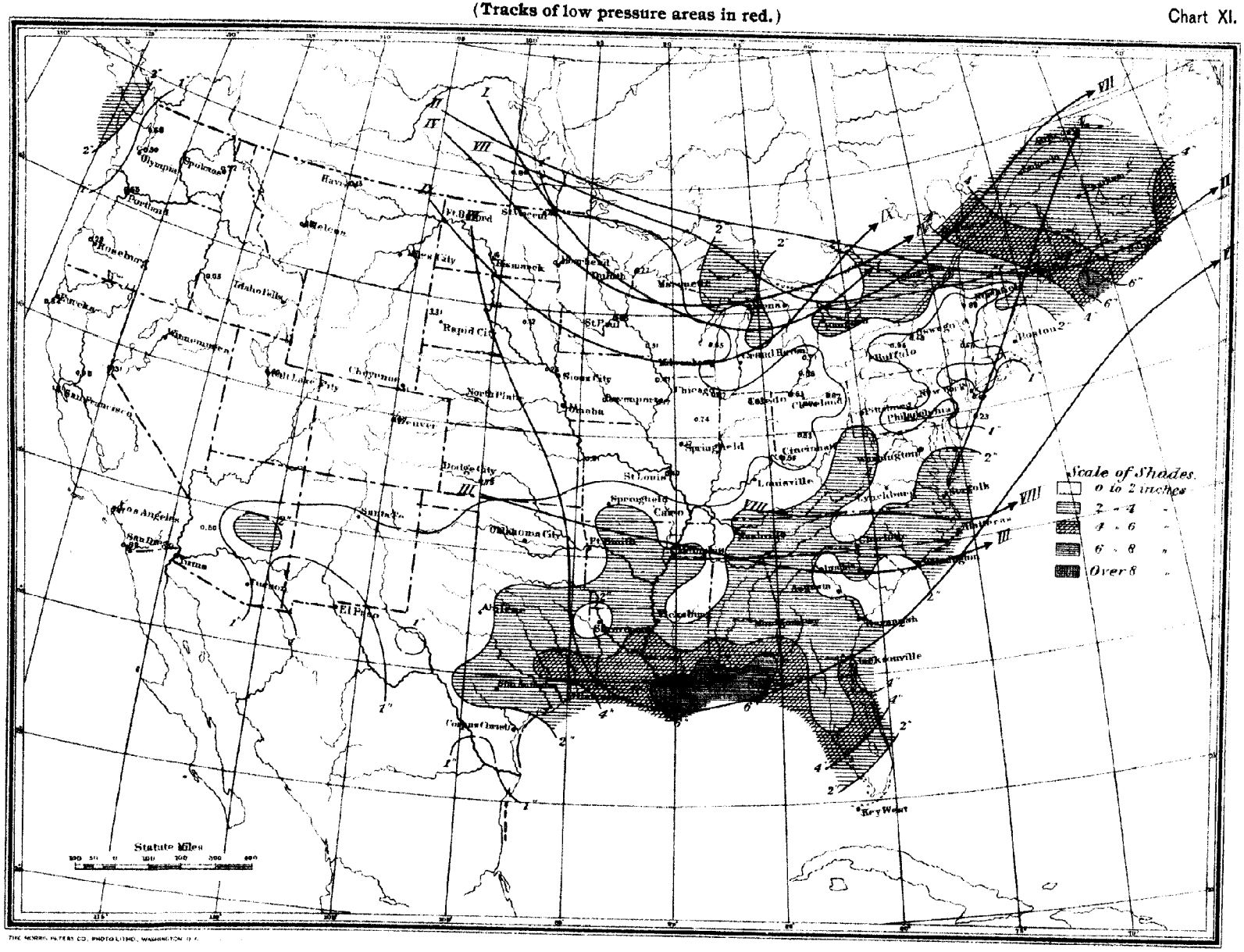


THE MORRIS PETERS CO. PHOTO-LITHO. WASHINGTON, D.C.

Precipitation, March, 1885.

(Tracks of low pressure areas in red.)

Chart XI.



THE MORRIS PETERS CO. PHOTO-LITHO. WASHINGTON D.C.

VI.—DETAILS OF PRECIPITATION BY GEOGRAPHIC DISTRICTS.

There will be found in this chapter tables of mean monthly and annual precipitation, greatest and least annual precipitation ever recorded, the geographic coordinates of the stations, and other details. The tabular matter has been supplemented by a brief text, in which a short account of the general topographic features of each district and other information is given.

In selecting the stations which appear in the tables, due regard was had for length and continuity of record and accuracy, the endeavor being to present the latest and most reliable information respecting the rainfall of the United States, so arranged that it can be used either as a whole or merely for a single geographic district.

TABLE V.—MONTHLY AND ANNUAL AVERAGES OF PRECIPITATION, ANNUAL EXTREMES, ETC.

Stations.	Latitude.	Longitude.	Elevation.	Record. From—	Record. To—	Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual. Mean.	Annual. Extremes. Highest.	Annual. Extremes. Lowest.	Ratio.	
WASHINGTON.	° ′	° ′	Feet.				In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.		
Neah Bay	48 22	124 37	40	1863	1896	15	16.4	12.3	11.7	7.6	5.2	5.0	2.2	2.5	6.9	9.5	14.3	16.4	109.7	136.0	79.6	124	73
Olympia	47 03	122 53	36	1877	1896	18	8.1	6.7	5.0	4.0	2.7	1.6	0.7	0.7	2.8	4.7	7.7	9.8	54.5	73.4	33.6	135	62
Ellensburg	47 00	117 32	1,500	1884	1896	7	1.6	0.7	0.5	0.9	0.9	0.3	0.3	T	0.5	0.4	1.4	1.5	9.0	11.8	6.7	131	74
Colville, Fort	48 43	117 50	1,963	1859	1880	13	2.4	1.6	1.6	1.0	1.8	1.5	1.3	0.6	0.6	1.1	1.9	1.8	18.8	32.7	8.4	174	45
Spokane	47 40	117 25	1,909	1881	1896	15	2.5	1.9	1.4	1.4	1.5	1.6	0.7	0.4	1.0	1.6	1.9	2.7	18.6	25.7	13.5	138	73
Walla Walla	46 02	118 30	930	1857	1896	27	1.6	1.4	1.5	1.4	1.7	1.2	0.5	0.3	0.8	1.4	1.7	1.9	15.4	23.1	7.1	150	46
OREGON.																							
Astoria	46 11	123 48	38	1850	1896	34	12.3	8.5	9.2	5.7	3.8	3.1	1.2	1.4	3.4	5.6	10.5	12.3	77.0	100.5	49.4	131	64
Portland	45 32	122 43	80	1870	1896	27	7.0	5.9	5.5	3.4	2.5	1.8	0.5	0.6	1.6	3.7	6.1	7.6	46.2	67.2	30.8	145	67
Cascade Locks	45 40	121 50	150	1879	1896	16	12.9	9.9	7.2	6.5	3.7	2.6	0.9	0.6	3.7	7.2	9.7	14.4	79.3	100.6	56.2	127	71
The Dalles	45 33	121 12	106	1850	1896	23	3.7	2.3	1.9	0.8	0.8	0.5	0.2	0.2	0.9	1.3	2.7	3.6	18.9	43.7	11.9	231	63
Bandon	43 05	124 30	40	1878	1896	19	12.6	8.7	7.7	5.9	3.9	1.8	0.6	0.5	2.7	5.2	6.9	12.2	68.7	104.0	47.7	151	69
Roseburg	43 13	123 20	523	1877	1896	19	6.3	4.8	3.6	2.7	2.1	1.2	0.4	0.3	1.1	2.7	4.0	6.4	35.6	46.9	22.4	132	63
Klamath, Fort	42 41	121 50	4,200	1864	1889	13	3.3	2.5	2.5	1.6	1.2	0.8	0.4	0.3	0.5	1.6	3.3	3.5	21.5	30.6	9.6	142	45
Harney, Camp	43 00	119 00	4,600	1867	1880	11	1.5	1.1	1.3	1.0	0.9	0.8	0.3	0.2	0.2	0.5	1.4	1.6	10.8	18.2	4.7	169	44

WASHINGTON AND OREGON.

Physical features.—The western third of both States is traversed by two parallel mountain ranges, with a fertile and thickly populated valley between them. The Coast Range does not reach an altitude in general much greater than 2,000 feet in Oregon and 3,000 in northwestern Washington. The Cascade Range is much the loftier of the two, both as regards isolated peaks and the general surface, the latter being 6,000 feet or more in altitude for almost the entire length of Oregon, and probably half as great a distance in Washington. The Blue Mountains in northeastern Oregon also reach an altitude of 5,000 feet and over. The country east of the Cascades in Oregon is a lofty plateau, whose general surface, excluding the valleys of streams tributary to the Columbia and Snake rivers, is from 4,000 to 6,000 feet above sea level.

The Cascade Range divides the State of Washington into two parts, eastern and western Washington, wholly unlike, both as to climate and topography. Eastern Washington abounds in rolling plains and valleys. Western Washington contains the most important waterway of the State, Puget Sound, which, with its bays and inlets, embraces an area of nearly 2,000 square miles. The west coast of the State is a mountainous region, heavily timbered, and almost without settlement from Cape Flattery to Grays Harbor.

Rainfall of Washington.—The average annual rainfall of Washington varies from about 110 inches on the shore line of Clallam County to less than 10 inches in the Yakima Valley on the eastern or leeward side of the Cascades.

The area of heavy rainfall is coextensive with the western coast region in latitude, and doubtless extends eastward to the summit of the Olympic and Cascade ranges. Measurements at Aberdeen, about midway of the western coast and 18 miles inland, indicate an average fall of about 80 inches per annum. Farther south, at Astoria, Oreg., separated from Washington by the Columbia River only, the average fall is 77 inches.

The rainfall of Puget Sound Basin varies from 54 inches at Olympia to 22 inches at Fort Townsend, at the northern extremity. The rainfall on the southern shore line of the Straits of Fuca is also quite variable, diminishing from 110 inches at Neah Bay to 29 inches at Port Angeles and to 22 inches at Fort Townsend, at the mouth of Puget Sound, as above mentioned. The physical causes that contribute to the rapid decrease are not clearly apprehended.

Both Port Angeles and Neah Bay are situated on the south shore of the Straits of Fuca, less than 60 miles apart. The Olympic range of mountains, with elevations varying from 2,000 to 4,000 feet, parallels the shore line at a distance of from 6 to 8 miles. South of Neah Bay—that is, inland toward the mountains—the country is hilly and heavily timbered, with a range of hills from 200 to 1,000 feet above sea level, running in a general easterly and westerly direction and about 4 miles back from the straits. The surface winds at Neah Bay during rains are from a direction between south and east, or generally from a land area. At Port Angeles the surface winds differ from those of Neah Bay only in having at times a westerly component; but, since westerly winds are dry winds on the Pacific Coast, the explanation of the phenomenon must be sought on other lines.

The rain winds of the Pacific Coast are generally from a direction between south and east, or from a land surface, contrary to a somewhat prevalent notion that they blow from the warmer ocean to the colder land area.

The rainfall on the western slope of the Cascade Range is greater than in the Puget Sound Basin, as might be expected, but on the eastern flank, less than 200 miles from the Pacific, the annual fall, at an elevation of about 1,000 feet, as in the Yakima Valley, dwindles to about 10 inches.

No rainfall observations have been made over a great part of the Great Plain of the Columbia, locally known as the Big Bend country. It is quite probable that the fall is between 10 and 15 inches per annum, and this statement is borne out by the fact that between the mouth of the Spokane and the junction of the Snake, a distance of 280 miles, no stream of any consequence flows northward or westward from the Great Plains into the Columbia. On the other hand, a number of streams fed by the precipitation on the Cascades flow into the river from the opposite side, thus affording an abundance of water for irrigation or other purposes.

The rainfall of the extreme eastern line of counties is about 18 inches per annum, decreasing gradually to the westward until the minimum of the State (10 inches) is reached in the Yakima Valley.

TABLE V.—MONTHLY AND ANNUAL AVERAGES, OF PRECIPITATION, ANNUAL EXTREMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record. From—	Record. To—	Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual. Mean.	Annual. Extremes. Highest.	Annual. Extremes. Lowest.	Ratio.	
CALIFORNIA.																							
Coast.	° ′	° ′	Feet.				In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.		
Crescent City	41 45	124 12	50	1885	1896	11	13.1	8.9	9.1	7.1	4.5	2.0	0.4	0.1	1.8	4.4	8.8	13.9	71.0	82.2	47.5	116	67
Fort Humboldt	40 46	124 10	50	1854	1896	28	6.6	5.2	5.4	3.5	1.7	0.7	0.1	0.1	0.8	2.1	3.8	7.1	37.1	60.4	21.9	163	59
Mendocino	39 18	123 48	.....	1871	1890	14	10.0	8.7	7.2	4.5	1.3	0.4	0.1	T.	0.6	2.8	6.5	9.3	51.5	75.3	26.0	146	59
Fort Ross	38 35	123 05	.....	1874	1896	20	12.0	6.8	7.3	4.2	1.8	0.7	0.1	T.	0.8	2.8	6.8	8.8	52.2	88.0	23.6	169	45
San Francisco	37 48	122 26	60	1849	1896	47	5.0	3.5	3.1	1.9	0.7	0.1	T.	T.	0.2	0.9	2.8	5.2	23.4	38.7	12.0	165	51
Santa Cruz	36 58	122 02	25	1873	1896	20	5.4	4.0	3.6	2.4	1.0	0.2	T.	T.	0.5	1.7	3.1	5.3	27.2	44.9	16.8	165	62
Monterey	36 37	121 52	40	1847	1896	21	2.9	2.5	2.8	1.5	0.6	0.1	T.	T.	0.1	0.6	1.5	3.5	16.1	28.6	8.3	178	52
San Luis Obispo	35 18	120 39	270	1869	1896	24	4.8	3.6	3.2	1.8	0.3	0.1	T.	T.	0.2	1.1	1.9	4.4	21.4	50.0	12.2	234	57
Santa Barbara	34 25	119 40	20	1867	1896	29	3.8	3.4	2.3	1.3	0.4	0.1	T.	T.	0.1	0.7	1.7	3.9	17.7	38.8	8.1	219	46
San Diego	32 42	117 14	150	1850	1896	47	1.7	1.9	1.4	0.7	0.3	0.1	0.1	0.1	0.1	0.3	1.0	2.0	9.7	27.5	2.9	284	30
Northern interior.																							
Fort Gaston	41 05	123 15	397	1861	1892	28	10.4	8.0	7.4	4.7	1.9	0.8	0.2	0.1	0.8	2.8	7.0	10.5	54.6	71.2	34.9	130	64
Scott Valley	41 45	123 02	2,570	1859	1891	32	4.9	3.2	2.6	1.8	1.2	0.6	0.5	0.2	0.5	1.2	2.9	5.2	24.7	37.0	14.6	150	59
Yreka	41 45	122 32	2,635	1871	1896	22	3.5	2.1	1.5	1.1	1.3	0.6	0.5	0.2	0.4	1.1	2.2	3.0	17.5	28.0	9.4	160	54
Great Valley.																							
Redding	40 36	122 27	565	1874	1896	22	7.7	4.3	4.8	3.2	2.2	0.5	0.1	0.1	0.6	2.2	3.6	7.1	36.6	62.3	18.4	170	50
Red Bluff	40 10	122 15	342	1872	1896	25	4.5	3.5	2.9	2.0	1.2	0.4	0.1	T.	0.6	1.4	3.0	4.8	24.4	49.1	12.7	201	52
Marysville	39 09	121 35	69	1871	1896	24	3.4	2.7	2.3	1.6	0.9	0.3	T.	T.	0.3	1.0	2.0	3.7	18.2	33.8	11.2	186	62
Sacramento	38 35	121 30	64	1849	1896	47	3.9	2.8	2.9	1.9	0.8	0.1	T.	T.	0.2	0.7	2.1	4.5	19.9	34.8	8.4	175	42
Stockton	37 58	121 15	20	1853	1896	31	2.6	1.9	1.8	1.3	0.6	0.1	T.	T.	0.2	0.5	1.3	2.9	13.2	22.6	3.0	171	23
Fresno	36 44	119 48	295	1877	1896	19	1.5	1.3	1.4	1.2	0.4	0.1	T.	T.	0.2	0.4	1.0	1.8	9.3	18.0	5.7	194	61
Tulare	36 13	119 19	289	1874	1896	22	1.4	1.1	1.1	0.8	0.4	0.1	T.	T.	0.1	0.3	0.5	1.2	7.0	13.7	4.2	196	60
Foothills region.																							
Folsom City	38 40	121 10	182	1861	1896	25	4.7	3.4	3.5	2.3	1.2	0.2	T.	T.	0.4	1.1	2.7	4.6	24.1	34.7	8.5	144	35
Shingle Springs	38 39	120 55	1,393	1849	1894	25	7.2	4.5	5.4	3.0	1.5	0.2	0.2	0.0	0.3	1.2	4.0	7.6	35.1	67.7	18.4	193	52
Placerville	38 44	120 48	2,109	1874	1896	19	9.0	5.5	7.0	5.3	2.5	0.6	T.	T.	0.7	2.3	5.2	8.8	46.9	74.1	32.3	158	69
Grass Valley	39 15	121 02	2,448	1872	1896	24	10.1	7.2	7.5	5.2	2.5	0.6	T.	T.	0.8	2.5	5.4	9.1	50.9	79.1	27.3	155	54
Nevada City	39 17	120 00	2,500	1863	1896	26	11.6	7.5	8.3	5.4	2.4	0.6	T.	T.	0.7	2.2	6.9	11.8	57.4	102.8	30.0	179	52
Upper Sierras.																							
Bowman Dam	39 27	120 34	5,400	1871	1887	16	13.6	11.7	10.2	7.7	2.5	0.8	0.2	T.	0.6	3.3	7.2	13.3	69.8	119.5	43.5	171	62
Truckee	39 19	120 01	5,819	1870	1896	26	5.9	5.1	3.7	2.5	1.3	0.4	0.2	T.	0.3	0.9	2.4	4.6	27.3	43.7	8.9	160	33
Boca	39 24	120 06	5,531	1870	1896	25	4.3	3.7	2.6	1.5	0.8	0.1	0.1	T.	0.1	0.5	1.3	3.8	18.8	38.4	2.4	204	13
Los Angeles and San Bernardino plains.																							
Los Angeles	34 03	118 12	330	1872	1896	24	3.8	3.4	2.5	1.1	0.4	0.1	T.	0.1	0.1	0.7	1.5	3.6	17.2	40.5	5.6	235	33
San Fernando	34 16	118 26	1,066	1877	1891	14	2.4	3.2	2.7	1.6	0.4	0.1	T.	T.	0.1	0.7	1.4	3.2	16.0	37.0	5.4	231	34
San Bernardino	34 06	117 18	452	1870	1896	25	3.5	2.9	2.6	1.4	0.5	0.1	T.	0.2	0.1	0.6	1.5	3.2	16.6	37.2	5.6	224	34
Desert region.																							
Indio	33 49	116 14	20	1877	1896	16	1.0	0.5	0.2	T.	T.	T.	T.	0.2	T.	0.1	0.2	0.6	2.8	7.0	0.1	250	4
Mohave	35 03	118 11	2,751	1876	1896	17	0.9	1.0	0.8	0.2	T.	0.1	0.1	T.	0.1	0.2	0.2	1.4	5.0	15.9	0.3	318	6

The bulk of the rain and snow falls in the winter time, although there is no month in which rain or snow does not fall. The summer rains, however, are light, except on the west coast.

Rainfall of Oregon.—Here, as in Washington, the area of heavy rainfall is found on the coast, decreasing slightly from north to south. The rainfall in the narrow gorge where the Columbia River breaks through the Cascade Range is also heavy, but this is undoubtedly due to local causes. A similar case of very heavy precipitation at a single isolated station is that of Glenora, on the summit of the Coast Range, in Tillamook County, about 30 miles from the ocean. At this place the annual fall in 1896 was 169 inches, probably the greatest rainfall ever recorded in the United States in a single year. The annual average on the coast is about 70 inches, but the fall of individual years may be as much as 100 inches or as little as 35 inches.

In the lower and middle Willamette Valley the fall is about 46 inches; on the headwaters of the Willamette it is probably 40 inches or less. The fall decreases slowly to the southward, being 35 inches in Douglas County and a less amount in the mountainous region of the southern tier of counties. On the eastern slope of the Cascades the fall is about 20 inches; over the greater portion of the plateau region of central and eastern Oregon it is between 10 and 15 inches, rising to 15 and possibly 20 inches in northeastern Oregon.

The distribution by months is substantially the same as in Washington, with the single exception that the rainfall of summer is slightly less, except on the immediate coast.

CALIFORNIA.

Physical features.—The prominent topographic features of this State are the snow-clad range of the Sierra Nevada on the eastern border, the Coast Range on the west, and the Great Valley of California lying between.

Subordinate features, but nevertheless of importance in a study of the rainfall system, are the foothills of both mountain ranges, the desert region of southeastern California, the San Bernardino range of mountains, which forms the dividing line between the desert on the east and the western coast belt, and the San Jacinto Mountains, a southern extension of the San Bernardino range, passing out of the State in San Diego County.

The eastern slope of the Sierra Nevada falls away rather abruptly into the plateau region of Nevada. The western slope is less abrupt, and is cut into innumerable valleys and canyons, through which flow the tributaries of the principal rivers of the State—the Sacramento and San Joaquin. Besides the more prominent features of surface relief above mentioned, there is an infinite variety of smaller detail—an intermingling of mountain, valley, and plain, an adjustment of shore lines, land and water areas—all of which tend to modify and diversify the climate of different sections of the State.

The precipitation of California is almost wholly in the form of rain, except on the mountain slopes and summits. Snow rarely falls on the immediate coast as far south as San Francisco, and while not infrequent in the Great Valley it does not, as a rule, lie on the ground except for a short time.

In the lower foothills region, as in the valley, but little snow falls, yet a few thousand feet higher the snowfall is quite heavy and often covers the ground for weeks. The snowfall on the summits of the Sierra Nevada, where measurements have been made, averages about 30 feet in depth per annum—more than three times as much as has been recorded elsewhere in the United States. Snow falls on the mountains of southern California and occasionally on the desert on the leeward side of the higher mountain ranges.

But one snowstorm (that of February 5, 1887) has occurred at San Francisco during the last twenty-six years, although snow flurries are of occasional occurrence.

The average rainfall of California varies from 70 inches per annum at the northwestern corner to less than 3 inches on the Colorado desert, and the extremes of a single year may vary from zero on the desert to 120 inches in the foothills. There are two areas of heavy rainfall in the State, viz, the western face of the Coast Range north of San Francisco and the western flank of the Sierra Nevada range between latitude 38° and 40°. Smaller areas of comparatively heavy rainfall, surrounded by regions of lesser rainfall, may be found in Santa Cruz County and in San Diego County, the latter at an altitude of over 2,000 feet. The areas of least rainfall are the floor of the Great Valley and the desert country east of the Sierra Nevada and San Bernardino ranges.

TABLE V.—MONTHLY AND ANNUAL AVERAGES, OF PRECIPITATION, ANNUAL EXTREMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record.		Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.			Ratio.	
				From—	To—														Mean.	Extremes. Highest.	Extremes. Lowest.		
IDAHO.	° ′	° ′	Feet.				In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.		
Fort Sherman	47 42	116 38	2,198	1881	1896	13	3.7	2.3	2.2	1.8	2.0	1.4	0.5	0.4	1.3	1.9	3.5	3.5	24.5	38.0	14.1	114	58
Murray	47 33	115 52	.....	1893	1896	3	6.4	3.0	3.1	2.5	4.4	1.9	0.6	0.8	3.2	2.2	6.6	4.4	39.1	43.1	29.8	111	76
Boise City	43 34	116 08	2,768	1864	1896	27	2.3	1.4	1.7	1.3	1.6	0.8	0.2	0.2	0.4	0.9	1.3	2.1	14.2	25.8	6.7	182	47
Idaho Falls	43 30	112 04	4,781	1880	1896	6	2.2	1.7	2.0	1.5	1.2	1.1	0.5	0.6	0.7	1.0	1.2	1.5	15.2	21.3	8.6	142	57

The rains of most value to agriculturists in California are those of April and May, for however heavy the rains of winter may be, a failure of the spring rains generally brings disaster. The tables of monthly averages on page 28 show that points in the foothills region from 2,000 to 2,500 feet above sea level have a greater rainfall in April and May than points elsewhere situated having approximately the same annual mean. The immunity from absolute drought in that region is naturally a little greater than in other portions of the State. The character of the seasonal rainfall prior to April 1, whether light or heavy, early or late, as regards the setting in of the winter rains, affords no indication whatever of the amount of rain that may fall in April and May.

The variation in the rainfall of individual years and the fluctuations from the average are slightly greater on the Pacific Coast than elsewhere in the United States. The amounts of precipitation in the wettest and driest years, respectively, at 47 stations in Washington, Oregon, and California are given in Table V, and the relation of each amount to the general mean, expressed as a percentage, is given in the column headed "Ratio." The record of greatest amounts is of no especial significance, except as it may relate to the construction of storage reservoirs and irrigating systems. The record of least rainfalls, on the other hand, is believed to be useful as affording information upon the minimum amount of natural precipitation that may be expected.

On first thought it might be supposed that years of heavy rainfall would be counterbalanced by years of light rainfall, and that deviations of any given amount above or below the mean would be equally probable. This does not appear to be the case, but in order to more fully test the matter the records of 60 additional stations in California were examined. These gave an average for the wettest year of 77 per cent above the mean and for the driest year of 51 per cent below the mean. The average deviation at stations having approximately the same general mean was also determined, that it might be seen whether or not there is any definite ratio between the general mean and the amount of rain that falls in extraordinary periods of drought or heavy rainfall. The results are shown below, from which it appears that in droughty periods at least 50 per cent of the mean rainfall will be available, and this seems to be the case whether the latter is 20 or 40 inches.

Annual mean.	Number of stations.	Ratio of wettest year to general mean.	Ratio of driest year to general mean.
Inches.		*Per cent.*	*Per cent.*
0-10	9	210	50
10-20	23	191	51
20-30	7	171	51
30-40	8	165	52
40-50	5	168	52
50-60	8	156	51

The variance in the figures given in the column headed "Ratio of wettest year to general mean" was to be expected, since where the annual mean is of itself very small deviations therefrom which at stations having a greater fall would not be considered large appear to be unduly magnified. Moreover, when rain does fall at a station having a low annual average the rate of fall is very likely to approach that of adjacent points having a higher average.

The summer rainfall of California, even on the mountain tops, is practically *nil*, differing vastly in this respect from the rainfall system of Arizona. In the latter the mountain summits seem to contribute largely to the causes that produce the rainfall of summer. In California the mountains are not effective in causing rainfall during June, July, and August.

IDAHO.

Physical features.—There are but two grand divisions of surface relief in Idaho, viz: (1) The Bitter Root Mountains, whose crests form the eastern boundary of the State, and (2) the great lava-covered plains that extend westward and southward from the mountain slopes.

In the center of the State mountain spurs extend to the westward from the main mass, and even in the plains region isolated mountain groups extrude from the general surface. The known rainfall of the State is almost wholly that of the plains and valleys, the mountain rainfall being as yet practically unknown. Measurements made since 1893 at Murray (elevation about 3,000 feet), in the Cœur d'Alene section, indicate a heavy precipitation in winter, spring, and late fall, but

TABLE V.—MONTHLY AND ANNUAL AVERAGES, OF PRECIPITATION, ANNUAL EXTREMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record.		Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.			Ratio.	
				From—	To—														Mean.	Extremes. Highest.	Extremes. Lowest.		
UTAH.	° ′	° ′	Feet.				In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.		
Salt Lake City	40 46	111 54	4,354	1857	1896	29	1.6	1.6	2.1	2.0	2.0	1.1	0.9	1.3	1.0	1.6	1.5	2.0	18.8	38.0	10.2	203	55
Logan	37 38	112 03	.....	1889	1894	4	0.8	1.2	1.3	0.3	0.8	0.2	2.1	1.9	1.2	0.5	0.3	2.5	13.1	13.7	8.6	105	66
Terrace	41 32	113 33	4,548	1870	1896	22	0.6	0.4	0.5	0.4	0.6	0.2	0.1	0.1	0.3	0.1	0.3	0.7	4.3	10.0	0.7	233	16
Nephi	39 42	111 52	5,056	1883	1892	3	1.0	1.5	1.4	3.1	1.4	0.6	0.6	1.2	1.1	1.4	0.4	2.5	16.2	26.0	8.5	160	53
NEVADA.																							
Winnemucca	40 53	117 50	4,358	1870	1896	26	1.2	0.9	1.0	0.9	0.9	0.6	0.1	0.1	0.3	0.6	0.8	1.1	8.5	18.2	5.5	214	65
Pioche	37 56	114 26	6,110	1877	1893	10	0.9	1.3	1.2	0.9	0.8	0.4	0.5	1.3	0.4	0.5	0.4	2.0	10.6	27.4	5.3	258	50
Wells	41 07	114 56	5,628	1870	1895	24	1.5	1.0	1.0	0.6	0.8	0.5	0.2	0.2	0.2	0.5	0.8	0.4	7.7	17.3	3.4	225	44
Carson City	39 10	119 46	4,630	1875	1896	19	2.7	1.4	1.4	0.9	0.6	0.4	0.2	0.2	0.3	0.4	1.5	2.1	12.1	17.9	6.9	148	57

light in July and August. (See table.) The record of this station may be taken as a basis for the belief that the precipitation of the mountains is upward of 40 inches per annum. The fall on the plains is not, as a rule, sufficient for the needs of agriculture, but in the foothills region, where agriculture is practiced, the rainfall is generally sufficient to mature crops. Snow falls on the mountains to very great depths, and remains on the ground in secluded nooks throughout the year, thus furnishing a perennial supply of water to mountain streams.

The distribution of rain throughout the year is that which has elsewhere been described as the sub-Pacific type, viz, heavy winter and spring precipitation, with a minimum in July and August.

The fall is rather advantageously distributed for the purposes of irrigation, but the storage of the surplus waters of March and April would seem to be necessary at points far removed from the drainage basins of mountain streams.

NEVADA.

Physical features.—Nevada lies almost wholly within the Great Basin, on whose surface all of the rain that falls is either absorbed by the soil or evaporated under the intense insolation of the summer sun. No stream breaks through the barriers that arise on all sides, and but one (the Humboldt) flows across the State. The water that is drained from the eastern flank of the Sierras flows into saline lakes or is lost in the sands of the desert.

The precipitation is extremely light, as will be seen by the data of Table V, and the distribution throughout the year, the bulk of it falling during the winter, is not favorable to agriculture. The rainfall stations of Nevada are mainly on the lower levels, and but little account can, therefore, be taken of the rainfall of the mountain slopes and summits. Pioche, altitude 6,110 feet, in the southern part of the State, has an annual fall of but 10 inches. The average fall at Belmont, Nye County, altitude about 8,000 feet, is probably a little less than 10 inches. The last-named station is higher than the summit of the Sierra Nevada range at the crossing of the Union Pacific, where the average annual precipitation is 43 inches, but it is on the eastern flank of a mountain range of upward of 10,000 feet elevation, a position not favorable to precipitation.

In years of plentiful rainfall as much as 20 inches may fall at stations in the best-watered part of the State; in years of scant rainfall the amount may vary from zero in the southwestern part of the State to 6 or 7 inches in the region directly east of Lake Tahoe.

The summer maximum of rainfall in Arizona obtains in a measure throughout southern Utah and Nevada. Torrential downpours, locally known as "cloud-bursts," occasionally swell the mountain streams and gorges during the warm season.

The distribution of rain throughout the year closely follows the sub-Pacific type.

UTAH.

Physical features.—The eastern and southern parts of Utah lie within the drainage basin of the Colorado River; the northern and western portions lie within the Great Basin. The Wasatch range of mountains runs in a general north and south direction through the northern and central portions of the State. The drainage from the western slopes of this range is carried by numerous small streams flowing to the westward, whose waters eventually reach Great Salt Lake.

The rainfall of Utah is least in the northwestern part of the State, represented in Table V by Terrace, a station on the Central Pacific Railroad. The rainfall of the country immediately east and southeast of Great Salt Lake is undoubtedly heavier than it would be were the lake absent. The Wasatch Range is also a favorable condition to the precipitation of moisture on its western flank. South of the Great Basin, in Garfield and Iron counties, the rains of July and August are heavy, as in Arizona and New Mexico (see the record for Losee, Table V), and there is also a spring minimum which seems to indicate that the rainfall of southern Utah is closely related to the Arizona system.

Dependence is placed almost wholly upon irrigation in all parts of Utah where agriculture is practiced. In years of plentiful rainfall the amount of water available during the crop-growing season, April to August, in the best-watered part of the State, is not more than 8 or 10 inches, the bulk of which falls in April and May. On the other hand, in years of scant rainfall, as little as 2 inches may fall in the same region and during the same period. In the great majority of years not more than 5 or 6 inches may be expected.

TABLE V.—MONTHLY AND ANNUAL AVERAGES, OF PRECIPITATION, ANNUAL EXTREMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record. From—	Record. To—	Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual. Mean.	Annual. Extremes. Highest.	Annual. Extremes. Lowest.	Ratio.	
ARIZONA.	° ′	° ′	Feet.				In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.		
Yuma	32 44	114 36	141	1875	1896	21	0.4	0.5	0.3	T.	T.	T.	0.1	0.3	0.1	0.3	0.3	0.5	2.8	5.9	0.7	211	25
Prescott	34 33	112 28	5,318	1865	1896	25	1.5	1.6	1.6	0.8	0.6	0.1	2.8	3.0	1.2	0.9	0.9	1.8	16.8	26.7	10.0	159	60
Phœnix	33 37	112 02	1,068	1876	1896	15	0.6	0.8	0.7	0.3	0.2	0.1	1.0	1.0	0.5	0.4	0.5	1.0	7.1	12.8	3.7	180	52
Fort Apache	33 48	109 57	5,050	1878	1896	18	1.3	1.9	1.6	0.7	0.6	0.6	3.2	4.1	1.7	1.5	1.1	1.7	20.0	31.0	12.7	155	64
Fort Grant	32 45	110 30	2,000	1873	1896	21	0.9	1.4	1.0	0.3	0.4	0.5	3.3	3.1	1.8	1.1	0.8	1.4	16.0	25.7	9.0	161	56
Tucson	32 14	110 54	2,404	1875	1896	21	0.8	1.1	0.9	0.1	0.1	0.2	2.4	2.6	1.1	0.6	0.7	1.1	11.7	18.5	5.2	158	44
NEW MEXICO.																							
Santa Fe	35 41	106 01	7,026	1850	1896	37	0.6	0.9	0.7	0.7	0.9	1.1	2.7	2.7	1.6	1.1	0.8	0.8	14.6	24.9	7.8	171	52
Fort Stanton	33 29	105 38	7,500	1856	1895	19	0.6	0.8	1.0	0.6	1.0	1.7	3.2	3.8	2.1	1.4	0.8	1.0	18.0	28.8	11.3	160	63
Fort Wingate	35 29	107 45	6,982	1864	1896	30	1.1	1.6	1.0	0.9	0.5	0.6	2.4	2.3	1.3	1.1	0.7	1.0	14.5	26.1	6.4	180	45
Fort Bayard	32 46	108 30	4,450	1867	1896	20	0.7	1.1	0.5	0.4	0.3	0.6	3.2	2.7	1.8	1.1	0.7	0.8	13.9	20.3	5.7	146	41
MONTANA.																							
Havre	48 32	109 42	2,472	1880	1896	16	0.9	0.5	0.5	1.0	1.7	3.1	2.1	1.4	1.2	0.6	0.7	0.5	14.2	25.5	9.8	180	69
Fort Keogh	46 22	105 56	2,372	1877	1896	19	0.6	0.5	0.6	1.1	2.2	2.8	1.2	0.9	0.8	1.0	0.5	0.4	12.6	22.8	9.1	181	72
Fort Maginnis	47 10	109 06	4,310	1882	1890	7	1.8	1.3	1.6	1.2	1.5	2.9	0.9	1.4	1.4	1.1	0.8	0.7	16.7	26.0	9.0	156	54
Virginia City	45 10	112 00	5,600	1871	1896	16	0.6	0.6	1.0	1.2	2.7	2.3	1.4	1.2	1.3	0.8	0.7	0.8	14.6	22.4	7.1	153	49

ARIZONA AND NEW MEXICO.

Physical features.—The mountain system of Arizona appears at the southeastern corner of the Territory, and extends in a general northwesterly direction to the borders of Utah and Nevada. More than half the Territory is above the 5,000-foot contour line, and forms a part of the great Plateau region west of the Rocky Mountains. About one-third of the Territory is sandy plain, gradually rising in elevation from less than 100 feet at Yuma to a rather narrow bench or mesa that faces the plains about 180 miles northeast of Yuma. The elevation of the mesa ranges from 3,000 to 5,000 feet above sea level. Beyond it to the northeast is the high plateau of Arizona.

New Mexico.—The Continental Divide enters New Mexico west of the Rio Grande River as a system of elevated plateaus and mountain ranges, and preserves its mountainous character to the Arizona line. The drainage of a considerable area of western New Mexico is into the Colorado through the Gila and San Juan rivers. The Rio Grande River cuts the Territory into two almost equal parts. The river valley is exceedingly narrow and is flanked on both sides by high mountains or elevated plateaus. The eastern third of the Territory partakes of the nature of the Great Plains, the northern portion draining into the Canadian and the southern into the Pecos, a tributary of the Rio Grande.

The rainfall of Arizona and New Mexico comes very largely in July and August, after the time of maturity of the staple crops. In Arizona the depth of fall varies almost directly with the elevation. The southwestern section receives less than 5 inches per annum; the mountain stations on the plateau from 16 to 20, according to elevation. Generally but very few points receive as much as 20 inches per annum on the average, while the greatest annual fall ever registered in the Territory was 35 inches, at old Camp Grant in 1871.

May and June and October and November are the months of least rainfall. The winter rains begin in December and practically end in March. They are more or less sporadic, and rarely as heavy as the summer rains. The latter are remarkably persistent and very rarely weaken during either July or August. Occasionally the rains may fail for one of the two months even at the higher level stations, but it seldom happens that there is a total failure in both months. At the lower levels—100 to 2,000 feet—failures are much more frequent. The summer rains seem to be largely the result of local convective action, and not altogether dependent upon the movement of areas of low pressure, as in the case of winter rains. There is, however, sufficient variation from year to year to lead to the belief that local convective action is not the sole cause.

MONTANA.

Physical features.—The western third of the State is greatly broken by mountain ranges running in a northerly and southerly direction. The eastern half of the State slopes from an altitude of nearly 5,000 feet to about 2,000 on the Dakota border. The State is well watered. Perennial streams, having their source in the western mountain ranges, flow eastward, eventually reaching the Missouri River.

The rainfall of Montana is most advantageously distributed for the purposes of agriculture, 33 per cent of the annual amount falling in May and June, and 67 per cent in the crop season, April to September, inclusive.

The average for the State is about 14 inches, that amount being common to all sections except the mountains, for which no information is available. Fragmentary observations indicate a greater amount in the northwestern part of the State and in the valley of the Yellowstone, where it enters the State from Wyoming.

Montana lies well within the track of atmospheric disturbances coming from the British possessions. The winter precipitation is light and principally in the form of snow; a portion of which, however, is evaporated by chinook winds and thus lost to the soil. The natural rainfall is generally insufficient for the needs of agriculture, although the deficit is not great except in years of very scant rainfall. Occasionally there is sufficient rainfall to mature crops, but since the years of abundance can not be foreseen the agriculturist must depend upon artificial watering to insure a return for his labor.

TABLE V.—MONTHLY AND ANNUAL AVERAGES, OF PRECIPITATION, ANNUAL EXTREMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record.		Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.			Ratio.	
				From—	To—														Mean.	Extremes. Highest.	Extremes. Lowest.		
WYOMING.	° ′	° ′	Feet.				In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.		
Fort Washakie	42 30	108 53	5,880	1880	1896	12	0.6	0.4	1.5	2.1	2.2	1.0	0.8	0.6	0.5	0.8	0.7	0.4	11.6	20.2	5.2	174	45
Cheyenne	41 08	104 48	6,105	1870	1896	27	0.4	0.4	0.8	1.5	2.3	1.5	1.9	1.6	1.0	0.7	0.3	0.3	12.7	20.8	5.0	164	39
COLORADO.																							
Mountain stations.																							
Pikes Peak	38 50	105 02	14,134	1873	1894	15	1.6	1.5	2.0	3.4	3.8	1.6	4.2	3.8	1.6	1.7	1.9	2.6	29.7	44.6	9.2	150	31
Breckenridge	39 29	106 01	11,503	1889	1896	7	2.0	4.4	3.9	3.1	2.7	1.5	2.2	2.0	1.5	1.5	3.2	3.4	31.4	46.4	23.9	148	76
Climax	39 20	106 15	10,304	1888	1896	6	3.4	4.1	5.0	3.4	3.3	1.3	3.0	2.6	1.3	1.9	2.4	3.1	34.8	45.0	20.2	129	58
Foothills.																							
Fort Collins	40 35	105 02	5,000	1872	1896	10	0.7	0.6	0.8	1.7	2.9	1.7	1.8	1.3	0.9	0.9	0.4	0.3	14.0	18.1	7.1	129	51
Denver	39 45	105 00	5,294	1870	1896	27	0.6	0.5	1.0	2.0	2.7	1.3	1.7	1.4	0.9	0.9	0.7	0.6	14.3	21.5	8.5	150	59
Colorado Springs	38 51	104 47	6,032	1870	1896	12	0.2	0.3	0.6	1.4	2.4	1.9	3.2	2.2	1.1	0.6	0.3	0.3	14.5	18.5	8.6	128	59
Las Animas	38 04	103 12	3,899	1881	1896	12	0.3	0.4	0.6	1.1	1.9	1.4	1.6	1.6	0.6	0.5	0.2	0.6	10.8	15.8	3.8	146	35

WYOMING.

Physical features.—The general elevation of the surface of Wyoming is over 6,000 feet above sea level, a higher general average than for any other State except Colorado. The Continental Divide crosses the State diagonally in a general northwesterly and southeasterly direction. The Laramie Range, which enters from the south just west of Cheyenne, extends in a northerly direction for about 150 miles, thence westerly, merging into what is known as the Sweetwater Range. The Big Horn range occupies the northern central portion of the State, extending to the Montana line. These mountain ranges are the source of a number of perennial streams which give to Wyoming an excellent water supply. The precipitation is not sufficient for agricultural purposes, the annual fall of the plains being about 12 inches, of which nearly 70 per cent comes in the period April to September. April and May are months of comparatively heavy precipitation and occasionally heavy snowstorms. The precipitation of Yellowstone Park has been measured continuously since 1889. The average annual fall is 20 inches. Twenty-five inches per annum would, therefore, seem to be a fair estimate of the mountain precipitation of Wyoming.

COLORADO.

Physical features.—The Rocky Mountains reach their highest development in Colorado. Numerous peaks above 14,000 feet elevation abound, and almost half the State is furrowed by mountain ranges and spurs. West of the Continental Divide a number of short chains and spurs run northwest, west, and southwest, and beyond and between them a lofty plateau extends to the eastern rim of the Great Basin. East of the mountains the plains, with an average elevation of about 4,500 feet, slope away toward the Kansas line. The Divide, a low forest-covered ridge separating the waters of the South Platte on the north from those of the Arkansas on the south, extends eastward from the mountains 40 miles or more, and is probably 2,500 feet higher than the general surface of the plains.

The precipitation of winter in Colorado is almost wholly in the form of snow. On the lower levels and in the valleys it is light, but on the mountain slopes the fall is much heavier and may continue into April and May.

Atmospheric disturbances, passing north of Colorado, cause but little precipitation in the State except on the western slopes of the Continental Divide; when they pass through or south of the State, heavier precipitation results. It frequently happens, moreover, that the northwestern quadrant of the storm—the dry quadrant farther east—is wholly within the area of precipitation in both Colorado and Wyoming.

Although the annual precipitation of Colorado is small, it is distributed to the best advantage, and there are consequently a few localities, as on the Divide, where cereals may be grown without irrigation. Generally, however, and especially on the plains, the natural precipitation is insufficient for agricultural purposes.

The precipitation of the mountain region is shown by the group of three stations, Breckenridge, Climax, and Pikes Peak, while the eastern foothills region is represented by Fort Collins, Denver, and Colorado Springs. The last station in the group belongs to the plains rather than the foothills. The precipitation of the plains, and also of the parks, is less than in the foothills region. The summit of the Divide, and a narrow strip of territory on either side extending some distance eastward from the mountains, has a greater precipitation than adjacent areas. The rainfall of the mountain region, as will be seen by the tables, increases in July and August, as in New Mexico and Arizona.

TABLE V.—MONTHLY AND ANNUAL AVERAGES, OF PRECIPITATION, ANNUAL EXTREMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record.		Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.			Ratio.	
				From—	To—														Mean.	Extremes. Highest.	Extremes. Lowest.		
THE PLAINS AND MISSISSIPPI VALLEY.																							
North Dakota.	° ′	° ′	*Feet.*				*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*		
Fort Buford	48 00	103 55	1,900	1866	1896	29	0.6	0.5	0.6	1.2	2.4	2.8	1.7	1.2	0.8	0.8	0.6	0.6	13.8	23.3	7.3	169	53
Bismarck	46 47	100 38	1,677	1874	1896	22	0.6	0.6	1.1	2.3	2.5	3.5	2.3	2.0	1.2	1.0	0.8	0.6	18.5	31.0	11.2	168	61
Northern Minnesota.																							
St. Vincent	48 56	97 14	804	1871	1895	24	0.5	0.5	0.8	1.5	2.5	3.9	2.6	2.6	1.7	1.8	0.5	0.6	19.5	33.9	12.7	174	65
South Dakota, southern Minnesota, and southern Wisconsin.																							
Fort Sully	44 39	100 39	1,600	1866	1894	25	0.5	0.4	1.2	2.1	2.6	3.3	2.7	1.9	0.9	0.7	0.4	0.5	17.2	24.0	12.1	140	76
Fort Meade	44 26	103 28	3,624	1879	1896	16	0.8	0.5	1.4	2.8	3.5	3.3	1.9	1.7	0.6	0.9	0.7	0.6	18.7	27.1	13.1	145	70
Yankton	42 54	97 28	1,234	1873	1895	20	0.6	0.8	1.2	3.3	4.0	4.1	3.5	3.0	2.6	1.3	0.6	0.8	25.8	40.9	19.8	159	77
St. Paul	44 56	93 05	800	1859	1896	39	1.0	0.9	1.5	2.5	3.5	4.1	3.3	3.8	3.2	2.0	1.3	1.1	28.2	39.2	14.9	139	53
La Crosse	43 49	91 15	744	1872	1896	24	1.2	1.1	1.5	2.4	3.3	4.5	4.0	3.2	4.2	2.3	1.6	1.4	30.7	45.0	17.4	141	57
Madison	43 05	89 24	1,068	1869	1896	28	1.8	1.7	2.4	2.6	3.5	4.5	4.0	3.1	3.1	2.6	1.9	2.0	33.2	53.0	13.1	160	39
Milwaukee	43 02	87 54	697	1841	1896	53	1.9	1.6	2.3	2.8	3.4	3.8	3.2	2.7	3.0	2.2	2.2	1.9	31.0	50.4	20.5	163	66

THE PLAINS AND UPPER MISSISSIPPI VALLEY.

The eastern half of the Dakotas, Minnesota, Wisconsin, the northwestern part of Illinois, Iowa, Nebraska, Kansas, western Missouri, parts of Oklahoma, Indian Territory, and Texas are included in this designation. The general surface of the Plains proper has two slopes; the one upward toward the mountains, the other and more gradual one from the Panhandle of Texas northward and downward to the valley of the Missouri in North Dakota.

This region, by reason of its fertile and easily cultivated soil, is one of the most productive in the United States. The one great disadvantage is the variableness of its moisture supply.

In years of bountiful rain its western margin may be extended almost to the foothills of the Rocky Mountains; in years of average rain it is practically bounded by the ninety-eighth meridian, while in years of scant rainfall there may be partial failure of crops throughout its whole extent. So varied are its capabilities, however, that it rarely happens there is total failure of all crops except in the Far West.

There was a popular notion a few years ago that the rainfall of the plains was steadily increasing. Such an opinion was based, in all probability, upon the fact that from 1881 to 1885 heavy rains fell in parts of western Kansas and Nebraska and other portions of the subhumid region. A climatic change of such vast economic importance was naturally widely heralded. Several writers sought to account for the increase in various ways. It was generally believed that the great change that had been wrought in the general land surface during the thirty years previous was an effective cause in producing heavy rains. The prairie sod had been broken up and many thousands of acres had been put under cultivation. Much of the rain that once ran into the natural drainage channels was now absorbed by the soil, and the opportunities of local evaporation were thus greatly increased.

The fact remained, whatever the theories, that there was rain in moderate abundance where heretofore had been drought and insufficient moisture.

It will, perhaps, clarify our ideas on the subject if we examine in some detail the vicissitudes of rainfall both on the Plains and elsewhere. We shall possibly find that rainfall is not altogether a lawless phenomenon, and that useful conclusions may be drawn from the observations that have been made during the past quarter century. For this purpose the table below has been prepared. Column 1 shows the name of the station; column 2, the number of years of observation; column 3, the mean annual fall; column 4, the maximum or wettest year of the whole period expressed as a percentage of the mean fall; column 5, the percentage of the two wettest consecutive years, column 6, the three wettest consecutive years; columns 7, 8, and 9, the percentage, respectively, of the single driest, the two driest consecutive years, and the three driest consecutive years; columns 10 and 11, the largest number of consecutive years with precipitation above the mean and the percentage, respectively; columns 12 and 13, the largest number of consecutive years with precipitation below the mean and the percentage, respectively; column 14, the percentage of the number of years with precipitation above the mean and the average percentage of all such years; and finally, in column 16, the percentage of all of the years below the mean.

TABLE V.—MONTHLY AND ANNUAL AVERAGES, OF PRECIPITATION, ANNUAL EXTREMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record. From—	Record. To—	Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual. Mean.	Annual. Extremes. Highest.	Annual. Extremes. Lowest.	Ratio.	
THE PLAINS AND MISSISSIPPI VALLEY—cont'd.																							
Nebraska.	° ′	° ′	*Feet.*				*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*		
North Platte	41 08	100 45	2,841	1866	1896	29	0.4	0.4	0.7	2.1	3.0	3.5	2.5	2.3	1.5	0.8	0.4	0.5	18.1	30.1	10.1	167	56
Genoa	41 25	97 40	1,585	1875	1896	21	0.9	0.8	1.2	2.9	4.1	4.5	3.9	2.5	2.8	1.5	0.8	0.9	26.8	37.5	15.4	140	57
Omaha	41 16	95 56	1,113	1870	1896	27	0.7	0.7	1.5	3.1	4.5	5.3	4.6	3.3	3.0	2.6	1.1	1.0	31.4	48.8	17.8	155	57
Iowa.																							
Cresco	43 22	92 07	1,855	1871	1896	25	1.3	0.9	1.8	2.6	3.8	5.0	3.9	2.8	3.6	2.3	1.5	1.4	30.9	43.9	22.7	142	73
Monticello	42 13	91 15	880	1855	1896	42	1.6	1.7	2.4	2.6	3.9	4.5	4.2	3.7	3.8	2.8	2.3	2.3	35.8	52.2	18.6	146	52
Ames	42 03	93 38	1,000	1869	1896	21	1.0	0.8	1.6	2.9	4.1	4.4	4.7	3.4	3.6	2.3	1.3	1.1	31.1	51.1	20.7	164	67
Davenport	41 30	90 38	615	1870	1896	26	1.7	1.6	2.2	2.8	4.2	4.2	3.6	3.6	3.2	2.6	2.0	1.6	33.3	46.8	18.5	141	56
Illinois.																							
Marengo	42 15	88 37	842	1850	1896	45	1.9	1.9	2.4	2.8	3.9	4.3	3.7	3.7	3.8	2.4	2.2	1.9	35.2	56.9	24.0	162	68
Chicago	41 54	87 38	600	1867	1896	30	2.1	2.2	2.4	3.0	3.7	3.7	3.4	2.9	3.0	2.7	2.7	2.2	34.0	45.8	22.4	135	66
Peoria	40 42	89 36	475	1855	1896	41	1.7	2.0	2.6	3.2	3.8	3.7	4.0	3.0	3.5	2.4	2.4	2.3	34.6	53.4	23.6	154	68

TABLE VI.—VARIATION IN ANNUAL RAINFALL.

Stations.	Years of record.	Mean.	Ratio of the wettest years to the general mean.			Ratio of the driest years to the general mean.			Number of years and average fall during longest series of consecutive years above and below the average.				Percentage of years above.	Average fall of all the years.	
			Single wettest year.	Two wettest consecutive years.	Three wettest consecutive years.	Single driest year.	Two driest consecutive years.	Three driest consecutive years.	Years above.		Years below.			Above.	Below.
									Number.	Average.	Number.	Average.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ILLINOIS.		*Inches.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*		*Per ct.*		*Per ct.*	*P. ct.*	*P. ct.*	*P. ct.*
Cairo	25	42.6	144	134	129	62	75	75	4	121	5	83	44	121	83
Marengo	45	35.2	162	156	144	68	70	80	4	140	6	84	44	119	85
Peoria	41	34.6	154	122	117	68	80	85	5	115	3	85	49	115	86
IOWA.															
Cresco	25	30.9	142	133	128	74	78	82	7	120	4	90	48	117	85
Davenport	26	33.3	139	122	115	55	68	72	6	111	4	76	52	114	83
Monticello	42	35.8	146	140	127	52	62	67	3	127	6	86	45	120	84
Logan	27	34.2	164	137	127	49	58	63	5	122	4	84	48	121	81
NEBRASKA.															
Omaha	27	31.4	154	152	141	56	62	69	5	136	5	70	48	122	77
North Platte	29	18.1	164	130	129	61	66	71	3	116	3	71	48	123	78
KANSAS.															
Dodge City	22	19.8	171	149	140	52	58	72	3	140	3	72	38	139	77
EASTERN STATES.															
Albany, N. Y	68	39.5	144	142	132	71	82	83	4	126	8	91	41	114	90
Boston, Mass	79	45.4	149	143	136	60	72	79	14	123	7	86	53	113	85
New Bedford, Mass	83	43.5	141	132	130	71	80	82	9	113	9	86	45	115	88
New York, N. Y	61	44.7	147	132	127	62	74	76	11	122	8	84	43	119	86
Washington, D. C	41	42.9	142	130	124	71	75	78	5	114	5	90	48	115	86
Savannah, Ga	48	50.4	147	132	121	67	78	78	3	121	7	90	40	120	87

THE WETTEST YEAR.

In the case of Illinois, three stations are given: Cairo, in the extreme southern part of the State, with a record of twenty-five years; Peoria, in the north-central portion, and Marengo, in McHenry County near the Wisconsin line, with records extending over forty years in each case. The first-named station has the largest annual mean and the ratio of the wettest year to the mean is least, viz: 1.4: 1. It is possible that a continuation of the observations over a larger period may raise the ratio, but, generally speaking, the greater the annual fall the less the ratio of the wettest year. The remaining stations, Peoria and Marengo, have ratios of 1.6: 1 and 1.5: 1, respectively, and since observations have been carried on uninterruptedly for over forty years, it is reasonable to assume that the fall in the wettest year in Illinois will not greatly exceed about 160 per cent of the mean fall. Proceeding westward to the region of small annual fall, we find at North Platte, Nebr., and Dodge City, Kans.—the outposts of the subhumid region—the ratio of the wettest year to the general mean much higher than in Illinois or other portion of the region under consideration. To test the matter still further, the ratio of the rainfall of the wettest year to the mean at 66 stations throughout the United States was computed. The results are given in the table below, from which it appears the variations noted in the rainfall of the Plains are common to the whole of the United States. In other words, an annual rainfall equaling about 170 per cent of the mean is to be expected once or more in a term of years at all places having a mean fall between 5 and 30 inches. The occurrence of one or more years of heavy rain should not therefore be considered as a permanent change in the rainfall, but rather as a fulfillment of one of the natural conditions of rainfall phenomena. Three consecutive years of rain averaging slightly over 140 per cent of the mean fall have occurred in Kansas, Nebraska, and Illinois. (See columns 5 and 6, Table VI.)

Ratio of wettest and driest years to the mean fall.

Mean fall.	Number of stations.	Average of wettest year.	Average of driest year.
Inches.		*Per cent.*	*Per cent.*
50-60	7	142	70
40-50	23	143	64
30-40	21	154	64
5-30	15	178	55

TABLE V.—MONTHLY AND ANNUAL AVERAGES OF PRECIPITATION, ANNUAL EXTREMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record. From—	Record. To—	Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual. Mean.	Annual. Extremes. Highest.	Annual. Extremes. Lowest.	Ratio.	
THE PLAINS AND MISSISSIPPI VALLEY—cont'd.																							
Kansas.	° ′	° ′	*Feet.*				*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*		
Dodge City	37 45	100 00	2,512	1874	1896	22	0.4	0.6	0.9	1.8	3.1	3.3	3.2	2.8	1.3	1.3	0.5	0.6	19.8	33.7	10.1	170	51
Lawrence	38 58	95 14	849	1861	1896	31	1.2	1.4	2.3	3.2	4.6	5.0	4.7	3.9	3.5	2.7	1.8	1.6	35.9	47.2	24.2	131	67
Independence	37 13	95 41	794	1872	1896	25	1.6	2.0	2.2	3.7	4.6	4.9	4.2	3.0	3.7	2.7	1.8	2.3	36.7	55.0	26.6	150	72
Missouri.																							
Oregon	40 02	95 09	1,100	1855	1896	41	1.6	1.8	2.0	3.3	4.7	4.7	4.3	4.3	3.1	2.6	1.7	1.6	35.8	49.4	22.2	138	62
Miami	39 18	93 15	640	1847	1896	49	1.7	1.7	2.4	3.0	4.2	5.0	4.2	3.6	3.4	2.8	2.1	2.0	36.1	58.3	15.6	161	43
St. Louis	38 37	90 12	481	1836	1896	60	2.2	2.7	3.4	3.7	4.7	5.0	3.8	3.5	3.1	2.8	3.1	2.8	40.8	68.8	22.6	169	55
Northern Texas, Oklahoma, and Indian Territory.																							
Fort Elliott	35 30	100 21	2,650	1879	1896	11	0.6	0.5	0.6	2.6	4.4	3.2	2.3	3.3	1.8	2.5	0.6	0.7	23.1	35.9	15.5	160	67
Silver Falls (Mount Blanco)	33 35	101 06	3,800	1886	1896	7	0.8	1.0	0.4	2.1	1.5	2.2	2.2	2.2	1.6	1.8	0.8	0.6	16.4	19.8	10.5	121	64
Fort Sill	34 40	98 23	1,200	1870	1896	24	1.2	1.2	1.5	2.7	4.4	3.7	2.9	3.2	2.8	2.7	1.5	1.9	29.7	48.5	17.1	163	58
Fort Gibson	35 50	95 20	510	1836	1890	29	2.1	2.2	2.5	4.1	4.5	3.9	2.7	2.8	2.7	3.4	2.9	2.1	35.9	55.8	18.8	155	52

THE DRIEST YEAR.

The percentages given in columns 7, 8, and 9 show that the ratio between the mean fall and the fall of the driest year is more constant than that which subsists between the mean fall and the fall of the wettest year. The tendency, however, is toward a diminished ratio as dry regions are approached. Note also the close agreement between the ratios at Dodge City, Kans., and North Platte, Nebr. It is a significant fact that for a period of three consecutive years the precipitation at these places was but 70 per cent of the average.

The statistics given in columns 10, 11, 12, and 13 are merely amplifications of the subject-matter of the preceding paragraphs, and will be understood without further explanation.

That years of precipitation above the mean are less frequent than years with precipitation below the mean can easily be seen by an inspection of the data in column 14.

The foregoing may be summarized as follows: (1) Extremes of precipitation bear a rather definite relation to the general mean, the ratio being less the greater the mean and vice versa. Thus in a region of moderate rainfall, say 45 inches per annum, the probability is that in the year of maximum fall the amount will not be greater than about 140 per cent of the mean and not less than about 65 per cent in the year of least rain. The importance of this principle lies in the fact that once the mean fall is established the extremes may be roughly determined by calculation; (2) there may be from three to six and even a greater number of consecutive years with precipitation above or below the general mean, and (3) this condition obtains alike in all parts of the United States; (4) as a general rule, years with precipitation above the mean are less frequent than years below the mean, and the overplus is a little greater than the deficiency.

The annual variation of rainfall in the middle Mississippi Valley from 1858 to 1896 is given in the table of progressive averages, page 20. The record begins with a period of abundant rainfall in the early sixties, followed by a period of rather even distribution until the drought of 1870; then follows a period of eleven years, 1875–1885, with abundant rain, since which time, with the possible exception of 1892, there has been a general deficiency. These figures would seem to indicate a return to a period of greater rainfall.

TABLE V.—MONTHLY STATEMENT AND ANNUAL AVERAGES OF PRECIPITATION, ANNUAL EXTREMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record. From—	Record. To—	Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual. Mean.	Annual. Extremes. Highest.	Annual. Extremes. Lowest.	Ratio.	
GULF STATES AND TEXAS.	° ′	° ′	Feet.				In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.		
Shreveport	32 30	93 40	249	1871	1896	25	4.7	4.2	4.6	5.2	4.2	3.7	3.4	2.1	3.7	3.2	4.7	4.5	48.2	66.5	32.1	138	67
Montgomery	32 23	86 18	219	1870	1896	24	5.4	5.4	6.4	4.8	4.0	4.7	4.6	4.0	2.9	2.3	3.4	4.6	52.5	69.8	39.7	133	76
Mobile	30 41	88 02	69	1870	1896	26	5.1	4.8	7.6	4.6	4.3	5.9	6.7	6.8	5.0	3.4	3.9	4.5	62.6	90.9	42.6	145	68
New Orleans	29 58	90 04	52	1870	1896	26	5.1	4.4	5.3	5.2	4.8	6.7	6.4	6.0	4.6	3.3	4.1	4.4	60.3	85.6	38.7	142	64
Corsicana	32 04	96 27	445	1874	1896	17	3.1	2.7	2.8	4.3	5.4	3.3	2.4	1.9	2.6	2.5	3.6	2.9	37.5	53.9	28.1	144	75
Galveston	29 18	94 47	44	1871	1896	26	3.6	3.0	2.9	2.8	3.7	4.9	3.1	5.3	6.0	4.2	4.3	3.9	47.7	67.0	23.7	140	50
Austin	30 17	97 44	650	1856	1896	30	2.2	2.4	2.5	3.0	4.2	2.7	1.8	2.7	4.2	2.7	2.7	2.3	33.4	51.9	18.4	155	55
Rio Grande City *a*	26 27	98 47	230	1849	1896	35	1.1	0.9	0.9	1.2	2.5	2.5	1.4	2.6	3.4	1.9	0.9	1.0	20.3	32.1	9.4	158	46
Fort Davis	30 38	103 56	4,928	1855	1891	20	0.5	0.4	0.4	0.6	1.0	1.7	3.3	3.8	3.0	1.4	0.5	0.4	18.1	26.4	8.6	146	48
Fort Bliss and El Paso	31 47	106 30	3,796	1850	1896	33	0.4	0.5	0.3	0.1	0.3	0.5	1.6	1.9	1.6	0.8	0.5	0.4	8.9	21.9	2.8	246	31
Lower Mississippi Valley.																							
Nashville	36 09	86 49	533	1839	1896	32	5.0	5.0	5.2	4.7	3.9	4.3	4.3	3.6	4.1	2.7	3.9	3.5	50.2	67.3	33.6	134	67
Memphis	35 09	90 03	330	1871	1896	26	5.5	5.2	5.9	5.4	4.4	4.6	3.4	3.5	3.1	2.7	4.8	4.1	52.6	73.4	35.0	140	67
Vicksburg	32 23	90 50	350	1840	1896	42	5.3	4.9	5.5	5.3	4.4	3.9	4.5	3.4	3.3	2.6	4.7	4.9	52.7	84.3	37.1	160	70
SOUTHERN ATLANTIC STATES AND FLORIDA.																							
Wilmington	34 14	77 57	52	1871	1896	26	3.8	3.3	3.9	2.9	4.2	5.7	7.1	7.3	6.3	3.8	2.4	3.0	53.7	83.7	40.4	156	75
Lenoir	36 00	81 28	1,186	1871	1896	25	4.2	4.3	3.9	3.5	4.8	4.1	5.1	5.7	4.6	3.3	3.3	3.6	50.4	65.6	41.5	130	82
Charleston	32 47	79 56	15	1738	1896	89	3.0	2.9	3.5	2.4	3.6	4.8	6.6	7.2	5.7	3.3	2.4	3.1	49.1	78.4	23.7	160	48
Kirkwood	34 17	80 33	232	1866	1891	32	3.3	3.2	3.9	3.1	3.6	3.9	5.2	5.3	3.9	2.5	2.5	3.5	43.9	54.6	30.1	124	69
Augusta	33 28	81 54	183	1870	1896	27	4.5	4.0	5.1	3.4	3.4	4.6	5.4	5.0	3.7	2.5	3.0	3.4	48.0	57.1	39.3	119	81
Fort Brook	28 00	82 28	20	1840	1896	24	2.5	2.8	3.0	1.9	2.9	7.6	9.8	9.5	6.2	2.4	2.0	2.3	53.1	89.9	36.0	169	68
Jacksonville	30 20	81 39	43	1870	1896	27	3.1	3.0	3.6	2.7	3.8	6.1	6.2	6.7	8.2	5.2	2.7	2.8	54.1	82.1	40.2	152	74
Key West	24 33	81 49	10	1833	1896	49	2.1	1.6	1.6	1.2	2.9	4.5	3.8	5.0	6.6	5.0	2.0	1.9	38.2	71.1	20.5	186	54
APPALACHIAN REGION AND TENNESSEE.																							
Knoxville	35 56	83 58	980	1870	1896	26	5.3	5.3	5.4	4.9	4.0	4.2	4.4	4.0	2.7	2.7	3.8	3.9	50.6	73.8	37.4	146	74
Chattanooga	35 04	85 15	783	1879	1896	18	6.4	5.6	5.8	4.5	4.1	4.7	4.1	4.1	3.7	2.6	4.0	4.3	53.9	68.1	37.2	126	69
Charlotte	35 13	80 51	808	1878	1896	18	4.9	4.4	4.5	3.4	4.1	4.5	5.6	5.1	3.5	3.6	3.0	4.0	50.6	68.4	34.8	135	69
Murphy	35 05	84 02	1,580	1872	1896	16	6.2	6.3	6.0	5.0	3.2	5.4	6.5	5.3	3.5	3.1	4.5	5.2	60.2	79.8	45.6	133	76

a Combined with Fort Ringgold.

GULF STATES AND TEXAS.

The States bordering on the Gulf, Texas alone excepted, have an abundant rainfall at all seasons of the year. The precipitation of the eastern third of Texas is also amply sufficient for the needs of successful agriculture, but there is a large extent of territory stretching from the one hundred and first meridian to the western borders of the State, the rainfall of which is precarious and generally insufficient for the growth and maturity of crops. The distribution of rain in western Texas, as at El Paso, is similar to that of New Mexico, viz, a maximum in July and August, but the total rainfall is so small that it is immaterial when it comes.

The rains of northern Texas, including the Panhandle, are distributed throughout the year in accordance with the Plains system hereinbefore described. The rainfall on the immediate coast of Texas is subject to tremendous variations, especially during September and October. Thirty inches have been recorded in a single month, and again merely a trace has fallen. Under these conditions it will require a great many years to determine the true average fall of the different months. The diminution in the fall of coast stations, referred to on page 329, is perhaps without a parallel in the rainfall records of the United States. It may or may not be a significant fact that the provinces of India which suffered drought in 1895 and 1896 are in about the same latitude as Texas, but here the analogy ends; the rainfall of India in 1893–94 was abundant, whereas there was a general deficiency in corresponding latitudes in the United States.

Little can be said of the rainfall of the Gulf States that will add to the information contained in Table V. There is a fringe of coast line extending from the neighborhood of the mouth of the Mississippi to the middle of the Florida Peninsula that has an annual fall of 60 inches and over. The decrease inland and northward, however, is rapid, the registers of Vicksburg and Montgomery, the latter less than 150 miles from the coast, showing a diminution in fall of about 8 inches per annum.

The rainfall of winter and spring is largely due to the passage of atmospheric disturbances having their origin on the plains of Texas. The rainfall of summer is more or less independent of the movement of cyclonic storms and appears to be determined largely by local conditions of heat and moisture.

LOWER MISSISSIPPI VALLEY.

For all practical purposes, the rainfall system of the Lower Mississippi Valley may be classed with Gulf types, the chief point of difference between the two being the absence of the heavy midsummer rains of the coast region. The distribution throughout the year is quite uniform, and there is generally an abundance of rain for all purposes. The months of least rain are September and October, a period when much rain is not desirable for obvious reasons.

THE SOUTH ATLANTIC STATES AND FLORIDA.

This is also a region of abundant rainfall whose distinguishing characteristic is a period of heavy rains in July and August which, in lower latitudes, extends into September. A portion of the increased fall of these months is due to the occasional visitation of this region by West India hurricanes; but the chief cause seems to be related in some manner to the ocean. The oceanic influence, or whatever it may be, is manifested on the Atlantic Coast from Norfolk to Key West, and from that point westward, following the trend of the Gulf Coast beyond the limits of the United States. The profiles of stations 150 miles inland show little, if any, evidence of a midsummer maximum, but it is plainly observed at all coast stations.

The rainfall of the South Atlantic States is fairly uniform throughout the year, thus furnishing an abundance of water power in the various rivers that drain its watersheds.

SOUTHERN APPALACHIAN AND TENNESSEE.

The rainfall system of the southern portion of the Appalachian Range and adjacent portions of North Carolina and Tennessee is characterized by heavy midsummer and winter precipitation, with intervening periods of lighter rains. There is sufficient rain in the crop-growing season, on the average, for all needs. Many important rivers have their source in the mountain regions of Tennessee and North Carolina, some flowing to the Atlantic, some direct to the Gulf, and the water of others ultimately reaches the Gulf via the Mississippi.

The rainfall on the southeastern slopes of the Appalachian Range in North Carolina is probably the heaviest east of the Sierra Nevada Range.

TABLE V.—MONTHLY AND ANNUAL AVERAGES, OF PRECIPITATION, ANNUAL EXTREMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record. From—	Record. To—	Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual. Mean.	Annual. Extremes. Highest.	Annual. Extremes. Lowest.	Ratio.	
LAKE REGION.	° ′	° ′	Feet.				In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.		
Duluth	46 47	92 06	702	1870	1896	26	1.1	1.1	1.6	2.5	3.7	4.5	3.6	3.3	3.7	2.6	1.7	1.3	30.7	45.3	20.0	148	65
Marquette	46 34	87 24	734	1857	1896	33	2.1	1.9	1.9	2.3	2.9	3.4	2.9	2.9	3.6	3.1	2.8	2.4	32.3	42.9	22.3	133	69
Grand Haven	43 05	86 13	620	1871	1896	25	2.5	2.1	2.3	2.6	3.4	3.8	2.8	2.7	3.6	3.2	3.0	2.6	34.6	47.9	24.1	138	70
Lansing	42 44	84 26	841	1864	1896	33	1.8	2.0	2.3	2.4	3.4	4.0	3.1	2.7	2.9	2.5	2.4	2.1	31.6	48.5	22.8	153	72
Detroit	42 20	83 03	597	1836	1896	46	2.0	1.9	2.5	2.6	3.1	3.8	3.6	2.6	3.0	2.6	2.6	2.2	32.5	47.7	21.1	147	65
Cleveland	41 30	81 27	643	1855	1896	41	2.5	2.6	2.7	2.7	3.5	3.9	3.4	3.1	3.6	2.8	3.1	2.7	36.6	53.6	26.0	146	71
OHIO VALLEY.																							
Pittsburg	40 32	80 02	847	1836	1896	54	2.6	2.5	2.8	3.0	3.5	3.6	4.0	3.4	2.9	2.8	2.6	2.9	36.6	50.7	25.8	139	70
Marietta	39 28	81 26	580	1817	1896	69	3.1	3.1	3.2	3.3	3.9	4.1	4.4	3.9	3.1	3.1	3.1	3.4	41.7	61.9	17.8	148	43
Cincinnati	39 06	84 30	580	1835	1896	62	3.3	3.3	3.5	3.3	4.0	4.4	3.9	3.8	3.0	2.8	3.3	3.5	42.1	65.3	25.3	155	60
North Lewisburg	40 12	83 32	1,030	1872	1896	25	3.6	3.5	3.2	3.1	3.9	4.0	4.4	3.3	3.2	2.2	3.3	2.8	40.5	49.5	23.3	122	58
Indianapolis	39 46	86 10	753	1870	1896	27	2.9	3.4	3.6	3.6	4.0	4.5	4.2	3.3	3.1	2.8	3.8	3.0	42.2	57.5	25.1	136	59
Louisville	38 15	85 45	530	1841	1896	54	3.7	4.0	4.4	4.2	4.1	4.7	4.1	3.8	3.0	2.9	3.9	4.4	47.2	67.0	30.9	142	65
Cairo	37 00	89 10	377	1871	1896	25	3.7	3.9	3.8	3.8	4.1	4.4	3.4	2.8	2.8	2.7	4.2	3.2	42.6	61.5	26.6	144	62
MIDDLE STATES.																							
New Brunswick	40 30	74 27	48	1854	1896	43	3.8	3.6	3.8	3.7	3.9	3.9	4.7	4.9	3.8	3.4	3.7	3.5	46.7	61.2	33.2	131	71
Philadelphia	39 57	75 09	117	1825	1896	72	3.2	3.1	3.4	3.4	3.8	3.8	4.0	4.3	3.5	3.2	3.3	3.3	42.3	61.2	29.5	145	70
New York City	40 42	74 02	159	1836	1896	61	3.4	3.4	3.7	3.4	4.0	3.8	4.0	4.7	3.4	3.6	3.7	3.6	44.7	65.5	27.6	147	62
Ithaca	42 27	76 30	417	1828	1896	36	2.0	1.9	2.3	2.2	3.4	3.7	3.5	3.0	3.0	2.9	2.6	2.2	32.7	46.3	16.5	142	50
Plattsburg Barracks	44 41	73 26	186	1840	1896	35	1.7	1.5	2.0	1.8	2.6	3.0	3.4	3.3	2.9	2.8	2.4	2.0	29.5	43.9	19.0	149	64
Cumberland	39 39	78 45	700	1871	1896	24	2.1	2.6	2.9	2.5	3.4	3.8	3.4	3.2	2.8	2.3	2.2	2.1	33.3	52.5	22.5	158	68
Washington	38 54	77 03	115	1856	1896	41	3.4	3.1	3.9	3.4	4.1	3.9	4.5	4.0	3.5	3.3	2.7	3.1	42.9	61.3	30.7	143	72
Lynchburg	37 25	79 09	658	1871	1896	26	3.8	3.6	3.8	3.3	4.0	3.5	4.1	3.9	3.9	3.2	3.1	2.9	43.1	60.5	30.6	140	71
Birds Nest	37 25	75 52	40	1869	1896	27	3.8	4.0	5.0	3.7	4.0	3.2	4.7	4.6	3.7	3.8	3.0	3.6	47.1	71.2	33.4	151	71

LAKE REGION.

The Lake region is the great highway of atmospheric disturbances that enter the borders of the United States from the west or northwest or form on the plains east of the Rocky Mountains and in the Gulf region, and advance toward the St. Lawrence Valley.

The annual precipitation is between 30 and 35 inches, being slightly heavier on the east and south than on the north and west sides of the lakes. The distribution throughout the year is much similar to that of the Plains, the maximum occurring in the crop-growing season. There is a secondary maximum in September almost equal in magnitude to the primary one in June.

OHIO VALLEY.

The precipitation of the Ohio Valley differs from that of the Lake region principally in quantity and evenness of distribution. The precipitation of winter is considerably heavier and often in the form of rain, whereas that of the Lake region, especially the upper lakes, is generally in the form of light snow.

MIDDLE STATES.

The precipitation of this region is uniformly distributed throughout the year, and there is sufficient, on the average, for the needs of commerce and agriculture. Its geographic position is favorable to moderate precipitation at all seasons, being almost in the direct course of atmospheric disturbances, whether advancing from the southwest or by way of the Lake region.

TABLE V.—MONTHLY AND ANNUAL AVERAGES, OF PRECIPITATION, ANNUAL EXTEMES, ETC.—Continued.

Stations.	Latitude.	Longitude.	Elevation.	Record. From—	Record. To—	Whole years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual. Mean.	Annual. Extremes. Highest.	Annual. Extremes. Lowest.	Ratio.	
NEW ENGLAND STATES.	° ′	° ′	Feet.				In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.		
New Haven	41 18	72 56	45	1804	1896	45	3.8	4.0	3.8	3.3	3.9	3.1	4.5	4.6	3.8	3.8	3.8	3.4	45.8	59.9	33.9	131	74
Springfield	42 08	72 35	120	1848	1896	47	3.5	3.5	3.5	3.2	4.2	3.8	4.5	4.5	3.4	4.2	3.8	3.5	45.6	58.0	30.8	127	68
Hartford	41 25	72 40	60	1870	1896	27	4.3	4.0	4.2	3.0	3.6	3.0	4.1	4.6	3.2	3.9	3.8	3.6	45.3	59.0	35.5	130	78
New Bedford	41 39	70 56	100	1814	1896	83	3.7	3.6	4.0	3.6	3.8	3.0	3.1	3.9	3.3	3.7	4.0	3.8	43.5	61.2	30.8	141	71
Gardiner	44 14	69 48	76	1837	1896	53	3.6	3.5	3.9	3.4	3.8	3.2	3.2	3.6	3.2	4.1	4.0	3.8	43.3	55.4	30.2	128	70
Strafford	43 52	72 25	50	1873	1896	24	3.4	2.9	3.3	2.5	3.3	3.5	4.1	3.7	3.4	3.1	3.4	3.2	39.8	51.3	28.9	129	73
Concord	43 12	71 33	252	1853	1896	42	3.1	2.8	3.1	2.8	3.3	3.1	3.7	3.9	3.4	4.1	3.5	3.0	39.8	54.4	27.6	137	69
Lunenburg	44 28	71 41	850	1848	1891	44	3.0	2.8	3.3	2.6	3.6	3.5	3.9	3.8	3.4	3.5	3.2	2.9	39.6	60.8	29.8	154	75
Burlington	44 28	73 12	346	1828	1896	53	1.9	1.5	1.8	1.9	3.1	3.2	4.0	3.6	3.5	3.3	2.6	1.9	32.7	49.4	21.0	151	64
Boston	42 21	71 04	18	1818	1896	79	3.8	3.5	4.1	3.8	3.7	3.2	3.6	4.3	3.4	3.8	4.3	3.9	45.4	67.6	27.2	149	60
Providence	41 49	71 24	11	1832	1896	65	4.1	3.8	4.1	3.7	3.8	3.3	3.3	4.2	3.2	3.8	4.2	3.9	45.4	63.5	30.6	140	68

NEW ENGLAND.

Physical features.—The surface of New England is broken and irregular, a mountain system of considerable extent traversing the States of Vermont, New Hampshire, and Maine, with a southerly extension of the Green Mountains of Vermont into western Massachusetts. Isolated peaks reach an altitude of 3,500 feet in western Massachusetts; 4,300 feet in Vermont; 6,300 feet in New Hampshire, and 5,300 feet in Maine. The general surface of the range in western Massachusetts is 1,200 to 1,600 feet above sea level; in Vermont, 1,500 feet; in New Hampshire, 2,000 feet, and in Maine from 1,500 to 2,000 feet.

While the mountain system of New England does not greatly modify the rainfall conditions, it plays an important part in the water supply of the towns and cities that cluster along the larger rivers. Virgin forest covers in great part the mountain slopes over a considerable area, thus conserving to a certain extent the rains of summer and the snows of winter. Numerous lakes throughout Maine and New Hampshire serve as natural reservoirs for the storage of flood waters, and tend to maintain a steady flow of water in the rivers below.

The manufacturing industries of New England are largely dependent upon the water power furnished by her rivers. The question of water supply, while possibly of no great moment at present, may assume a serious phase in the future.

The rainfall of New England is above the average of the whole country in amount, and the distribution throughout the year is quite uniform. The amount of rain that falls and its distribution throughout the year are, in a great measure, the result of geographic position with respect to the great storm paths of the North American continent. Storms that pass over the Great Lakes and up the St. Lawrence Valley bring warmer weather and rain over New England, but the heaviest rains come with atmospheric disturbances which originate in Texas or the South Atlantic Coast. Should the center of the storm pass over or slightly to the south of New England, heavy snow and strong westerly winds generally prevail throughout the northern and western quadrants of the storm area.

The average annual fall varies from about 46 inches in southern Connecticut to less than 33 inches at Burlington, Vt.

Previously published statistics have given an annual average of 50 inches and over at several places in Connecticut and Massachusetts. In a majority of such cases the period of observation was far too short to afford a reliable mean.

The fall of rain and snow over New England is rather uniform, notwithstanding the diversity of surface relief. Beginning on the shore of Long Island Sound, where the fall is greatest, the diminution northward to Strafford, Vt., a distance of about 170 miles, is but 0.03 inch per mile; thence northwestward to Burlington, crossing the Green Mountains, the decrease is much more rapid, being 0.12 inch per mile. The fall west of the Green and Hoosac mountains is generally from 2 to 6 inches per annum less than at points in the Connecticut Valley in the same latitude.

In the upper Connecticut Valley the fall averages about 40 inches, the increased snowfall of winter compensating for the deficit in summer rains as compared with the coastal region. The rainfall of the White Mountain region is somewhat greater than that of less elevated adjacent territory. The rainfall of Maine decreases from the coast inland, though in what proportion it is not possible to state with accuracy. The most northerly point in that State at which continuous observations of rainfall have been made is Hancock Barracks, near the present town of Houlton, Aroostook County. The average fall at this point for the period 1837–1844 was 37.9 inches, a decrease from the coast of about 7 inches, or 0.06 inch per mile.

The coast line in the vicinity of Eastport has an annual fall of about 45 inches. Unfortunately a change in the position of the Eastport gauge has seriously vitiated the record at that point.

RAINFALL OF MOUNTAIN SLOPES.

The rainfall statistics of New England are, with very few exceptions, those of the valley rather than the mountain slope. The precipitation on the mountains is greater on the average than in the adjacent valleys, although, at times, especially in the colder season, the fall of rain or

snow may be greater in the valley than on the mountain sides. The rainfall on the summit of Mount Washington for the months of June, July, August, and September aggregates 39.7 inches, a tenth of an inch greater than the annual fall at the nearest base station, Lunenburg, Vt. The yearly fall on Mount Washington is 83.5 inches (seventeen years' observations). There is, however, some uncertainty attached to these figures owing to the well-known difficulties experienced in measuring precipitation on mountain tops.

The rainfall on Mount Killington, Vermont, 4,300 feet, was measured during July and August of 1889, 1890, and 1891. The averages of the three years for the months above named were 5.27 and 5.47 inches, respectively. This would give an annual fall of 54.7 inches, assuming that the relation between the fall of July and August and that of the year on Mount Killington is the same as exists at adjacent low level stations.

The average number of rainy days for one or more stations in each of the foregoing named geographic districts is given in the table below.

TABLE VII.—AVERAGE NUMBER OF RAINY DAYS.

[0.01 inch or over.]

Stations.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.	Average amount per day.
WASHINGTON.														
Olympia	19.3	17.4	17.5	15.9	11.9	10.2	4.8	4.5	9.1	15.6	16.8	21.1	163.8	0.33
Walla Walla	14.2	10.9	11.7	10.1	8.7	8.3	3.1	2.2	5.8	9.8	8.8	14.5	107.7	0.14
OREGON.														
Portland	19.5	16.4	17.4	14.8	12.5	11.0	4.1	3.5	8.5	13.7	16.4	19.6	156.3	0.30
CALIFORNIA.														
Coast.														
San Francisco	11.4	10.6	10.3	7.4	4.2	2.0	0.6	0.3	1.6	3.8	6.4	11.2	69.4	0.34
San Diego	5.9	7.0	6.9	4.5	3.2	1.1	0.3	0.7	0.8	2.2	3.0	6.0	42.0	0.23
Great Valley.														
Sacramento	9.1	8.3	9.4	6.5	3.8	1.2	0.1	0.0	1.5	3.3	5.0	10.4	64.7	0.31
IDAHO.														
Boise City	11.4	10.0	9.1	7.4	7.5	6.2	2.0	1.6	2.6	7.8	6.6	12.7	87.3	0.16
UTAH.														
Salt Lake City	10.9	9.5	9.8	9.7	7.3	4.4	3.3	5.1	3.9	6.6	7.0	10.8	87.6	0.21
NEVADA.														
Winnemucca	8.7	8.8	8.4	7.4	7.2	4.6	1.9	1.3	2.8	4.2	5.2	10.1	73.4	0.12
ARIZONA.														
Prescott	4.5	5.0	5.3	4.5	2.4	1.3	9.5	11.8	4.5	3.5	3.0	5.9	62.2	0.27
NEW MEXICO.														
Santa Fe	5.9	6.8	6.1	5.6	6.2	5.9	13.9	12.4	6.7	4.5	4.7	6.2	83.9	0.17
Fort Stanton	3.9	4.7	4.9	3.1	4.5	7.0	11.8	11.7	8.3	3.3	4.4	4.5	82.5	0.22
MONTANA.														
Havre	9.6	7.7	6.2	6.5	8.4	10.0	7.6	6.0	6.0	6.5	5.8	6.9	87.6	0.16
Helena	11.0	8.0	7.7	8.2	10.4	12.5	7.3	4.7	6.5	5.9	6.6	7.9	97.6	0.14
WYOMING.														
Cheyenne	5.3	5.4	6.7	9.0	11.5	8.4	9.8	10.0	4.9	5.2	5.0	5.0	85.4	0.15
COLORADO.														
Foothills.														
Denver	5.0	5.5	7.0	8.6	11.1	7.5	9.6	9.5	5.2	4.8	4.9	5.2	84.0	0.17
THE PLAINS AND MISSISSIPPI VALLEY.														
North Dakota.														
Bismarck	8.1	8.3	8.2	9.1	10.7	12.4	10.5	7.9	6.0	6.7	7.5	8.4	103.9	0.18
Northern Minnesota.														
St. Vincent	8.5	8.1	6.9	8.1	7.7	10.7	10.2	8.1	8.2	8.0	7.8	7.4	99.3	0.20

TABLE VII.—AVERAGE NUMBER OF RAINY DAYS—Continued.

Stations.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.	Average amount per day.
THE PLAINS AND MISSISSIPPI VALLEY—cont'd.														
Southern Minnesota and Southern Wisconsin.														
St. Paul	9.4	8.6	9.9	10.0	11.6	12.0	10.0	9.8	9.4	8.4	8.2	10.2	117.2	0.24
La Crosse	11.4	8.9	9.1	10.4	12.1	11.7	10.2	9.0	10.0	9.0	8.5	9.9	120.6	0.25
Milwaukee	12.9	10.3	12.1	11.0	12.1	11.6	10.0	8.6	9.6	9.8	10.5	12.5	131.4	0.24
Nebraska.														
North Platte	5.1	4.8	6.1	8.6	10.4	10.2	9.6	8.3	4.7	5.0	3.6	5.0	81.2	0.22
Omaha	6.9	6.8	7.9	10.4	11.8	11.1	9.8	8.4	7.8	6.5	4.5	7.1	98.9	0.32
Iowa.														
Davenport	10.1	8.8	9.8	9.9	12.1	12.5	8.4	8.6	9.0	8.3	8.5	10.2	116.9	0.28
Illinois.														
Chicago	11.8	10.8	12.0	11.4	11.8	11.4	9.2	9.0	9.0	10.1	11.0	12.1	131.1	0.26
Kansas.														
Dodge City	4.6	5.8	5.3	6.4	10.4	9.0	8.7	7.2	4.2	5.1	3.4	4.3	75.2	0.26
Missouri.														
St. Louis	9.1	9.5	10.8	10.3	11.8	11.4	9.6	7.6	7.0	7.3	9.1	9.9	113.3	0.36
Oklahoma														
Fort Sill	6.2	5.7	5.9	6.7	9.8	8.6	6.2	7.3	7.1	5.7	5.5	5.6	85.5	0.35
GULF STATES AND TEXAS.														
Shreveport	11.6	10.1	10.4	9.8	8.6	9.8	9.5	7.3	7.1	6.1	8.9	9.3	109.0	0.44
Montgomery	12.0	11.0	11.0	8.8	9.9	12.1	11.8	11.9	7.7	5.8	8.2	10.8	120.9	0.43
Galveston	11.2	10.1	9.1	6.7	6.6	8.2	9.2	10.2	10.0	6.8	9.0	10.5	107.8	0.44
El Paso	3.4	3.3	2.7	1.0	2.1	3.0	7.9	8.5	5.9	3.8	3.2	2.3	48.3	0.18
San Antonio	9.7	8.4	7.5	7.5	7.5	6.9	5.3	7.2	8.1	6.1	7.2	7.3	89.3	0.34
LOWER MISSISSIPPI VALLEY.														
Nashville	12.9	11.3	12.1	11.1	10.8	11.8	11.0	9.1	8.0	6.9	9.9	11.3	127.5	0.39
Memphis	11.8	11.5	12.2	10.6	10.4	10.4	10.4	8.3	7.5	6.7	10.1	10.8	120.4	0.44
Vicksburg	12.2	11.0	10.5	9.2	8.5	10.3	11.2	9.8	7.2	6.0	9.4	10.3	115.8	0.45
SOUTHERN ATLANTIC STATES AND FLORIDA.														
Charleston	10.6	10.1	10.0	7.7	9.1	10.9	12.1	13.3	10.6	7.4	7.7	8.9	118.5	0.41
Atlanta	13.6	11.6	11.7	9.9	10.0	11.2	11.6	14.0	8.5	6.9	9.2	10.7	128.7	0.39
Jacksonville	9.5	9.1	8.2	6.7	9.8	13.5	15.0	15.0	14.1	9.0	8.0	7.2	124.9	0.43
Key West	8.1	6.8	4.9	4.5	8.5	11.8	12.6	14.6	16.4	12.4	8.0	7.2	117.7	0.32
Tampa	8.4	7.4	7.2	6.0	8.3	17.5	18.0	19.8	19.3	9.0	6.3	6.8	131.8	0.40
APPALACHIAN REGION AND TENNESSEE.														
Knoxville	14.0	12.0	12.7	11.6	12.4	12.6	12.1	11.9	7.8	8.0	9.4	12.1	136.4	0.37
LAKE REGION.														
Duluth	11.1	10.4	9.7	10.2	12.5	14.4	12.0	12.2	12.2	10.2	11.0	11.6	137.0	0.22
Marquette	16.7	13.4	13.5	11.1	11.8	11.9	11.8	11.8	12.7	14.4	15.4	15.8	160.9	0.20
Sault Ste. Marie	19.6	14.7	14.1	11.7	14.3	11.1	12.4	12.7	13.9	14.4	18.9	19.6	177.4	0.17
Grand Haven	19.8	14.1	13.2	11.0	12.1	9.7	8.2	8.7	10.4	11.6	14.6	16.6	150.7	0.22
Detroit	13.7	13.1	13.1	10.4	12.8	11.0	9.3	9.4	9.4	10.4	12.7	15.1	141.5	0.23
Cleveland	16.7	14.1	14.9	12.5	13.5	12.2	10.8	9.6	11.1	12.8	14.8	16.6	155.6	0.24
OHIO VALLEY.														
Pittsburg	16.3	14.5	15.2	13.0	13.2	12.0	13.0	9.1	9.8	10.4	13.1	15.0	156.2	0.23
Cincinnati	14.1	11.9	12.8	12.4	12.2	11.9	10.0	10.0	8.7	9.2	11.2	12.5	137.7	0.31
Indianapolis	12.9	11.5	13.4	12.6	13.2	12.6	10.0	9.8	8.3	9.6	11.8	13.2	139.5	0.30
Louisville	13.0	11.3	12.5	11.9	11.4	11.7	10.0	8.7	7.8	8.3	10.6	11.6	129.7	0.36
Cairo	12.3	10.3	11.3	10.5	11.2	11.8	9.0	8.0	7.0	7.6	9.8	10.9	119.9	0.36
MIDDLE STATES.														
Albany	14.0	12.3	13.7	11.5	12.8	12.5	12.6	10.8	10.1	10.6	12.4	13.0	146.2	0.27
Philadelphia	12.2	11.1	12.5	11.0	11.5	9.4	11.2	10.6	9.2	9.2	10.2	10.1	128.4	0.33
Washington	12.1	10.9	12.2	11.2	12.2	10.5	11.1	11.3	8.6	8.8	10.1	10.4	129.2	0.33
Lynchburg	11.8	10.7	11.2	11.2	12.6	12.2	11.4	11.9	8.8	7.5	9.0	9.6	128.2	0.34
NEW ENGLAND.														
Boston	12.8	11.1	12.8	11.4	11.2	10.3	11.0	10.4	9.6	10.0	11.1	11.7	133.0	0.34

EXCESSIVE PRECIPITATION.

Vast sums of money are expended each year in the construction of sewers and drainage systems. In designing main sewers for large areas a thorough knowledge of the vicissitudes of rainfall of the region, particularly as regards the intensity and duration of the heavier falls, is essential.

A number of quite heavy rainstorms occurred during the past year; in many cases the capacity of the sewers was not equal to the task of discharging the accumulated storm waters. Failure of sewers to carry off flood waters is not a new problem in municipal engineering, although it has cost, in damage to property and resulting litigation, many thousands of dollars.

Attention was first directed to the importance of statistics of excessive rainfall in 1888. At that time automatically recording gauges were in use at but a single station of the Signal Service (now Weather Bureau). At the remaining stations it was not possible to determine the rate of fall except by observing the time of beginning and ending of rain and assuming that the rate was uniform during the continuance of the storm—an assumption known to be far from the truth.

In 1888 rains of 2.50 inches or more in twenty-four consecutive hours and of 1 inch or more in an hour were classed as "excessive," and have since been regularly published in the Monthly Weather Review under that title. From the nature of the observations it was rarely known, in the case of rains of an inch or more in an hour, whether the rain was continuous during the entire hour or whether the bulk of it fell during a fraction of the time; and thus, while the publication of the data did not wholly fail of results, it fell far short of the requirements of the case.

Self-registering rain gauges were sent to five stations in the spring of 1889, and the publication in the Monthly Weather Review of a table of maximum rainfalls in five and ten minutes and one hour was immediately begun.

Excessive rains naturally fall into two broad classes: (*a*) Rains of great intensity and short duration, and (*b*) light intensity and long duration. Of these two classes, those of the first are by far the most damaging and destructive. In extreme cases 95 per cent of the downpour may quickly find its way into the natural or artificial drainage channels. A rainfall of one-half inch in linear depth represents about 11,300 imperial gallons per acre. Assuming that in extreme cases only 5 per cent is absorbed, it is easily seen how great a quantity of water must flow into the drainage basin.

GEOGRAPHICAL DISTRIBUTION OF EXCESSIVE RAINS.

On the Pacific Coast, particularly the coasts of Washington and Oregon, where the annual rainfall is greater than in any other portion of the United States, excessive rains of class *a* are not prevalent. The rain of this region falls principally between September and May, the colder part of the year, when convectional overturning of the atmosphere is least active.

The most favorable conditions for the sudden condensation of a vast quantity of water vapor are conceived to be (1) strong vertical temperature gradients; (2) high surface temperatures and humidity—in fact, the general conditions of humidity and instability of the atmosphere necessary to the formation of thunderstorms and tornadoes.

The most violent rains of class *a*, and, at the same time, those of which least is known, are the so-called cloud-bursts of the mountainous and arid regions of the West. These storms are not confined to any particular State or region, but may occur in mountainous localities throughout the entire territory bounded by the British possessions on the north, the Mexican border on the south, the foothills of the Rockies on the east, and the Sierras on the west. In the true cloud-burst the rain seems to pour down, rather than fall in drops. It often happens that the downpour occurs over narrow basins or on mountain slopes whose outlets are canyons or gorges leading to a valley or plain below. In such cases almost the entire amount of water quickly finds its way into the drainage channel, and as a result, a wave of water rushes down the outlet with great velocity and in sufficient volume to destroy everything in its path. Such a flood wave almost swept away the town of Eureka, Nev., in 1874, and caused the loss of fifteen lives. A far greater disaster occurred in Bear Creek canyon, Colorado, in July, 1896, when thirty lives were lost and property valued at more than $100,000 was destroyed.

The amount of rain that falls in one of these torrential downpours has never been ascertained. A cloud-burst passed over the edge of the little town of Palmetto, Nev., in August, 1890. A rain gauge that was not exposed to the full intensity of the storm caught 8.80 inches of water in an hour. In August, 1891, two storms passed over Campo, Cal., within a few minutes of each other. The second storm was a veritable cloud burst. The observer succeeded in measuring the rainfall of the first shower and a portion of the second. Eleven and a half inches were measured within an hour. The rain gauge and support were carried away by the torrent of water, and the full record of the storm was not obtained.

The great majority of excessive rains (class *a*) in the United States occur east of the one hundred and fifth meridian, and principally in the summer months. They are most frequent in connection with summer afternoon thunderstorms, but occasionally occur in the track of West India hurricanes. They are more abundant on the Gulf and South Atlantic coasts than at inland points.

In Table VIII there are given the essential facts concerning each excessive rain, of which permanent record was made at Washington, D. C., 1881–1896; Savannah, Ga., 1889–1896, and St. Louis, Mo., 1889–1896. Columns 1 and 2 give the total duration of the storm; column 3 the total depth of rainfall; columns 4 and 5 the beginning and ending, respectively, of the excessive rate; column 6 the amount of rain that fell before the excessive rate began. In the succeeding columns the accumulated amounts of rainfall are given for each successive five minutes of the storm's duration up to fifty minutes, and in ten and twenty minute periods thereafter.

It is possible to determine, from the details thus presented, whether or not rain falls at a uniform rate and how long such rate continues, and also the approximate time when the flow in the sewers shall be at a maximum for any given rate.

MAXIMUM INTENSITY OF RAINFALL.

It is generally assumed that in heavy showers the intensity (i) varies inversely as the duration (t), and a number of formulæ have been suggested to express the relation between (i) and (t). From an examination of the data in Table I it would seem to be extremely doubtful whether a relation sufficiently definite to admit of expression by mathematical formulæ exists. The general principle that rains of the highest intensity exhaust themselves quickly holds good, but the fact remains that the total duration of the storm bears no simple relation either to the rate or linear depth of rainfall.

The periods of very great intensity are of short duration and may occur at any time during the continuance of the storm. There may be two and even three periods of great intensity in a single storm, separated by intervals of light rain. The table below shows the time of occurrence of the maximum intensity, counting from the beginning of the storm.

Percentage of cases in which the maximum intensity of rainfall occurred within five, ten, and sixty minutes from the beginning of the storm.

	Washington.	Savannah.	St. Louis.
	Per cent.	*Per cent.*	*Per cent.*
Maximum intensity occurred within—			
5 minutes from beginning of storm	17	10	32
10 minutes from beginning of storm	21	20	30
15 minutes from beginning of storm	20	21	8
20 minutes from beginning of storm	5	13	5
25 minutes from beginning of storm	8	7	2
30 minutes from beginning of storm	9	10	2
35 minutes from beginning of storm	5	5	2
40 minutes from beginning of storm	5	1	8
45 minutes from beginning of storm	2	4	5
50 minutes from beginning of storm	1	5	5
60 minutes from beginning of storm	6	3	2

If we select from the whole number of individual storms those shorter periods during which a very high rate was maintained, and plot the rates per hour as abscissæ in a system of rectilinear coordinates, we obtain, after connecting the points so plotted, a curve which may be called the curve of probable maximum intensity. Thus we find that at Washington during the last sixteen years the highest rate per hour was as follows:

	Inches.	Date.
For any—		
5 consecutive minutes	7.50	Sept. 3, 1882
10 consecutive minutes	5.10	Sept. 16, 1888
15 consecutive minutes	4.50	June 27, 1881
20 consecutive minutes	3.90	Do.
25 consecutive minutes	3.60	Do.
30 consecutive minutes	3.15	Do.
40 consecutive minutes	2.75	June 10, 1876
50 consecutive minutes	2.30	Do.
60 consecutive minutes	1.98	Do.
120 consecutive minutes	1.23	July 26, 1886

Plate III shows the curves of probable maximum intensity for Washington (*a*) and Savannah (*b*) constructed in the manner indicated. The full-line curve on Plate III, constructed from the combined records of excessive rainfall in the cities of Boston, Providence, New York, Philadelphia, and Washington, representing observations for an aggregate of about seventy years, has been reproduced from Ex. Doc. No. 445, Fifty-first Congress, first session—Report upon the Sewerage of the District of Columbia, Washington, D. C., 1890.

The conclusion to be drawn from the similarity of the curves is that, in general, the highest intensity of any individual storm will not greatly exceed the limits marked by the separate curves.

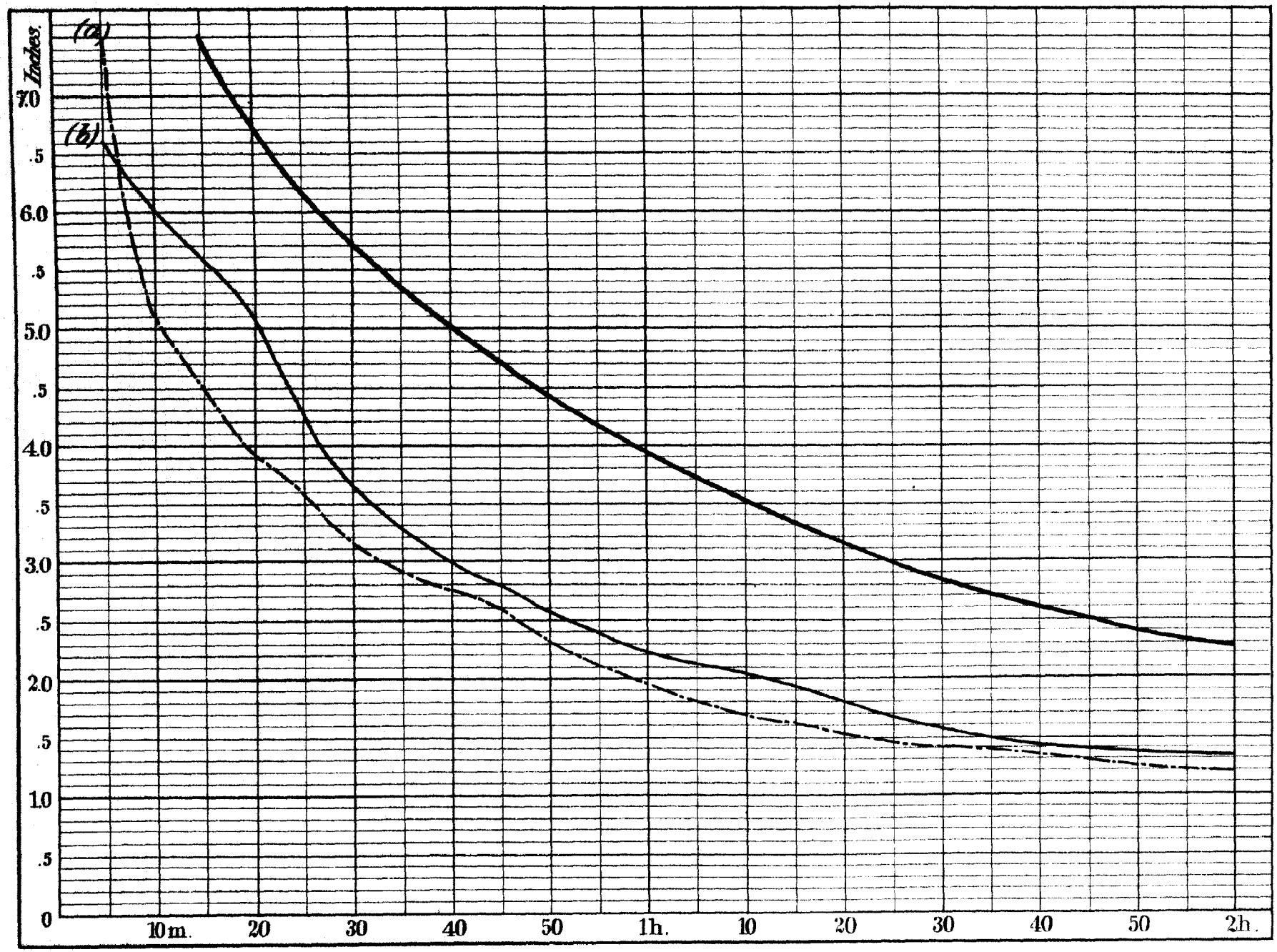
TABLE VIII.—DETAILS OF EXCESSIVE RAINFALL, WASHINGTON, SAVANNAH, AND ST. LOUIS.

Station and date.	Total duration.		Total amount of precipitation (inches).	Excessive rate.		Amount before excessive rate began (inches).	Depths of precipitation (in inches) during periods of time as indicated.													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
WASHINGTON, D. C.																				
1881.																				
June 27	1.25 p.m.			1.30 p.m.	1.40 p.m.	0.03	0.01	0.10	0.23	0.24	0.25									
27		3.45 p.m.	0.72	3.25 p.m.	3.35 p.m.	.07	.05	.30	.46	.46	.47									
27	8.10 p.m.	8.45 p.m.	1.63	8.10 p.m.	8.40 p.m.	.00	.21	.51	1.02	1.31	1.50	1.57	1.61							
Sept. 11	4.30 p.m.	8.30 p.m.	1.05	4.35 p.m.	5.00 p.m.	.01	.01	.10	.35	.51	.70	.84	.88	0.89						
1882.																				
Mar. 27-28	9.35 p.m.	7.25 a.m.	.61	9.40 p.m.	9.45 p.m.	.01	.01	.43	.44											
May 27	8.05 p.m.	10.45 p.m.	.88	8.10 p.m.	8.25 p.m.	.01	.05	.45	.70	.81	.82									
July 4	9.30 a.m.	1.45 p.m.	1.82	11.20 a.m. 12.20 p.m.	11.30 a.m. 12.45 p.m.	.40 .28	.02 .01	.05 .02	.07 .05	.10 .09	.19 .23	.28 .40	.34 .53	.37 .65	0.44 .71	0.49 .80	0.56 .87	0.91	0.94	0.96
Sept. 3	8.15 p.m.	About midnight.	1.36	8.20 p.m.	8.45 p.m.	.04	.04	.14	.75	.85	1.10	1.15	1.17	1.18	1.19	1.19	1.20	1.25	1.32	1.34
20	9.35 p.m.	1.21 a.m.	1.16	9.35 p.m.	10.00 p.m.	.00	.08	.20	.55	.78	.85	.90	.91	.95	.96	.97	.98	1.00		
1883.																				
May 14	9.20 p.m.	10.00 p.m.	.47	9.20 p.m.	9.25 p.m.	.00	.39	.45												
June 3	12.50 p.m.			2.20 p.m.	2.40 p.m.	.05	.04	.15	.25	.44	.51	.54	.55	.56						
3		4.45 p.m.	1.15	4.10 p.m.	4.20 p.m.	.08	.01	.04	.05	.06	.08	.46	.55	.57	.59					
10	8.25 p.m.	11.00 p.m.	1.24	8.30 p.m.	9.00 p.m.	.04	.04	.31	.37	.43	.50	.74	.80	.81	.82	.83	.85	.95	1.15	1.20
13	5.10 p.m.	7.00 p.m.	.75	5.15 p.m.	5.25 p.m.	.01	.01	.10	.61	.68	.72	.74								
21	8.10 p.m.	9.00 p.m.	.65	8.15 p.m.	8.30 p.m.	.02	.02	.20	.40	.55	.60	.64								
July 12	2.35 p.m.	10.00 p.m.	.59	2.40 p.m.	3.05 p.m.	.10	.01	.06	.20	.25	.35	.45	.52	.54	.56					
17	1.00 p.m.	*a* 4.00 p.m.	.83	1.00 p.m.	1.20 p.m.	.00	.23	.37	.60	.78	.80	.81								
24	4.40 p.m.	6.00 p.m.	.77	4.40 p.m.	5.05 p.m.	.01	.01	.15	.21	.39	.64	.70	.74	.75						
Aug. 23	4.10 p.m.	5.00 p.m.	.97	4.10 p.m.	4.35 p.m.	.09	.20	.40	.64	.80	.90	.93	.95							
1884.																				
Jan. 8	3.00 a.m.	10.00 p.m.	1.83	5.05 p.m.	5.08 p.m.	.01	.01	.07	.48	.50	.51	.54	.55	.56	.57	.60	.65	.69	.80	.88
June 10-11	10.00 p.m. 10th.	3.15 a.m. 11th.	1.69	Midnight.	12.25 a.m.	.96	.02	.03	.07	.16	.19	.24	.27	.32	.36	.39	.43	.59	.70	.94
13	12.35 p.m.	5.15 p.m.	1.60	12.40 p.m.	1.15 p.m.	.02	.02	.16	.21	.41	.50	.63	.76	.96	.97	1.03	1.10	1.13	1.25	1.42
July 1	4.30 p.m.	9.15 p.m.	2.03	6.45 p.m. 7.35 p.m.	7.00 p.m. 8.05 p.m.	.04 .05	.01	.32	.58	.63	.63	.63	.63	.66	.68	.68	.88	1.52	1.64	1.97
11	2.05 p.m.	3.00 p.m.	.64	2.15 p.m.	2.35 p.m.	.02	.08	.28	.48	.58	.60	.61	.62	.63						
Nov. 23	4.35 p.m.	10.10 p.m.	1.27	6.55 p.m.	7.50 p.m.	.16	.09	.12	.15	.24	.35	.44	.53	.65	.75	.89	.96	.98	.99	1.06

a About.

Curves of Probable Maximum Intensity of Rainfall.

Plate III.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

TABLE VIII.—DETAILS OF EXCESSIVE RAINFALL, WASHINGTON, SAVANNAH, AND ST. LOUIS—Continued.

Station and date.	Total duration. From—	Total duration. To—	Total amount of precipitation (inches).	Excessive rate. Began—	Excessive rate. Ended—	Amount before excessive rate began (inches).	Depths of precipitation (in inches) during periods of time as indicated. 5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
WASHINGTON, D.C.—cont'd.																				
1885.																				
May 27	Noon.	10.05 p. m.	1.09	12.30 p. m.	12.40 p. m.	0.16	0.02	0.04	0.08	0.10	0.13	0.15	0.25	0.33	0.35	0.42	0.50	0.60	0.64	0.68
June 28	7.45 a. m.	10.40 a. m.	.76	8.55 a. m.	9.10 a. m.	.19	.05	.17	.30	.42	.48	.52	.53	.57						
Aug. 2	5.35 p. m.	6.20 p. m.	.62	5.40 p. m.	6.00 p. m.	.02	.02	.20	.39	.56	.60	.61	.62							
2	8.20 p. m.	9.30 p. m.	.34	8.30 p. m.	8.35 p. m.	.05	01	.03	.18	.21	.23	.26	.27	.27	.28	.31	.33	.34		
23	1.35 p. m.	2.15 p. m.	.69	1.35 p. m.	2.00 p. m.	.00	.10	.26	.44	.60	.66	.67	.68							
25	5.25 p. m.	9.15 p. m.	.94	5.25 p. m.	5.40 p. m.	.00	.10	.45	.55	.58	.59	.60	.60	.71	.74	.75	.85	.90	.91	.94
Oct. 29	11.00 a. m.	1.00 a. m. 30th.	2.52	8.25 p. m.	8.45 p. m.	.46	.01	.01	.05	.07	.09	.16	.30	.45	.60	.69	.80	1.05	1.27	1.45
1886.																				
Mar. 31	11.00 a. m.	7.15 p. m.	1.48	1.00 p. m.	1.15 p. m.	.22	.10	.28	.37	.44	.51	.55	.57	.60	.61	.62	.65	.68	.70	.72
May 22-23	11.30 p. m. 22d.	1.30 a. m. 23d.	.85	11.40 p. m. 22d.	12.05 a. m. 23d.	.06	.03	.06	.16	.20	.27	.57	.66	.70	.72	.76	.82	.84	.85	
25	12.50 a. m.	3.30 a. m.	.80	2.20 a. m.	2.35 a. m.	.27	.01	.02	.03	.04	.17	.33	.36	.44	.47	.48	.54	.56		
June 22-23	5.45 a. m. 22d.	1.05 a. m. 23d.	3.47	7.30 p. m.	8.00 p. m.	2.49	.03	.07	.08	.09	.10	.11	.30	.38	.42	.50	.65	.77	.82	.85
24	1.25 p. m.	4.00 p. m.	1.45	2.25 p. m.	3.25 p. m.	.30	.03	.05	.08	.12	.16	.20	.37	.46	.56	.69	.90	1.10	1.34	
July 13	8.35 a. m.	12.30 p. m.	.88	11.00 a. m.	11.15 a. m.	.24	.03	.12	.25	.26	.28	.34	.38	.43	.47	.49	.53			
15-16	7.10 p. m.	12.10 a. m.	1.05	a 7.20 p. m.	7.35 p. m.	.06	.04	.11	.49	.60	.78	.82	.85	.85	.85	.85	.90	1.20	1.38	1.46
21	1.45 a. m.			4.00 a. m.	4.15 a. m.	.22	.01	.01	.10	.30	.42	.51	.55	.58						
21		6.45 a. m.	1.27	6.25 a. m.	6.40 a. m.	.20	.19	.37	.44	.45										
26	6.30 p. m.	9.45 p. m.	2.80	7.20 p. m.	8.50 p. m.	.07	.03	.13	.15	.37	.67	.93	1.03	1.10	1.14	1.18	1.53	1.93	2.30	2.47
Aug. 1	12.45 p. m.	2.30 p. m.	.73	1.15 p. m.	1.30 p. m.	.25	.05	.08	.13	.20	.24	.30	.50	.60	.67	.69				
30	6.40 p. m.	9.00 p. m.	.98	6.40 p. m. 7.35 p. m. 8.20 p. m.	6.50 p. m. 7.50 p. m. 8.35 p. m.	.00 T. T.	.10 .10 .01	.20 .21 .12	.28 .33 .16	.30 .35 .25	.32									
1887.																				
July 4-5	11.00 p. m. 4th.	8.00 a. m. 5th.	.96	4.15 a. m.	4.20 a. m.	.35	.01	.16	.21	.25	.26	.29	.32	.35	.40	.45	.48			
Aug. 11	6.35 p. m.	7.15 p. m.	.82	6.35 p. m.	7.00 p. m.	.00	.17	.40	.52	.72	.77	.78	.80	.81						
Sept. 12	11.10 p. m.	11.30 p. m.	.67	11.10 p. m.	11.20 p. m.	.00	.30	.62	.66											
1888.																				
June 14	4.52 p. m.	5.15 p. m.	.40	4.52 p. m.	5.05 p. m.	.00	.15	.32	.39	.40										
23	3.30 p. m.	7.00 p. m.	.70	3.30 p. m.	3.45 p. m.	.00	.20	.35	.55	.59	.64	.66	.67	.68						
July 9	8.45 p. m.	10.30 p. m.	1.17	9.35 p. m.	10.00 p. m.	.10	.03	.06	.07	.08	.33	.68	.78	.98	1.11	1.12	1.14			
10	1.25 a. m.	Noon.	1.67	2.05 a. m.	2.20 a. m.	.09	.02	.03	.05	.05	.06	.07	.08	.09	.23	.33	.45	.58	.61	.62
Aug. 21	1.30 p. m.	3.55 p. m.	.76	1.30 p. m.	1.45 p. m.	.00	.30	.40	.60	.62	.63									
Sept. 16	3.00 p. m.	6.30 p. m.	1.45	3.00 p. m.	3.20 p. m.	.00	.15	.55	1.00	1.15	1.23	1.24	1.24	1.25	1.26	1.26	1.28	1.31	1.34	1.35
1889.																				
May 19-20	7.30 a. m. 19th.	7.00 a. m. 20th.	1.37	5.05 p. m. 19th.	5.22 p. m. 19th.	.10	.02	.05	.19	.28	.40	.46	.48	.50						
20	11.45 a. m.	6.15 p. m.	1.15	12.23 p. m.	12.50 p. m.	.10	.05	.25	.33	.40	.50	.60	.68	.73	.75	.76	.78	.84	.90	
31	D. N. b	b D. N.	b 1.85	2.30 p. m.	2.35 p. m.	(?)	.20	.26	.32	.34	.35	.35	.35	.35	.36	.37	.39	.42	.51	.77
June 10	1.15 p. m.	1.40 p. m.	.35	1.18 p. m.	1.28 p. m.	T.	.10	.28	.35											
July 1	10.45 a. m.	7.00 p. m.	1.47	11.48 a. m.	12.05 p. m.	.45	.10	.20	.21	.22	.23	.25	.45	.69	.85	.98	1.02	1.06	1.11	1.17
15	6.25 a. m.	7.00 a. m.	.50	6.50 a. m.	6.58 a. m.	.05	.25	.41	.42	.43	.44	.45								
30-31	8.30 p. m. 30th.	11.45 a. m. 31st.	c 1.85	9.03 p. m.	9.33 p. m. 30th.	.20	.06	.10	.22	.30	.36	.42	.55	.70	.75	.75	.77	.80	.82	.85
Aug. 6	7.15 p. m.	11.00 p. m.	1.06	9.50 p. m.	10.08 p. m.	.15	.05	.10	.15	.25	.55	.85	.93	.97	1.00	1.02	1.05			
9	4.40 p. m.	5.45 p. m.	.60	4.58 p. m.	5.18 p. m.	.05	.10	.35	.48	.55										
1890.																				
May 20	6.55 a. m.	9.20 a. m.	.60	6.55 a. m.	7.06 a. m.	.00	.25	.43	.48	.50	.51	.52	.53	.54	.55	.55	.57	.60		
June 12	6.08 p. m.	8.17 p. m.	.52	6.08 p. m.	6.19 p. m.	.00	.20	.35	.38	.40	.41	.42	.43	.44	.45					
22	9.18 p. m.	9.50 p. m.	.52	9.23 p. m.	9.43 p. m.	.05	.05	.25	.50	.50	.51	.52								
July 2	6.30 p. m.	8.35 p. m.	.88	7.24 p. m.	7.36 p. m.	.05	.30	.57	.64	.67	.70	.72	.74	.75	.77	.79				
Aug. 1	4.43 p. m.	7.20 p. m.	1.35	5.50 p. m. 6.25 p. m.	6.07 p. m. 6.51 p. m.	.05 .10	.05 .10	.07 .20	.08 .25	.10 .27	.15 .35	.22 .55	.35 .63	.50 .65	.56	.58	.65			
14	6.40 p. m.	11.20 p. m.	1.00	10.43 p. m.	10.58 p. m.	.30	.30	.57	.66	.70										
20	9.12 p. m.	D. N.	.82	9.12 p. m.	9.25 p. m.	.00	.25	.55	.60	.65										
Sept. 11	5.12 p. m.	7.05 p. m.	.90	5.25 p. m.	6.15 p. m.	.20	.17	.22	.30	.32	.33	.34	.35	.65	.80	.90				
1891.																				
June 18	4.50 p. m.	10.30 p. m.	1.20	5.32 p. m.	6.00 p. m.	.05	.07	.25	.40	.52	.62	.70	.75	.80	.85					
21	5.10 p. m.	7.40 p. m.	.95	5.22 p. m. 6.00 p. m.	5.28 p. m. 6.15 p. m.	.05 .25	.05	.14	.22	.26	.31	.33	.34	.35	.43	.60	.95			
July 15	1.53 p. m.	2.20 p. m.	.65	2.07 p. m.	2.20 p. m.	.05	.01	.03	.10	.35	.65									
23	5.34 p. m.	6.05 p. m.	.40	5.34 p. m.	5.47 p. m.	.00	.20	.35	.40											
Aug. 24	9.43 p. m.	D. N.	.80	9.43 p. m.	10.08 p. m.	.00	.15	.22	.27	.35	.55	.61	.63	.65						
Sept. 5	7.03 p. m.	8.45 p. m.	.75	7.03 p. m. 7.27 p. m.	7.08 p. m. 7.42 p. m.	.00 .05	.25	.29	.31	.33	.35	.47	.55	.66	.68	.69	.71	.75		
Oct. 19	9.25 a. m.	11.40 a. m.	.86	11.03 a. m.	11.25 a. m.	.25	.02	.05	.08	.13	.20	.35	.60	.70						

a Another short period of excessive rainfall occurred between 8.10 p. m. and 8.20 p. m., when 0.28 inch fell.

b Rain occurred between 9 p. m. and 8 a. m. June 1; beginning and ending not known; amount between 8 p. m. 31st and 8 a. m. June 1, 3.11 inches, instrument not recording properly, and gauge overflowed at 7.25 p. m.

c By stick, 2.31 inches. (Gauge overflowed at 4 a. m. 31st.

TABLE VIII.—DETAILS OF EXCESSIVE RAINFALL, WASHINGTON, SAVANNAH, AND ST. LOUIS—Continued.

Station and date.	Total duration.		Total amount of precipitation (inches).	Excessive rate.		Amount before excessive rate began (inches).	Depths of precipitation (in inches) during periods of time as indicated.													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
WASHINGTON, D. C.—cont'd.																				
1892.																				
June 23	3.32 p.m.	4.08 p.m.	0.36	3.50 p.m.	4.03 p.m.	0.05	0.01	0.02	0.03	0.08	0.13	0.34	0.36							
27	4.40 p.m.	D. N.	.86	5.03 p.m.	5.11 p.m.	.05	.18	.36	.38	.39	.42	.45	.48	0.50	0.54	0.57	0.70			
July 14	6.10 a.m.	7.35 a.m.	.74	6.15 a.m. 6.41 a.m.	6.20 a.m. 7.10 a.m.	.05	.05	.14	.18	.21	.23	.25	.32	.50	.58	.61	.70			
19	5.05 p.m.	7.40 p.m.	.94	6.37 p.m.	7.00 p.m.	.20	.03	.08	.14	.24	.46	.64	.71	.75	.78	.83	.86			
27	8.20 p.m.	D. N.	.84	8.20 p.m.	8.42 p.m.	.00	.15	.40	.53	.63	.66									
1893.																				
June 26	3.30 a.m.	4.30 a.m.	.52	3.30 a.m.	3.43 a.m.	.00	.15	.32	.37	.39	.41	.43	.45	.48	.50					
Sept. 15	5.15 p.m.	6.00 p.m.	.45	5.42 p.m.	5.53 p.m.	.05	.15	.30	.38	.40										
1894.																				
May 5	8.32 p.m.	9.50 p.m.	.46	9.00 p.m.	9.10 p.m.	.09	.01	.02	.07	.09	.21	.40	.44	.46						
6	D. N.	D. N.	.62	9.50 p.m.	10.15 p.m.	T.	.10	.20	.37	.44	.48	.51	.52	.53	.54	.55	.57	0.59	0.61	
18	3.25 p.m.	5.32 p.m.	.46	3.35 p.m.	3.50 p.m.	T.	.15	.28	.38	.43	.44									
18	8.20 p.m.	D. N.	.46	9.00 p.m.	9.05 p.m.	.14	.06	.11	.12	.12	.12	.12	.13	.15	.27	.29	.31	.34		
Dec. 11-12	11.30 p.m. 11th.	2.15 p.m. 12th.	1.16	10.50 a.m.	11.00 a.m. 12th.	.04	.02	.02	.02	.04	.26	.29	.31	.32	.33	.34	.35			
1895.																				
June 13	3.13 p.m.	5.30 p.m.	.72	3.35 p.m.	3.47 p.m.	.06	.03	.06	.14	.34	.44	.50	.62	.68	.68	.68	.69	.70	.71	0.72
29	7.05 p.m.	9.10 p.m.	.90	7.24 p.m.	7.40 p.m.	T.	.24	.66	.80	.83	.85	.86	.87	.88	.88	.89	.90			
30	3.20 p.m.	8.25 p.m.	.86	5.30 p.m.	5.45 p.m.	.22	.07	.28	.36	.37	.37	.45	.54	.56	.58	.60	.63			
30	9.20 p.m.	1.15 a.m., July 1.	1.47	10.15 p.m.	10.45 p.m.	.14	.08	.12	.13	.13	.14	.34	.54	.64	.99	1.24	1.36	1.41		
Dec. 26	8.10 p.m.	9.25 p.m.	.30	8.15 p.m.	8.25 p.m.	T.	.18	.25	.25	.25	.26	.27	.27	.28	.29					
1896.																				
Aug. 13	5.20 p.m.	8.24 p.m.	1.73	6.20 p.m.	7.00 p.m.	.05	.14	.33	.75	.95	1.15	1.34	1.45	1.52	1.57					
SAVANNAH, GA.																				
1889.																				
June 27	7.55 a.m.	10.15 a.m.	1.35	9.10 a.m.	10.00 a.m.	.05	.10	.17	.48	.81	.87	.93	1.01	1.13	1.21	1.29				
28	3.25 a.m.	9.37 a.m.	1.60	6.33 a.m.	7.12 a.m.	.45	.05	.15	.21	.26	.45	.60	.70	.80	.86	.90				
July 6	4.15 p.m.	7.00 p.m.	.95	4.20 p.m.	4.46 p.m.	.05	.30	.39	.47	.56	.65	.69	.71	.74	.75					
Aug. 6	3.25 p.m.	8.30 p.m.	2.60	4.08 p.m.	4.52 p.m.	.10	.03	.06	.09	.40	.75	1.10	1.48	1.72	1.92	2.03	2.22	2.28	2.40	
8	11.55 a.m.	1.20 p.m.	1.20	11.55 a.m.	12.15 p.m.	.00	.40	.80	.95	1.05	1.08									
Sept. 1	8.18 a.m.	9.30 a.m.	1.10	8.42 a.m.	9.00 a.m.	.15	.06	.12	.13	.14	.20	.60	.85	1.08	1.10					
6	12.20 p.m.	1.30 p.m.	1.10	12.40 p.m.	1.00 p.m.	.15	.07	.11	.25	.55	.80	1.00	1.05							
1890.																				
May 3	9.00 a.m.	10.00 a.m.	.60	9.35 a.m.	9.50 a.m.	.05	.18	.30	.55											
June 11	3.30 p.m.	4.05 p.m.	.90	3.38 p.m.	3.58 p.m.	.10	.05	.20	.50	.70	.80	.85	.90							
20	1.52 p.m.	3.40 p.m.	.75	1.57 p.m.	2.15 p.m.	.05	.05	.22	.34	.45	.62	.66	.68	.70						
July 1	2.15 p.m.	2.55 p.m.	.70	2.15 p.m.	2.27 p.m.	.00	.15	.50	.63	.66	.68	.70								
2	6.25 a.m.	8.20 a.m.	.60	6.35 a.m.	6.52 a.m.	.10	.05	.09	.20	.30	.45	.51								
8	7.10 p.m.	8.20 p.m.	1.10	7.35 p.m.	7.53 p.m.	.10	.15	.50	.85	.96	.98	.99	1.00							
27	1.00 p.m.	4.00 p.m.	1.50	1.03 p.m. 2.10 p.m.	1.20 p.m. 2.23 p.m.	.05 .25	.05 .02	.35 .06	.57 .17	.65 .39	.68 .44	.70 .47	.75 .49	.77 .53	.79 .55	.80 .56	.83 .59			
Sept. 1	11.40 p.m. 1st.			11.55 p.m.	12.10 a.m.	.20	a 05	.12	.17	.25	.40	.50	.53	.56	.64	.69	.75	.85	1.06	1.15
2		2.00 p.m.	4.25	10.25 a.m.	10.57 a.m.	2.22	b 02	.05	.08	.16	.25	.30	.40	.60	.85	.92	.98	1.10	1.27	1.50
3	5.25 p.m.	6.25 p.m.	.45	6.13 p.m.	6.21 p.m.	.20	.03	.07	.10	.12	.15	.20	.40							
11	2.20 p.m.	3.20 p.m.	.55	2.20 p.m.	2.35 p.m.	.00	.20	.37	.43	.48	.50	.52	.53	.54	.55					
13	1.00 p.m.	1.30 p.m.	.75	1.00 p.m.	1.25 p.m.	.00	.10	.25	.36	.60	.75									
15	7.40 p.m.	11.50 p.m.	1.10	8.28 p.m.	8.45 p.m.	.10	.03	.10	.25	.40	.49	.54	.53	.61	.64	.66	.71	.77	.82	.85
22	12.45 p.m.	1.40 p.m.	.40	12.45 p.m.	12.55 p.m.	.00	.12	.35												
24-25	8.40 p.m. 24th.	5.10 a.m. 25th.	4.56	10.17 p.m.	c11.06 p.m.	.20	.10	.13	.18	.25	.45	.65	.80	1.02	1.15	1.17	1.40	1.75		
Oct. 22	6.00 a.m.	2.30 p.m	2.10	10.27 a.m. 11.45 a.m.	10.47 a.m. 11.51 a.m.	.55 .25	.03	.05	.07	.10	.15	.20	.30	.45	.59	.75	.82	.88	.95	1.25
22	9.25 p.m.	11.35 p.m.	1.20	11.03 p.m.	11.25 p.m.	.10	.07	.25	.60	.85	.99	1.00								
Dec. 8	6.50 a.m.	8.30 a.m.	1.25	7.02 a.m.	7.28 a.m.	.05	.20	.32	.55	.80	1.00	1.08	1.12	1.16						
1891.																				
May 27	12.38 p.m.	10.20 p.m.	1.10	7.48 p.m.	8.02 p.m.	.30	.35	.53	.58	.60	.63	.66	.68	.69	.70					
July 18	1.50 p.m.	4.40 p.m.	2.09	1.58 p.m.	2.30 p.m.	.05	.40	.85	1.25	1.50	1.70	1.82	1.85							
25	1.00 p.m.	1.30 p.m.	.45	1.07 p.m.	1.15 p.m.	.05	.04	.25	.45											
26	3.10 p.m.	5.50 p.m.	1.60	3.10 p.m.	4.07 p.m.	.00	.10	.20	.27	.30	.45	.68	.85	1.02	1.15	1.23	1.47	1.55		
28	1.00 p.m.	2.20 p.m.	1.25	1.22 p.m.	2.00 p.m.	.10	.12	.20	.39	.47	.70	.95	1.13	1.15						
Aug. 2	1.35 p.m.	2.30 p.m.	.55	1.35 p.m.	1.55 p.m.	.00	.13	.33	.40	.50	.55									
6	2.10 p.m.	3.12 p.m.	.60	2.18 p.m.	2.30 p.m.	.05	.03	.10	.35	.50	.54	.56	.60							
13	6.20 p.m.	9.25 p.m.	1.41	6.58 p.m.	7.26 p.m.	.05	.10	.18	.22	.26	.41	.73	.78	1.02	1.16	1.22	1.30	1.35		
22	8.08 p.m.	D. N.	1.75	8.08 p.m.	8.43 p.m.	.00	.10	.40	.65	.90	1.10	1.18	1.25	1.30	1.33	1.35	1.38			
28	11.40 a.m.	4.35 p.m.	3.15	1.40 p.m. 2.55 p.m.	2.10 p.m. 3.10 p.m.	.50 .15	.02 .02	.04 .03	.07 .04	.14 .05	.18 .07	.25 .42	.40 .62	.65 .87	.90 .93	1.40 .95	1.70 .97	1.78 1.03	1.11	

a Record begins at 11.40 p.m. 1st.
b Record begins at 10.08 a.m. 2d. 0.25 inch fell between 1.40 and 2.20 a.m., when gauge overflowed. 1.02 inches is estimated to have fallen between 2.20 and 7 a.m.
c Gauge overflowed at 11.06 p.m. 24th.

TABLE VIII.—DETAILS OF EXCESSIVE RAINFALL, WASHINGTON, SAVANNAH, AND ST. LOUIS—Continued.

Station and date.	Total duration. From—	Total duration. To—	Total amount of precipitation (inches).	Excessive rate. Began—	Excessive rate. Ended—	Amount before excessive rate began (inches).	5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
SAVANNAH, GA.—continued.																				
1892.																				
July 18	12.10 p. m.	4.50 p. m.	1.83	1.10 p. m.	1.50 p. m.	0.25	0.28	0.50	0.70	0.77	0.80	0.84	1.10	1.30	1.33	1.35	1.40	1.48	1.52	....
Aug. 10	3.11 p. m.	4.45 p. m.	.79	3.18 p. m.	3.35 p. m.	.05	.03	.15	.40	.55	.72	.75	....	....	....	....	....	....	....	....
Sept. 11-12	7.25 p. m. 11th.	10.35 a. m. 12th.	2.52	9.42 a. m.	9.57 a. m. 12th.	1.92	.05	.07	.10	.12	.15	.18	.25	.40	.65	.78	....	....	....	....
19	4.25 p. m.	5.45 p. m.	.57	4.45 p. m.	5.00 p. m.	.05	.15	.35	.45	.47	.48	.49	.50	.51	....	....	....	....	....	....
20	7.05 p. m.	11.00 p. m.	1.77	7.05 p. m.	7.42 p. m.	.00	.07	.15	.25	.40	.55	.70	.82	.89	.95	.97	1.00	1.15	1.32	1.44
1893.																				
June 7	4.10 p. m.	4.55 p. m.	.88	4.20 p. m.	4.40 p. m.	.05	.02	.05	.25	.50	.70	.80	.85	.87	.88	....	....	....	....	....
July 15	3.50 p. m.	7.00 p. m.	1.62	4.00 p. m. 4.35 p. m.	4.22 p. m. 5.13 p. m.	.05 .10	.12	.15	.25	.31	.33	.35	.40	.50	.65	.83	1.19	1.45	....	....
Aug. 3	12.55 p. m.	5.00 p. m.	.76	1.07 p. m.	1.26 p. m.	.05	.10	.35	.55	.67	.70	....	....	....	....	....	....	....	....	....
14	4.07 p. m.	6.25 p. m.	.72	5.35 p. m.	5.47 p. m.	.08	.25	.50	.61	....	....	....	....	....	....	....	....	....	....	....
20	5.45 p. m.	7.40 p. m.	.87	5.53 p. m.	6.08 p. m.	.10	.06	.15	.30	.45	.52	.59	.65	.70	.73	.75	.80	....	....	....
27	10.30 a. m.	6.00 a. m. 28th.	5.61	11.05 p. m.	11.30 p. m.	4.10	.02	.05	.08	.11	.13	.15	.18	.25	.45	.65	.95	....	....	....
Sept. 8-9	3.40 p. m. 8th.	12.10 p. m. 9th.	4.35	8.10 a. m. 9.12 a. m.	8.22 a. m. 9th. 10.25 a. m.	1.30 .30	.07 .05	.09 .22	.15 .47	.25 .70	.31 .87	.40 1.12	.45 1.33	.49 1.36	.57 1.57	.71 1.72	.77 2.07	.89 2.44	1.03 2.52	....
13	7.20 p. m.	11.45 p. m.	1.49	7.52 p. m.	8.37 p. m.	.08	.06	.11	.20	.30	.50	.68	.78	.92	1.00	1.02	1.05	1.11	1.18	1.23
Oct. 3	10.10 a. m.	12.40 p. m.	2.13	10.50 a. m. 11.33 a. m.	11.03 a. m. 12.00 m.	.10 .20	.12	.26	.40	.46	.48	.50	.57	.60	.63	.75	1.35	1.81	2.06	....
Nov. 27	9.30 a. m.	5.00 p. m.	.69	9.58 a. m.	12.08 p. m.	.06	.15	.40	.50	....	....	....	....	....	....	....	....	....	....	....
1894.																				
June 23	12.30 p. m.	2.30 p. m.	.94	12.30 p. m.	12.55 p. m.	.00	.10	.35	.55	.73	.80	.84	.87	.90	....	....	....	....	....	....
July 3	10.25 a. m.	11.00 a. m.	.42	10.25 a. m.	10.40 a. m.	.00	.10	.28	.40	....	....	....	....	....	....	....	....	....	....	....
18	7.22 p. m.	11.35 p. m.	2.42	7.37 p. m.	8.12 p. m.	.05	.30	.70	1.20	1.40	1.55	1.60	1.75	1.80	1.85	1.90	(a)	....	....	....
31	2.45 p. m.	5.20 p. m.	.99	3.07 p. m.	3.32 p. m.	.05	.30	.40	.52	.57	.65	.69	.74	.80	.85	....	....	....	....	....
Aug. 17	6.06 p. m.	11.40 p. m.	2.11	7.07 p. m.	7.50 p. m.	.20	.02	.05	.12	.29	.55	.85	1.15	1.32	1.42	1.47	1.55	....	....	....
1895.																				
Apr. 24	1.05 p. m.	3.40 p. m.	1.27	1.20 p. m. 1.58 p. m.	1.38 p. m. 2.12 p. m.	.05 .20	.10	.19	.26	.34	.39	.46	.49	.56	.66	.89	1.00	1.07	1.12	1.15
May 24	4.35 p. m.	5.20 p. m.	.55	4.42 p. m.	4.55 p. m.	.05	.04	.10	.30	.45	.50	....	....	....	....	....	....	....	....	....
June 13	1.07 p. m.	1.40 p. m.	.94	1.12 p. m.	1.35 p. m.	.05	.05	.20	.47	.67	.84	.94	....	....	....	....	....	....	....	....
16-17	3.45 p. m. 16th.	1.00 a. m. 17th.	3.19	7.52 p. m.	b 8.30 p. m.	.85	.04	.18	.35	.42	.55	.65	.83	1.00	1.12	1.30 (c)	1.43 (c)	1.67	1.80	1.91
24	12.30 p. m.	1.30 p. m.	.85	12.37 p. m.	12.55 p. m.	.05	.03	.15	.40	.50	.70	.77	.80	....	....	....	....	....	....	....
July 7	3.00 p. m.	4.10 p. m.	.55	3.12 p. m.	3.27 p. m.	.05	.23	.30	.40	.45	.47	....	....	....	....	....	....	....	....	....
12	1.23 p. m.	2.20 p. m.	.54	1.47 p. m.	2.07 p. m.	.05	.10	.15	.22	.44	.47	.49	....	....	....	....	....	....	....	....
13	5.04 p. m.	6.04 p. m.	2.28	5.04 p. m. 5.40 p. m.	5.30 p. m. 5.52 p. m.	.00 .05	.30	.70	1.25	1.70	1.80	1.82	1.85	2.01	2.16	2.23	2.28	....	....	....
25-26	8.40 p. m.	About 3.00 a. m. 26th.	2.39	9.54 p. m.	10.28 p. m.	.24	.10	.20	.49	.68	.87	1.11	1.23	1.26	1.27	1.28	1.35	1.66	1.86	....
Aug. 3	2.46 p. m.	....	....	4.54 p. m.	5.48 p. m.	.44	.10	.20	.38	.57	.64	.73	.85	1.15	1.45	1.70	1.87	2.05	....	....
3	....	10.05 p. m.	3.84	6.28 p. m.	6.42 p. m.	.35	.03	.06	.10	.17	.35	.67	.72	.80	.83	.86	.90	....	....	....
4	6.55 a. m.	7.30 a. m.	.53	7.00 a. m.	7.10 a. m.	T.	.20	.45	.47	.48	.50	.53	....	....	....	....	....	....	....	....
17	4.55 p. m.	5.50 p. m.	.36	5.03 p. m.	5.10 p. m.	.05	.01	.12	.30	.34	....	....	....	....	....	....	....	....	....	....
22	11.52 a. m.	1.55 p. m.	1.45	12.07 p. m. 12.57 p. m.	12.30 p. m. 1.13 p. m.	.05 .10	.17	.30	.55	.67	.81	.83	.85	.86	.87	.89	1.15	1.36	1.40	....
22	4.38 p. m.	6.00 p. m.	.85	4.38 p. m.	5.08 p. m.	.00	.22	.30	.42	.68	.80	.81	....	....	....	....	....	....	....	....
1896.																				
Apr. 24	5.30 p. m.	8.45 p. m.	1.30	7.06 p. m.	7.27 p. m.	.20	.05	.10	.13	.15	.20	.45	.67	.80	.87	.93	1.02	1.10	1.25	....
July 7	9.45 a. m.	11.10 a. m.	1.34	9.55 a. m.	10.13 a. m.	.05	.02	.05	.30	.65	.90	1.05	1.10	1.11	1.12	1.13	1.15	1.30	....	....
Aug. 18	5.45 p. m.	10.45 p. m.	2.68	8.33 p. m.	8.56 p. m.	1.46	.25	.50	.70	.95	1.00	....	....	....	....	....	....	....	....	....
26	4.30 a. m.	5.35 a. m.	1.63	4.42 a. m.	5.19 a. m.	.10	.05	.08	.15	.27	.38	.62	.97	1.25	1.45	1.57	1.63	....	....	....
ST. LOUIS, MO.																				
1889.																				
Sept. 4	3.15 p. m.	....	....	3.15 p. m.	3.20 p. m.	.00	.25	....	....	....	....	....	....	....	....	....	....	....	....	....
5	....	1.10 a. m.	1.85	10.10 p. m.	10.35 p. m. 4th.	.55	.15	.38	.48	.55	.71	.74	.76	.78	.80	.85	.95	....	....	....
1890.																				
June 17	5.15 p. m.	6.00 p. m.	.66	5.15 p. m.	5.33 p. m.	.00	.06	.25	.40	.47	.50	.54	.61	.65	....	....	....	....	....	....
1891.																				
June 8	12.03 a. m.	1.25 a. m.	1.25	12.03 a. m.	12.43 a. m.	.00	.18	.38	.45	.53	.62	.73	.80	.85	.89	.93	1.02	1.25	....	....
16	1.58 p. m.	5.20 p. m.	1.10	1.58 p. m. 3.38 p. m.	2.10 p. m. 4.04 p. m.	.00 .05	.10 .20	.25 .32	.30 .39	.32 .45	.35 .55	....	....	....	....	....	....	....	....	....
20	3.15 a. m.	5.45 a. m.	.95	3.29 a. m.	3.39 a. m.	.05	.23	.46	.51	.54	.56	.59	.60	.62	.63	.64	.68	.78	.84	.90
Aug. 11	12.25 p. m.	2.00 p. m.	.85	12.25 p. m.	12.45 p. m.	.00	.17	.50	.70	.76	....	....	....	....	....	....	....	....	....	....
17-18	11.55 p. m. 17th.	5.40 a. m. 18th.	.55	4.22 a. m.	4.30 a. m. 18th.	.15	.05	.30	.40	....	....	....	....	....	....	....	....	....	....	....
1892.																				
July 13	4.30 a. m.	7.55 a. m.	1.38	4.59 a. m.	5.17 a. m.	.05	.35	.57	.62	.67	.69	.70	.71	.72	.73	.74	.75	.97	1.28	....
Aug. 7	2.25 a. m.	d 4.30 a. m.	.94	2.32 a. m.	2.48 a. m.	.05	.40	.51	.70	.77	.79	.80	.85	....	....	....	....	....	....	....

a Gauge ceased to register at 8.27 p. m. b Gauge overflowed. c Partly estimated. d About.

TABLE VIII.—DETAILS OF EXCESSIVE RAINFALL, WASHINGTON, SAVANNAH, AND ST. LOUIS—Continued.

Station and date.	Total duration.		Total amount of precipitation (inches).	Excessive rate.		Amount before excessive rate began (inches).	Depths of precipitation (in inches) during periods of time as indicated.													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
ST. LOUIS, MO.—continued.																				
1893.																				
May 25-26	10.30 p. m. 25th.	2.15 p. m. 26th.	a3.25	10.21 a. m. 26th.	10.40 a. m.	2.05	0.15	0.33	0.42	0.50	0.53	0.55	0.57	0.59	0.60	0.65	0.67	0.71	0.75	....
July 28-29	9.15 p. m. 28th.	1.30 a. m. 29th.	.92	9.39 p. m.	9.59 p. m. 28th.	.05	.05	.20	.45	.57	.68	.80	.85	....	....	....	....	....	....	....
1894.																				
July 28	9.10 p. m.	11.50 p. m.	.92	9.10 p. m.	9.30 p. m.	.00	.11	.33	.50	.60	.64	.65	.66	.68	.71	.71	.72	.76	.84	0.88
Sept. 4	3.48 p. m.	5.55 p. m.	.79	4.55 p. m. 5.25 p. m.	5.00 p. m. 5.35 p. m.	.31 .07	.04	.09	.14	.18	.20	.24	.28	.41	.46	.47	.48	.74	....	....
1895.																				
June 17	5.18 p. m.	9.30 p. m.	.64	5.18 p. m.	5.30 p. m.	.00	.25	.37	.42	.45	.47	.49	.51	.52	....	....	....	....	....	....
July 27	4.30 a. m.	8.30 a. m.	b2.48	5.20 a. m.	5.40 a. m.	T. .00	.06	.15	.19	.21	.33	.45	.62	.77	....	....	....	....	....	....
29	9.38 a. m.	1.10 p. m.	c1.29	9.38 a. m. 11.43 a. m.	10.48 a. m. Noon.	.00 .20	.08 .08	.20 .15	.17	.18	.18	.18	.25	.59	.89	.96	.97	1.02	1.07	1.08
29	6.50 p. m.	10.30 p. m.	1.59	6.50 p. m. 8.00 p. m.	7.10 p. m. 8.15 p. m.	.00 .05	.26 .21	.38 .39	.57 .56	.69 .60	.66	.69	....	....	....	....	....	....	....	....
1896.																				
May 11	12.25 p. m.	1.42 p. m.	.59	12.50 p. m.	1.10 p. m.	.04	.01	.03	.06	.25	.35	.50	.59	....	....	....	....	....	....	....
13	6.28 p. m.	9.40 p. m.	.63	6.35 p. m.	6.40 p. m.	T. .00	.34	.41	.44	.45	.46	.47	.48	.49	.51	.53	.55	.59	.61	.63
18	11.30 p. m.	....	....	11.40 p. m.	11.50 p. m.	.07	.02	.19	.32	.34	....	....	....	....	....	....	....	....	....	....
19	....	6.55 a. m.	1.46	3.10 a. m. 3.40 a. m.	3.15 a. m. 4.00 a. m.	.13 .03	.11	.11	.12	.13	.13	.14	.23	.30	.50	.59	.69	.72	....	....
21	7.05 p. m.	7.35 p. m.	.42	7.05 p. m.	7.10 p. m.	.00	.30	.36	.40	.41	....	....	....	....	....	....	....	....	....	....
27	5.43 p. m.	....	....	6.04 p. m.	7.00 p. m.	.01	.01	.01	.08	.16	.29	.50	.72	.84	.95	1.00	1.23	d1.34	....	....
27	....	10.05 p. m.	2.89	7.23 p. m. 8.08 p. m.	7.35 p. m. 8.18 p. m.	T. .07	.23	.66	.70	.70	.70	.71	.71	.71	.76	.83	1.01	1.16	1.35	1.43
June 7-8	11.12 p. m. 7th.	1.30 a. m. 8th.	.53	11.33 p. m.	11.40 p. m. 7th.	.02	.13	.21	.22	.26	.35	.42	....	....	(e)	....	....	....	....	....
21	2.33 p. m.	3.20 p. m.	.58	2.53 p. m.	3.03 p. m.	T.	.21	.54	.58	....	....	....	....	....	....	....	....	....	....	....
25	8.54 p. m.	Midnight.	.58	9.20 p. m. 9.50 p. m.	9.25 p. m. 10.00 p. m.	T. .13	.10	.15	.18	.20	.21	.23	.34	.45	.48	.50	.51	.53	.57	.58
July 13	2.21 p. m.	2.52 p. m.	.35	2.38 p. m.	2.45 p. m.	.03	.03	.03	.12	.35	....	....	....	....	....	....	....	....	....	....
20	12.40 a. m.	2.00 p. m.	1.66	1.35 a. m.	1.50 a. m.	.29	.01	.03	.19	.15	.21	.22	.27	.43	.59	.72	.78	.94	....	....
21	8.24 a. m.	1.55 p. m.	.91	8.40 a. m.	9.00 a. m.	T.	.22	.40	.52	.66	.72	.76	.76	.78	.80	.82	.85	.88	....	....
22	7.23 p. m.	8.33 p. m.	.36	7.33 p. m.	7.48 p. m.	T.	.16	.24	.36	....	....	....	(f)	....	....	....	....	....	....	....
Aug. 12	1.43 p. m.	7.15 p. m.	.60	3.05 p. m.	3.10 p. m.	.19	.04	.06	.09	.09	.09	.09	.12	.14	.14	.35	....	....	....	....
16	12.18 a. m.	4.15 a. m.	1.20	12.40 a. m. 2.00 a. m.	12.55 a. m. 2.20 a. m.	.08 .12	.06 .02	.09 .09	.18 .23	.34 .31	.38 .42	.40 .53	.57	.59	.59	.62	.67	.69	.73	.78
Sept. 26	6.40 p. m.	8.35 p. m.	.41	6.55 p. m.	7.05 p. m.	.09	.02	.09	.20	.28	.33	.33	.34	....	....	....	....	....	....	....

a Of this amount (3.25), 2.05 fell between 10.30 p. m., 25th, and 7 a. m., 26th; .45 fell between noon, 26th, and 2.15 p. m., 26th.
b At 5.40 a. m. instrument failed to record; 1.71 fell between 5.40 and about 8.30 a. m.
c Of this amount (1.29), 0.20 inch fell between 11 a. m. and 11.43 a. m.
d Fell between 5.43 and 7.05 p. m.
e 0.11 fell between midnight and 1.30 a. m. 8th.
f T. fell after 7.48 p. m.

TABLE IX.—MAXIMUM INTENSITY OF RAINFALL FOR PERIODS OF 5, 10, AND 60 MINUTES AT WEATHER BUREAU STATIONS EQUIPPED WITH SELF-REGISTERING GAUGES, COMPILED FROM ALL AVAILABLE RECORDS.

Stations.	Rate per hour for—			Stations.	Rate per hour for—		
	5 minutes.	10 minutes.	60 minutes.		5 minutes.	10 minutes.	60 minutes.
	Inches.	*Inches.*	*Inches.*		*Inches.*	*Inches.*	*Inches.*
Bismarck	9.00	6.00	2.00	Chicago	6.80	5.92	1.60
St. Paul	8.40	6.00	1.30	Galveston	6.48	5.58	2.55
New Orleans	8.16	4.86	2.18	Omaha	6.00	4.80	1.55
Milwaukee	7.80	4.20	1.25	Dodge City	6.00	4.20	1.34
Kansas City	7.80	6.60	2.40	Norfolk	5.76	5.46	1.55
Washington	7.50	5.10	1.78	Cleveland	5.64	3.66	1.12
Jacksonville	7.44	7.08	2.20	Atlanta	5.46	5.46	1.50
Detroit	7.20	6.00	2.15	Key West	5.40	4.80	2.25
New York City	7.20	4.92	1.60	Philadelphia	5.40	4.02	1.50
Boston	6.72	4.98	1.68	St. Louis	4.80	3.84	2.25
Savannah	6.60	6.00	2.21	Cincinnati	4.56	4.20	1.70
Indianapolis	6.60	3.90	1.60	Denver	3.60	3.30	1.18
Memphis	6.60	4.80	1.86	Duluth	3.60	2.40	1.35

PART VIII.

FLOODS OF THE MISSISSIPPI RIVER.

Blank page retained for pagination

FLOOD REFUGEES UPON A MISSISSIPPI LEVEE.

FLOODS OF THE MISSISSIPPI RIVER.

By PARK MORRILL, Forecast Official.

SECTION I.

THE RIVER AND BASIN.

Introductory—Sources of information—The drainage basin—Ohio Basin—Upper Mississippi Basin—Missouri Basin—Arkansas Basin—Red Basin—Central Valley—Lower Mississippi River.

It is proposed in the present paper to consider briefly the chief characteristics of the Mississippi River, and of the basin that is drained by it and its numerous tributaries. In view of the great importance of this river system to a large part of the inhabitants of the United States, of whom, according to the census of 1890, twenty-seven and a half millions, in round numbers, dwell in its basin, it is thought that such a paper will be of interest and value. This is further assured because of the great loss of property and danger to life sometimes incurred through the floods of the Lower Mississippi, which may be in part avoided by timely prevision. It is proposed to bring together from various sources the chief facts as to the physical characteristics of the catchment basin. To this will succeed data as to its precipitation and drainage under normal conditions, better information with respect to which is now obtainable than has been anywhere brought together in a convenient form. Lastly, the floods of the Lower Mississippi will be considered, and especially that of the present year. The subject naturally separates itself into these divisions, and will be treated in the above order.

SOURCES OF INFORMATION.

1. Work of Delta Survey, River Commissions, and Weather Bureau.—The first thorough and systematic investigation of the regimen of the Mississippi River was made by the Delta Survey, organized by act of Congress in 1850. The final report of the survey and investigations instituted was made in 1861 by Capt. A. A. Humphreys and Lieut. Henry L. Abbot. Their report has remained to the present time the main authority as to the physical features of the river. By an act of Congress, passed in 1871, the Secretary of War was directed to establish gauges at various points on the Mississippi and its principal tributaries, and daily observations of these gauges have been made ever since under the direction of the Engineer Corps. In 1879 the Mississippi River Commission was created, and has accurately surveyed the course of the Mississippi, and determined its slope by precise levels. Additional gauges have been established, so that its daily stage is now recorded at intervals of about 50 miles. The Missouri River Commission was organized in 1884, and has done similar work upon the Missouri. The Weather Bureau began in 1873 to collect the daily readings of river gauges by telegraph, and to publish them for the benefit of river commerce. Besides the presentation of the current stages of rivers, it early inaugurated a system of flood warnings, for which the telegraphic collection of river stages and rainfall gave especial opportunity. In the prosecution of this work many gauges have been established, largely upon the smaller tributaries, which were not embraced in the work of other departments of the

Government. As a result of these various labors there has been accumulated a large quantity of observations and other data relating to the Mississippi and its tributary rivers. Moreover, since the creation of the Weather Bureau in 1870, the precipitation, as well as other meteorological subjects, has been carefully investigated for the whole country, and a knowledge of the precipitation over its basin, as well as of the regimen of the river itself, in order to fully understand the latter, is clearly necessary.

THE DRAINAGE BASIN.

2. *Comparison of the Mississippi with other river systems.*—Through a faulty nomenclature, the Mississippi River is only 2,485 miles in length. In point of fact, the Missouri is the proper prolongation of the main river, the Upper Mississippi being in reality one of its less important tributaries. From the mouth of the Mississippi to the sources of the Missouri the river distance is about 4,190 miles, constituting possibly the longest waterway in the world. Its only rivals in length are the Nile and the Amazon, the precise length of neither of which is known, but is estimated for each at about 4,000 miles. The region drained by the Mississippi embraces about 1,240,050 square miles, or 41 per cent of the total area of the United States, exclusive of Alaska. In the extent of its drainage area the Mississippi is probably surpassed only by the Amazon, and is about equaled by the Obi. On an average there is carried to the sea each year by the Mississippi 159 cubic miles of water, and in this it is exceeded by the Amazon and probably the Congo and Yangtse Kiang. At certain seasons steamers can ascend to the Great Falls of the Missouri, a distance of 3,950 miles from the Gulf of Mexico. The navigable waters of the Mississippi and its tributaries are estimated at 15,000 miles.

3. *Extent of the basin.*—The catchment basin of the Mississippi covers 56 degrees of longitude and 21 degrees of latitude, and discloses a great diversity of climate. The sources of its most southerly tributary from the west, the Red, are on the confines of the arid Staked Plains; the western tributaries of the Arkansas are fed by the melting snows of the loftiest of the Rocky Mountains; the western streams of the Missouri Basin rise in the canyons of Montana and Wyoming, and its northern ones in blizzard-swept Assiniboia; the headwaters of the Upper Mississippi lie among the pine woods of Minnesota; the whole western slope of the Alleghanies is drained by the Ohio, whose most northerly tributary extends into New York, and its most southerly into Alabama. The western tributaries of the Mississippi, crossing the treeless levels of the western plains, and the eastern branches, from the wooded slopes of the Alleghanies, all seek the alluvial bed that stretches from Cairo to the Delta. From the mouth of the Ohio southward, the great river, now clothed in all its majesty, flows for nearly 1,100 miles through a level and swampy land to the Delta. Within the limits of the basin are found variations of temperature from almost arctic cold to semitropic heat; and of rainfall from desert dryness to reeking moisture.

4. *Subdivisions of the Mississippi drainage basin.*—The drainage basin of the Mississippi embraces six great natural divisions, the basins of the Ohio, Upper Mississippi, Missouri, Arkansas, and Red rivers, together with a comparatively narrow strip of country which extends along the Mississippi River from the mouth of the Missouri to the Gulf, and is drained by many small streams. The last section may be conveniently designated as the Central Valley, and terminates in the Delta, lying south of the Red River. The boundaries and location of these subdivisions are shown by the shaded areas of Plate IV, and their extent is given in the following table:

TABLE I.—GRAND DIVISIONS OF THE MISSISSIPPI BASIN.

Designation.	Area in square miles.	Ratio to whole basin.
Ohio Basin	201,700	0.16
Upper Mississippi Basin	165,900	0.13
Missouri Basin	527,150	0.43
Arkansas Basin	186,300	0.15
Red Basin	90,000	0.07
Central Valley	69,000	0.06
Total	1,240,050	1.00

The secondary basins are seen to be of very unequal extent, that of the Missouri being much the greatest, and the Central Valley the smallest; they also differ widely in their geographical and meteorological features, and it will be well to consider them a little more in detail.

OHIO BASIN.

5. *Character of the basin.*—The drainage basin of the Ohio is second in size of the six component divisions of the Mississippi Basin, and is the most densely populated. Its northern boundary is along the slightly elevated plateau south of the Great Lakes; along Lake Erie it runs nowhere more than 50 miles from the lake shore, and farther west it approaches as closely to Lake Michigan. The eastern and southern boundary lies along the crests of the Alleghanies for 700 or 800 miles. Down the western slopes of these mountains, through a rugged and heavily timbered country, flow the streams that form the Tennessee, Cumberland, Kentucky, Big Sandy, Great Kanawha, Little Kanawha, and Monongahela rivers. These streams have a steep slope, and are subject to great and sudden fluctuations in volume. The Alleghany drains northwestern Pennsylvania and southwestern New York; its tributaries also lie in a mountainous region, and its discharge shows the same variability. The northern tributaries, of which the Wabash is the largest, flow through a very different region; the ground, somewhat broken near the Ohio, becomes a gently rolling land farther north, and is now generally cleared of timber. Largely from this difference in surface features results the fact that most of the freshets in the Ohio come out of its southern and eastern branches.

6. *The Ohio River.*—From its formation by the junction of the Alleghany and Monongahela to its mouth the Ohio is 965 miles in length; its remote sources are 2,370 miles from the Gulf of Mexico. Throughout its length it is interrupted by rapids only at the falls of the Ohio, near Louisville. As will appear later, the Ohio makes a greater annual contribution to the waters discharged by the Mississippi than any other tributary. Yet, in low water, it becomes a succession of long pools and ripples, only navigable by boats of the lightest draft. The width of the river in low water is about 1,000 feet in its upper reaches and 2,500 near the mouth. The corresponding cross sections are, approximately, 5,000 and 50,000 square feet, which become in flood 50,000 and 150,000 square feet, respectively. The descent in the Ohio from Pittsburg to Cairo is 430 feet, or an average of 0.44 foot per mile for the entire length of the river.

7. *Smaller divisions of the Ohio Basin.*—It will be useful hereafter, in investigating the downfall of water over a great basin, like that of the Ohio, to consider the smaller drainage areas of which it is composed. Each section will be designated by a letter, and the various sections are shown in different patterns in the shading on the map of the drainage basin, Plate IV. The drainage areas of the smaller tributaries, entering the same portion of the river, are combined together. The various sections are clearly indicated on the map and require no detailed description. The areas of the various subdivisions of the Ohio Basin are given in the following table:

TABLE II.—SUBDIVISIONS OF THE OHIO BASIN.

Designation.	Area in square miles.	Ratio to whole basin.
A	19,050	0.10
B	32,300	0.16
C	27,300	0.14
D	25,000	0.12
E	35,150	0.17
F	18,600	0.09
G	44,300	0.22
Total	201,700	1.00

UPPER MISSISSIPPI BASIN.

8. *The Upper Mississippi River.*—The Mississippi River above the mouth of the Missouri is designated as the Upper Mississippi, and, although bearing the name of the main stream, is in reality a tributary. It rises in Lake Itasca, a sheet of clear water 7 miles long and from 1 to 3 miles

wide. This lake lies in a swampy region, abounding in ponds and lakes, and covered with pine forest. The shallow stream, 10 or 12 feet in width, which leaves Lake Itasca, meanders through woodland and grassy intervals, several times expanding into lakes. It leaves the last of these, Winnibigoshish Lake, as a stream 60 feet in width. From this point to the falls of St. Anthony the river follows a winding course and contains several rapids. The falls of St. Anthony are the head of navigation, at a distance of 690 miles above the mouth of the Missouri and 1,970 miles from the mouth of the Mississippi; from the extreme source of the river to the Gulf of Mexico, the distance is about 2,485 miles. Below the falls of St. Anthony the Upper Mississippi is a broad and placid stream, expanding 65 miles below the falls into Lake Pepin, which is 2 to 3 miles wide and 27 miles long. The river is filled with innumerable wooded islands, which make its entire width about 1 mile. At a short distance back from the river rise bluffs, and between the bluffs and the river are fertile flats, especially at the mouths of the tributaries. The latter are numerous throughout its course, but mostly small, the last and largest being the Illinois. The navigable river is interrupted by rapids at two points; at Rock Island the stream descends 20 feet in a distance of 12 miles, over a succession of rocky steps, and at the Des Moines rapids, above Keokuk, there is a fall of 22 feet in 11 miles. The descent in the Upper Mississippi, from St. Anthonys Falls to the mouth of the Missouri, is 407 feet, or an average of 0.59 foot per mile. The cross section of the river in flood, near its junction with the Missouri, is estimated at about 100,000 square feet.

9. Character and extent of the basin.—The drainage basin of the Upper Mississippi is fourth in size of the secondary basins, being exceeded by those of the Ohio and Arkansas, as well as that of the Missouri. Its eastern boundary approaches very closely to Lake Michigan, in the vicinity of Chicago; farther north it recedes from the lake, passing through central Wisconsin and into upper Michigan. Turning westward it extends along the plateau some 50 miles south of Lake Superior, and then crosses northern Minnesot . From the narrow divide separating the head-waters of the Minnesota River and those of the Red River of the North the boundary runs south-east to the mouth of the Missouri. This basin is relatively low and level, containing no mountains; its central and southern portions are prairie land. It lies on an average some 5 degrees farther north than the basin of the Ohio, and during the winter months its streams are ice-bound. The drainage area is subdivided into four sections, after the manner followed in treating of the Ohio Basin. These are shown on the drainage map, Plate IV, and their areas are as follows:

TABLE III.—SUBDIVISIONS OF THE UPPER MISSISSIPPI BASIN.

Designation.	Area in square miles.	Ratio to whole basin.
A	55,950	0.34
B	37,350	0.22
C	43,450	0.26
D	29,150	0.18
Total	165,900	1.00

MISSOURI BASIN.

10. Extent and diversified character.—The basin of the Missouri is the largest of the six divisions of the Mississippi Basin, being two and one-half times as great as the next in size—that of the Ohio. As will appear hereafter, it is also the driest of the secondary basins, and hence, notwithstanding its great extent, it is third in the volume of its annual drainage. From the sources of Marias River, in western Montana, to those of the Gasconade, in southern Missouri, it extends 1,350 miles in a southeast direction. Its northern edge reaches 75 miles beyond the northern boundary of the United States. Where the boundary line reenters the United States, in western Montana, it turns southward, and runs at an elevation of from 6,000 to 14,000 feet in a southeasterly direction to central Colorado. The southern boundary extends from Colorado across Kansas and Missouri in an easterly direction, descending rapidly at first and then more slowly,

until, at the mouth of the Missouri, the low-water surface is only 400 feet above sea-level. The variety of topographical features within this basin is unsurpassed. The mountainous western section, filled with spurs from the central ridge of the Rocky Mountains, is of the wildest character. In its higher portions the snow remains long after it has vanished at lower levels and on the loftier peaks is never absent. The rapid streams which descend the mountain valleys have cut deep canyons, with almost vertical sides of solid rock. From the base of the mountains barren and treeless plains stretch eastward, with alkaline soil and water. These gradually change to more fertile prairies, sloping imperceptibly southeastward to the central valley of the Mississippi Basin, and the rivers change in character to shallow, muddy streams with shifting beds of sand.

11. The Missouri River.—The Missouri River is formed by the junction of Jefferson, Madison, and Gallatin forks. These streams unite in a plain, surrounded by lofty peaks, and flow for some 60 or 70 miles through wild valleys and deep canyons, finally issuing into the barren foothills. About 35 miles above Benton, Mont., are located the Great Falls, where is the head of navigation. From this point the river is navigable in summer to its mouth, a distance of about 2,670 miles. From its extreme sources the length of the river is about 2,910 miles, and the distance to the Gulf of Mexico 4,190 miles. The first considerable tributary is the Yellowstone, which rises in many branches among the mountains to the south of the sources of the Missouri. At their junction the Yellowstone is of about the same size as the main stream. From this point the river assumes the character which it maintains to its mouth. The water is thick and muddy, from the washing away of the river banks, and this alluvial matter is borne onward to the Gulf of Mexico, imparting the same turgid appearance to the Lower Mississippi. The current separates into many channels, forming numerous sandy islands, which are often covered with cottonwood trees. Below the confluence of the Yellowstone the width of the river is nearly uniform to its mouth, ranging from one-third to half a mile when bank-full. Many tributaries add their water to the Missouri below the mouth of the Yellowstone, the more important being the Platte and the Kansas. All are much alike in character, and are broad and shallow streams, with sandy beds, and contain many sand bars. From the foot of the Great Falls to its mouth, the Missouri descends about 2,585 feet, or an average of 0.97 foot per mile. The cross section at the mouth is approximately 75,000 square feet in high water.

It is convenient to divide the Missouri Basin into eight sections, as shown on the drainage map, Plate IV, and their areas are given in the following table:

TABLE IV.—SUBDIVISIONS OF THE MISSOURI BASIN.

Designation.	Area in square miles.	Ratio to whole basin.
A	98,750	0.19
B	69,700	0.13
C	73,000	0.14
D	40,550	0.08
E	41,800	0.08
F	90,000	0.17
G	59,250	0.11
H	54,100	0.10
Total	527,150	1.00

The differences between the various sections of this basin in respect to climate, as well as in physical characteristics, are far greater than exist in the basins previously considered. The northwestern portion is one of the driest regions of the country, while at the southeast extremity of the basin there is a fair annual precipitation. The former region is also subject to extreme ranges of temperature.

ARKANSAS BASIN.

12. Character of the basin.—The basin of the Arkansas River bears a close resemblance to that of the Missouri in its variety of topography and its dryness. It holds the third place in

point of size, but its annual drainage is the least with the exception of that of the Red River Basin. In shape the basin is long and narrow, covering 14 degrees in longitude, with a width of 2 to 4 degrees of latitude. Its western boundary runs along the main ridge of the Rocky Mountains in Colorado and New Mexico, and the western portion of the basin possesses the same wild and rugged character as the corresponding portion of the Missouri Basin. Eastward from the mountains stretch sterile, gently rolling plains, with a slight and decreasing slope to the central Mississippi Valley, interrupted by a range of low mountains, which form an extension southwestward of the Ozark Mountains of southern Missouri. East of these mountains the country is low, rolling, and heavily timbered, finally descending to the level, alluvial plain through which the Mississippi flows. Here is a rich, black, alluvial soil, yielding generous crops of corn and cotton wherever cultivated.

13. The Upper Arkansas River.—The Arkansas River has its source in central Colorado, near Leadville. Its course is easterly to the Great Bend in Kansas, where it sweeps northeast for a hundred miles, and then turns to the southeast to its confluence with the Mississippi in southeastern Arkansas. Its length is about 1,610 miles, and the distance from its source to the Gulf of Mexico 2,290 miles. In the first 120 miles of its course the river is a clear, mountain stream, with rocky bed, descending nearly 5,000 feet in this distance. It escapes from the mountains through a magnificent gorge near Canyon City. In the vicinity of Pueblo, Colo., the width of the Arkansas is from 150 to 175 feet and its depth from 3 to 5 feet. From Pueblo to the Great Bend its width gradually increases, from the addition of many small tributaries, to 500 or 600 feet. Through this sandy, arid region the stream is shallow, and its bed largely a quicksand; the banks are low, and beyond them spreads a grassy bottom, from a half mile to 2 miles in width between the bluffs. The latter rise from 50 to 300 feet, to the general surface of the rolling prairie. Passing around the Great Bend, the river turns southeast, and enters Oklahoma near its eastern border. In this portion the river expands in width in some reaches to nearly a mile. Here it receives its first important tributary, the Cimarron. The discharge of the Arkansas River in low water is very small above the mouth of the Cimarron, and occasionally ceases entirely, there being few pools, even, to be seen.

14. The Lower Arkansas River.—Below the mouth of the Cimarron the river changes in appearance; its water loses the pale, drab color it has previously possessed, and becomes an opaque red. The banks and bars are, from deposit, of the same hue. The stream becomes more serpentine in its course, and is obstructed by many sandbars and islands. Eighty miles below the Cimarron, the Canadian River is reached, the most important tributary except the White River. This stream rises in the northeastern portion of New Mexico and is about 1,000 miles in length. Below the junction of the Canadian, the Arkansas enters the mountainous region, referred to above as extending across the basin from southern Missouri. Emerging from this broken country, the Lower Arkansas is bordered by wide, alluvial bottoms, subject to overflow unless protected by levees. At Little Rock, Ark., there is to be seen a high bluff of slate, known as Big Rock, and a little below, on the opposite bank, a similar but smaller bluff known as Little Rock. These are the last outcroppings of the underlying rocks, and a short distance below them the valley merges into the wide, alluvial plain, which extends to the Mississippi. The White River is classed as a tributary of the Arkansas, although in many respects it is an independent stream, entering the Mississippi 8 miles above the mouth of the Arkansas. The latter is at Napoleon, Ark., but the Arkansas is connected, through a large bayou, with the White River, 6 miles above the mouth of the latter. Although draining a much smaller area than the Canadian, the White River supplies a far greater annual discharge, owing to a rainfall more than twice as great over its watershed. The Arkansas is navigable in high water to Fort Gibson, about 640 miles from the mouth and 1,320 miles from the Gulf of Mexico. Its width in this reach is about 1,500 feet. The descent in the river, from Fort Gibson to the mouth, is approximately 400 feet, or an average of 0.62 foot per mile. The cross section in high water is about 70,000 square feet, at the mouth.

The Arkansas Basin is conveniently divided into four districts, as shown on the drainage map, Plate IV, and the areas of these subdivisions are given in the following table:

TABLE V.—SUBDIVISIONS OF THE ARKANSAS BASIN.

Designation.	Area in square miles.	Ratio to whole basin.
A	57,000	0.31
B	60,050	0.32
C	26,500	0.14
D	42,750	0.23
Total	186,300	1.00

RED BASIN.

15. Character of the basin.—The basin of the Red River is less than half the size of that of the Arkansas, but is similar to the latter in topography, except that its western limits lie to the south and east of the Rocky Mountains. This portion of the basin forms a part of the desert plateau of el Llano Estacado. Eastward to the Cross Timbers the country is a barren gypsum desert for the most part. The Cross Timbers are an open forest of oak and blackjack, from 5 to 30 miles in width, and extending in a southwest direction from the Arkansas to the Brazos River. The Red River crosses this forest between longitude 97° and 98°. East of the Cross Timbers the transition is sudden to a fertile and well watered country with abundant vegetation. The lower portion of the basin is low, and contains many swamps and bayous. The only mountainous regions embraced in this drainage area are the Wichita Mountains in Oklahoma, west of the Cross Timbers, and the rugged district about the Upper Ouachita.

16. The Red River.—The Red River rises in a ravine, some 60 miles in length, at the eastern rim of el Llano Estacado. Lofty sandstone walls rise precipitously to a height of 500 to 800 feet, springing almost from the river bank. The bluffs, into which this ravine is cut, rise abruptly from the lower prairie and terminate at the summit in a level plateau, stretching south and west in desert sterility. The water of the river for 400 miles is bitter and nauseating from the salts held in solution. Soon after its débouché from el Llano Estacado the river spreads out into a shallow stream, 2,000 to 2,500 feet in width, flowing rapidly over a sandy bed. Its first noteworthy tributary is the North Fork, which enters on the western borders of the Wichita Mountains. East of the Cross Timbers the Washita unites with the Red River, and from this point the stream changes in character. It now flows through rich alluvial bottoms, with a sluggish current, in a muddy bed. Its width contracts greatly, and ranges from 600 to 800 feet as far as the mouth of the Black, or 460 miles from its own mouth; at the latter point its width has again increased to 1,800 feet. The only tributary of great importance is the Black, which drains the Tensas bottom through Bayou Tensas. This river is formed by the union of the Ouachita, Little River, and Bayou Tensas, and is a deep, navigable stream 54 miles long.

17. Outlet bayous of the Lower Red.—From the source to the mouth of the Red River the distance is appromimately 1,530 miles, and to the Gulf of Mexico 1,840 miles. Just above Alexandria, La., at a distance of 139 miles from the mouth, the first bayou, the Rapides, is met. From this point to its mouth the Red River forms the northern boundary of the Delta. Bayou Atchafalaya leaves the river 7 miles above the mouth, and carries the main discharge of the Red to the Gulf, independently of the channel of the Mississippi. Numerous bayous connect the Atchafalaya with the Red at various points up to the Rapides. In times of high flood water from the Mississippi enters the mouth of the Red and is discharged through the Atchafalaya, thus reducing in some degree the height of the flood at points below on the Mississippi. The Red River is not therefore a true tributary of the Mississippi, but partakes largely of the character of an independent stream. The cross section of the lower river in high water is about 40,000 square feet. The river is navigable to Shreveport, La., except in extreme low water, and to Fulton, Ark., at a distance of 565 miles from its mouth, in high water. The descent in the river from the latter point is about 240 feet, or an average of 0.42 foot per mile.

The basin of the Red River may be divided into an upper and a lower section, as shown on the drainage map, Plate IV, and the areas of these subdivisions are as follows:

TABLE VI.—SUBDIVISIONS OF THE RED BASIN.

Designation.	Area in square miles.	Ratio to whole basin.
A	45,800	0.51
B	44,200	0.49
Total	90,000	1.00

The upper portion of the basin is a region of very light precipitation; indeed, is a veritable desert. Its lower section, on the other hand, receives nearly the maximum rainfall of the Mississippi Basin. In the latter portion is included the great swamp known as the Tensas bottom, which is largely below the high-water level of the Mississippi, and is liable to overflow.

CENTRAL VALLEY.

18. Extent of the Central Valley.—Under the designation of the Central Valley have been included the many small basins which are drained by direct tributaries of the Mississippi south of the Missouri. Together they form a strip of country nowhere exceeding 200 miles in width, and terminating in the Delta. The only important streams among these tributaries are the St. Francis and the Yazoo, which drain the two great bottoms of the same names. The total area included in the Central Valley is only three-fourths that of the Red River Basin, making it the smallest of the six grand divisions of the Mississippi Basin. The annual precipitation, however, over this region is heavy and the water courses short, and, as a result, its contribution to the Mississippi discharge is exceeded only by that of the Ohio.

19. Basins of the Kaskaskia and Meramec rivers.—The Central Valley is naturally divided into six districts. The first, descending the Mississippi, is the country extending from the mouth of the Missouri River to Cape Girardeau, Mo., on the right bank, and to the mouth of the Ohio on the left bank. This is designated as A upon the drainage map. The chief stream on the right bank is the Meramec, which drains the northeast slope of the Ozark Mountains and enters the Mississippi about 25 miles below St. Louis. Smaller creeks drain the land immediately adjacent to the Mississippi south of the Meramec. This whole region is hilly and contains no land liable to inundation. On the left bank the most important stream is the Kaskaskia, which joins the Mississippi 50 miles below the Meramec. Between the mouth of the Missouri and that of the Kaskaskia is the American bottom, which is flooded in very high water. A smaller strip of land, bordering the Mississippi above Cairo is also subject to inundation. The Kaskaskia itself flows through an alluvial bottom, which is overflowed in freshets.

20. Basin of the St. Francis River.—From Cape Girardeau, Mo., to Helena, Ark., the right bank of the Mississippi bounds what is known as the St. Francis Basin, although some small areas are drained by other streams than the St. Francis. This forms the second natural division of the Central Valley and is designated as B upon the drainage map. Two-thirds of this entire area of 10,500 square miles is included in the St. Francis bottom; the remainder is a broken, hilly country, forming a portion of the southern slope of the Ozark Mountains and descending rapidly to the bottom lands. Just below Cape Girardeau there is a strip of lowland for 4 miles along the right bank of the Mississippi, over which flood water flows into the St. Francis bottom. This is the northern limit of the swamp region. The bluff reappears at Grays Point and continues for 7 miles to Commerce, Mo. From the latter point to the lower end of the St. Francis Basin at Helena, Ark., the right bank of the Mississippi is low, except at New Madrid, Mo. At this point the Mississippi cuts through a low ridge, which is the continuation southward of the Commerce bluffs. The high land at Cape Girardeau extends in a long range of low hills, known in different parts as Hickory Ridge, Bloomfield Ridge, and Crowleys Ridge, at first southwest and then south to Helena. These hills, from 200 to 400 feet in height, form the western boundary of the St. Francis bottom. Near

their northern end they are pierced by the White and Castor rivers and a little farther south by the St. Francis. The latter stream, after piercing the hills at Chalk bluff, flows southward, close to their base, to its mouth, 9 miles above Helena.

21. St. Francis bottom.—The swamp known as the St. Francis bottom is a great plain, which extends from the bounding western ridge to the Mississippi. It is nearly level, but slopes toward the west, or away from the Mississippi River, with an average gradient of about 0.5 foot to the mile. From north to south there is a slightly greater descent of about 0.7 foot per mile. Some small ridges cross the swamp and are above overflow, but for the most part the entire area would be submerged in floods unless protected by levees. The extent of country liable to inundation is about 6,090 square miles. From Point Pleasant, Mo., southward for 125 miles a levee now borders the river. The remaining front of the St. Francis bottom is not leveed. The building of this levee has had an important effect upon the regimen of the St. Francis River. Before its construction many bayous gave entrance for the Mississippi water to the swamp long before the crest of the flood was reached. The swamp thus filled drained into the St. Francis, and when the flood crest in the Mississippi reached Helena the St. Francis would also be in high flood and would add large quantities of water to the Mississippi flood at its top. Since the building of the levee this action is much reduced, and it sometimes happens in rapid rises of the Mississippi that the current of the St. Francis is reversed and the river backed up as far as Wittsburg, a distance of 80 miles. At the same time the water which is retained in the Mississippi causes the crest of the main flood to be higher at Memphis and Helena. It seems from the records of the flood of this year that the latter effect is the greater, and that the total effect of the levee has been to cause decidedly higher water at the head of the Yazoo bottom.

22. Basins of the Obion and Hatchee rivers.—On the left bank, from Cairo, Ill., to a few miles below Memphis, Tenn., the bluffs are nowhere far removed from the Mississippi. They touch the river at Columbus and Hickman, Ky., distant 21 and 36 miles, respectively, from Cairo. Again, between New Madrid and Point Pleasant, Mo., the bank is high, the river here intersecting the ridge before noted as extending south from the Commerce bluffs. Below this point the four Chickasaw bluffs, on the fourth of which Memphis is built, approach the river. The region back of the bluffs is mostly hilly, and is drained by many small rivers and creeks. The more important of these streams are the Obion, the Forked Deer, the Hatchee, and the Wolf. This entire drainage area, designated as C upon the drainage map, between the Ohio River and the Yazoo bottom, comprises about 10,250 square miles, of which little more than 600 are liable to inundation.

23. Basin of the Yazoo River.—From the Tennessee-Mississippi boundary line, 18 miles by river below Memphis, to Vicksburg, the Mississippi River borders the Yazoo bottom. The latter is a heavily timbered alluvial plain of oval shape, about 180 miles in length and 70 miles in width at its widest part. Like the St. Francis bottom, it slopes away from the Mississippi River and descends toward the south. The gradient is less than in the former bottom, being on an average 0.4 foot per mile from west to east and 0.6 from north to south. On its eastern side the swamp is bounded by a line of hills, close to which flows the main stream, which drains this region. In its upper portion this river is known as the Coldwater, and below the confluence of the Tallahatchie as the Yazoo. The total length of the stream is some 500 miles, and it is navigable throughout the year to Greenwood, Miss., about 240 miles from the mouth. Including the upland, the total area drained by the Yazoo is about 13,850 square miles; the bottom embraces 6,650 square miles subject to overflow. This basin is designated as D on the drainage map.

24. The Yazoo bottom.—The Yazoo bottom is traversed by a ridge from 2 to 6 miles in width, and above overflow. This forms an extension southward of Crowleys Ridge, and stretches almost entirely across the bottom from Delta, Miss., on the Mississippi River, south of Helena. With this exception, the entire bottom is liable to submergence in times of flood, save as it is protected by levees. At the present time the entire front has been leveed, from the northern boundary of Mississippi to a point 13 miles above Vicksburg, a distance by river of 336 miles. The construction of the levee has produced a change in the regimen of the Yazoo River similar to that in the case of the St. Francis. In former times the Yazoo bottom began to fill when the Mississippi was as much as 10 feet below the maximum flood height, and the Yazoo River discharged a large volume of water even at the top of the highest floods. At present, while the levees remain unbroken,

the Yazoo is backed up by a Mississippi flood—sometimes in rapid rises for as much as 70 miles from its mouth—unless there be at the same time a local freshet in its tributaries, when it may maintain a moderate discharge. In rare instances there is even a reversed current of water from the Mississippi.

25. The Tensas bottom.—From the southern border of the St. Francis basin to the Red River the country bordering the right bank of the Mississippi is included in the Arkansas and Red basins, which we have already considered. This land is all low, and embraces the Tensas bottom, about 4,955 square miles in extent, and similar in character to the St. Francis and Yazoo bottoms. This great swamp is chiefly drained by Bayou Tensas, which unites with the Ouachita and Little rivers to form the Black, the most important tributary of the Red.

26. Basins of the Big Black and Homochitto rivers.—Between Vicksburg, Miss., and Baton Rouge, La., several small tributaries enter the Mississippi on the left bank, the larger of which are the Big Black and the Homochitto. Except a narrow strip of low land immediately bordering the river, this drainage area is rolling and hilly; bluffs from 100 to 300 feet in height are met at a short distance from the river. Of its total area of about 7,250 square miles, not more than 415 are liable to overflow. At several points the bluffs extend clear to the river, notably at Natchez, Fort Adams, and Port Hudson. This drainage area is shown on the map as Section E of the Central Valley.

27. Extent of the Delta.—Considering the location of the general coast line of the Gulf of Mexico, and the geological formation of the soil, as shown from various borings, the conclusion is reached that the true Delta of the Mississippi begins not far from the head of the former Bayou Plaquemine, now closed. This would make the advance of the river mouth into the Gulf some 220 miles. It is customary, however, to designate by the term *Delta* all that alluvial region which stretches southward from the Red River. The northern and eastern boundary of this region begins at Bayou Rapides on the Red River, and follows the latter to its mouth; from the latter point to Bayou Manchac, 14 miles below Baton Rouge, the Mississippi forms the boundary: descending Bayou Manchac to the Amite River and the latter to its mouth, the boundary then follows the southern shore of Lakes Maurepas, Pontchartrain, and Borgne, and their connecting passes, to the Gulf of Mexico. From Lake Borgne on the east to Vermilion Bay on the west the coast line bounds the Delta, and thence the boundary extends northwestward to its initial point on Red River. The area embraced in the Delta is designated on the drainage map as section F of the Central Valley.

28. Character of the Delta.—With the exception of a small area of higher ground, known as Avoyelles Prairie, near the Red River, and the prairies along Bayou Teche, this entire section, designated as F on the drainage map, 12,300 square miles in extent, is a low, swampy region, intersected by countless bayous. Fully 4,000 square miles are a sea marsh, and above 10,000 are liable to overflow. The main drain of the Delta is Bayou Atchafalaya, which leaves the Red River 7 miles from its mouth, and, flowing southward through Grand Lake, finally reaches the sea at Atchafalaya Bay. Formerly Bayou Plaquemine left the Mississippi 20 miles below Baton Rouge, and connected with the Atchafalaya through Grand River, but this bayou has now been closed by the Mississippi levee. Thirty-three miles farther down, and 80 miles above New Orleans, the second great drain of the Delta, known as Bayou La Fourche, leaves the Mississippi at Donaldsonville, La. This flows south and southeast to the sea, its mouth being midway between those of the Atchafalaya and the Mississippi. At the western edge of the Delta, Bayou Teche at the south and Bayou Bœuf farther north, together with Bayou Rapides, form a second drainage line from the Red to the Atchafalaya near its mouth, and the intervening region is covered by a network of intercommunicating bayous, connected with the Red River at several points between Bayous Rapides and Atchafalaya.

29. General features of the Central Valley.—The various divisions of the Central Valley have now been considered briefly. The entire valley has an abundant annual precipitation, which grows heavier as we proceed toward the south. On its southern extremity the maximum precipitation of the Mississippi drainage basin falls, amounting to 60 inches in the year. Of the entire area of 69,000 square miles included in the Central Valley, 30,000 square miles are alluvial land, covered

with river sediment, and subject to overflow, except as protected by artificial means. The areas of the various subdivisions are shown in the following table:

TABLE VII.—SUBDIVISIONS OF THE CENTRAL VALLEY.

Designation.	Area in square miles.	Ratio to whole basin.
A	14,850	0.22
B	10,500	0.15
C	10,250	0.15
D	13,850	0.20
E	7,250	0.10
F	12,300	0.18
Total	69,000	1.00

LOWER MISSISSIPPI RIVER.

30. The alluvial plain.—From the mouth of the Missouri to the Gulf of Mexico, a distance by water of 1,280 miles, the river is designated as the Lower Mississippi, to distinguish this portion from the Upper Mississippi, which, as before remarked, is rather a tributary than a part of the main stream. For most of this distance the river's course is through an alluvial plain, covered to no great depth with sedimentary deposits of the stream. The extent of this alluvial region is shown by the lighter tint on Plate V, as it has been laid down on the large map, published in 1887 by the Mississippi River Commission. The alluvion rarely exceeds 40 feet in depth, and is everywhere underlaid by a hard, tenacious blue clay, below which is found water-bearing gravel and sand. In many instances there are alternate strata of clay and gravel. The bed of the river from the mouth of the Ohio to the Gulf of Mexico is in this blue clay. The immediate banks of the river are higher than the land farther back, which is for the most part below the high-water level. The slope is greatest near the river, being from 3 to 12 feet in the first mile, and averaging perhaps 7; it then diminishes until the almost level swamp is reached, at a distance of 2 or 3 miles from the river.

31. Character of the Lower Mississippi River.—The head of the alluvial plain is at Cape Girardeau, Mo., where the highlands of the upper river cease for a distance of 4 miles, to reappear for a short distance as the Commerce bluffs. Below the latter the Mississippi touches high land on its right bank at only two points, New Madrid, Mo., and Helena, Ark. On the left bank high land approaches the river at Columbus and Hickman, Ky., at the four Chickasaw bluffs, and at several points from Vicksburg, Miss., to Baton Rouge, La. The direct distance from the head of the alluvial plain to the mouth of the Mississippi is less than 600 miles, but by the tortuous river channel it exceeds 1,100 miles. The river is turbid with a yellowish mud, the sediment carried being stated by Humphreys and Abbot as one fifteen-hundredth part of the river water by weight. The total transport of earthy matter to the sea is, approximately, 400,000,000 tons per year. The Lower Mississippi is a turbulent stream, eating away its banks in the bends, building and destroying islands and bars in its channel. The caving of its banks is occasioned by the peculiar formation of the soil, already noted; the underlying sand and gravel is washed out, and then the overlying stratum of clay falls of its own weight, and is dissolved by the swift current.

32. Dimensions of the river.—In its course through the alluvial plain, the Mississippi decreases in width and increases in depth, while its cross section changes but slightly. The following table, compiled by Humphreys and Abbot, from accurate measurements, is taken from their report:

TABLE VIII.—MEAN DIMENSIONS OF THE LOWER MISSISSIPPI.

Locality.	High water.			Low water.		
	Cross section.	Width.	Maximum depth.	Cross section.	Width.	Maximum depth.
	Sq. feet.	*Feet.*	*Feet.*	*Sq. feet.*	*Feet.*	*Feet.*
Cairo to Arkansas River	191,000	4,470	87	45,000	3,400	49
Arkansas River to Red River	199,000	4,080	96	54,000	3,060	56
Red River to bayou La Fourche	200,000	3,000	113	100,000	2,750	78
Bayou La Fourche to Head of Passes	199,000	2,470	129	163,000	2,250	114

33. Slope of the water surface.—River gauges have been established at various points along the Lower Mississippi, and the height of the water surface thereon has been observed for periods of from twenty-five to thirty-five years. The elevation of the gauges above sea level has been determined through precise surveys by the United States engineers. From these gauge readings there has been computed the average stage of water at certain points, and this, referred to sea level, enables us to determine the average slope of the river. The resultant data are given in the following table:

TABLE IX.—MEAN SLOPE OF THE LOWER MISSISSIPPI.

Stations.	Mean stage above sea level.	Distance between stations.	Average slope per mile, between stations.
	Feet.	*Miles.*	*Foot.*
St. Louis, Mo	391.6		
		191	0.528
Cairo, Ill	290.8		
		230	0.403
Memphis, Tenn	198.1		
		369	0.353
Vicksburg, Miss	67.9		
		358	0.173
Carrollton, La	6.1		

It will be observed that the slope steadily diminishes as the Gulf is approached. During the remaining 116 miles from Carrollton to the Gulf the slope is very slight.

34. Mouths of the Mississippi.—The waters of the Mississippi are discharged through several mouths, and across a true delta. From the last outlet bayou, La Fourche, to Fort St. Philip, the channel is nearly uniform, averaging in high water 199,000 square feet in cross section, 2,470 feet in width, and 129 feet in maximum depth; these dimensions become in low water 163,000 square feet, 2,250 feet, and 114 feet, respectively. Twenty miles below Fort St. Philip, at the Head of the Passes, the river spreads out to a width of 7,000 or 8,000 feet, its maximum depth decreases to about 40 feet, and its cross section becomes 250,000 square feet. It then divides into three branches, two of which flow direct to the sea, and are known as the Southwest and the South pass, respectively. The third subdivides, 5 miles from its head, and finally reaches the sea by five mouths, known as Balize Bayou, Southeast Pass, Northeast Pass, Pass a l'Outre, and North Pass. There are also three small outlets above the main passes. Midway between Fort St. Philip and the Head of the Passes are found two small outlets, the Jump on the west and Baptiste Collet Bayou on the east side; and about 2 miles above the Head of the Passes another small outlet, known as Cubits Gap, occurs on the east side.

35. Mississippi levees.—From Fort St. Philip, 20 miles above the Head of the Passes, to Baton Rouge, the river is leveed on both sides. On the east bank there is no levee above Baton Rouge until that in front of the Yazoo bottom is reached. On the west bank the levee continues to the Red River, and is resumed 30 miles above the latter. Thence it extends to a point 25 miles below the Arkansas River, and is again resumed a few miles above, continuing to Helena, Ark. One hundred and six miles farther upstream the St. Francis Levee begins, and extends to Point Pleasant, Mo.

SECTION II.

NORMAL PRECIPITATION AND DRAINAGE.

Relation of downfall and drainage—Method of determining downfall—Errors in hyetal measurements—Magnitude of rain-gauge errors—Cause of error is the wind—Proper method of determining normal precipitation—The isohyetal charts—Geographical distribution of precipitation—Seasonal changes in distribution—Method of computing precipitation on a watershed—Average precipitation on the various watersheds—Downfall in the six chief divisions of the Mississippi Basin—Determination of discharge—Available data—Computation of normal discharge—Remarks upon the computed discharges—Differences in normal drainage—Measurement of the stage of a river—Stations selected for study—Method of computing normals—Normal regimen of the rivers—Mean and extreme river stages—Normal monthly stages.

The water discharged from a river basin is derived entirely from the precipitation falling over it. Of the total downfall of water a part flows off upon the surface of the ground to the small rivulets and drains, ultimately reaching the main river of the basin. The remainder sinks into the ground, and is partly absorbed by vegetation, partly evaporated, and in part sinks until it reaches the impervious rock, which lies at no great depth below the surface. Along this rock it slowly flows down the slope, and gives rise to the springs which supply the steady flow of the stream. Floods and freshets have their origin in the surface discharge, while the low-water flow of streams is chiefly due to the underground waters. The relation of downfall to drainage will vary with the character of the soil and vegetation and the steepness of the surface slope. In a region like the dry western plains of the Missouri Valley, which is level and sandy, and over which the precipitation is deficient, the proportion of the downfall that reaches the river will be small. On the other hand, in a region like the Yazoo bottom, which remains almost saturated with moisture at all times and is densely shaded by vegetation, and where, moreover, the rainfall is excessive, a large portion of the downfall will be discharged.

36. Method of determining downfall.—In investigating a river system it is of prime importance to ascertain the downfall of water over the area drained. For this purpose it is necessary to know the area of the watershed and the depth of precipitation which falls upon it. Probably no other meteorological element has been made the subject of more frequent observation than the precipitation, and yet it is doubtful if the true normal rainfall is known at any point of the earth's surface within 3 per cent, or perhaps an inch in an annual amount such as falls in the eastern part of the United States. We possess a number of records of precipitation covering a period in excess of half a century, and many exceeding thirty years in length. As records of the catch of water by a certain gauge in a certain location, some of these records are admirable. There are, however, certain inherent errors in the ordinary methods of measuring precipitation, which have received too little consideration at the hands of meteorologists.

MEASUREMENT OF PRECIPITATION.

37. Errors in hyetal measurements.—So important is the matter of errors in the measurement of precipitation that it merits a moment's consideration. The practically universal method of measurement is by exposing in an open place a cylindrical vessel of moderate size, usually 4 to 8 inches in diameter and relatively deep. The measured precipitation has been shown to be liable to error from two sources, one arising from the gauge itself and the other from its environment. The error from both sources is due to irregular eddies and currents of wind, caused in the one case by the obstruction to the wind of the gauge itself, and in the other by the more or less close proximity of trees, buildings, or other irregularities of the surface. The effect is the greater the greater the velocity of the wind, and hence increases with altitude above the surface, because the wind velocity is greater at higher elevations.

38. Magnitude of rain-gauge errors.—This matter has been treated at length by Professor Abbe, in Bulletin No. 7, Forestry Division, Department of Agriculture, in which anyone interested in the subject may find a more detailed discussion of the errors in the measurement of precipitation. The following table, first given by Wild, is taken from this bulletin and shows the great inaccuracy of measurement with the usual form of gauge:

TABLE X.—DEFICITS OF RAIN-GAUGE CATCH.

Altitude of gauge.	Low wind velocities (4 to 11 miles per hour).		High wind velocities (12 to 20 miles per hour).	
	Rainfall.	Snowfall.	Rainfall.	Snowfall.
Feet.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
3	5	11	6	14
7	8	14	16	18
80	19	74	44	84

The effect of the error arising from the gauge itself is always to give too small a catch, the deficit with the usual gauge, in a lengthy period, seemingly never being less than 5 per cent. The table also shows that the deficit is much greater in the case of snow than in that of rain, and it has further been shown by Bornstein that the deficit is greater in a fine than in a heavy rain. The effect of environment may be either to increase or diminish the catch, and hence the combined effect of the two sources of error may be to make the catch either exceed or fall short of the true precipitation, and by as much as 25 per cent in extreme cases. The effect of environment has been investigated by Hellmann at eleven stations in and about Berlin, with gauges exposed at each after a uniform plan. All the gauges were at a fixed height of 42 inches above the ground, and were situated in open places; in other words, the gauges were vastly more uniform in exposure than those whose records we are to discuss, and their mutual variations must be attributed to environment. The results of observations for two full years showed departures in the annual catch of individual gauges, from the mean catch of the whole eleven, of as much as 14 per cent. The probable error in the annual rainfall, as determined by any single gauge, is found to be 6 per cent.

39. Cause of error is the wind.—Professor Abbe sums up the conclusions to be drawn from these observations of Hellmann, as follows:

> Instead of studying the geographical or horizontal distribution of the total annual rainfall, it is safe to assume that that had been uniform for each year over this small area, and that we are studying simply the horizontal distribution of a deficiency in catch, or a rain-gauge error due to very local winds at the mouths of the gauges. This conclusion is confirmed by examining the records in the summer months separately from those in the winter. Local showers are frequent during the summer, and irregularities in horizontal distribution are presumptively greater at that time. During the winter the extended layers of clouds give us no *a priori* reason to expect large irregularities in the geographical distribution of snowfall and rain. Hellmann's records show that the geographical irregularities in the catch of his gauges are really least in summer and greatest in winter, thus confirming our convictions that on the average of the year the precipitation is uniformly distributed, and the variations in catch depend on the geographical distribution of the wind at the gauges during the fall of rain and snow.

NORMAL AMOUNT OF PRECIPITATION.

40. Proper method of determining normal precipitation.—Errors of the very considerable magnitude which we have noted above are possible in any record of precipitation which we possess. We can, therefore, arrive at a rational idea of the normal distribution of precipitation over the United States only by a process of mutual adjustment of measured amounts at the different observation stations, and must beware of giving close details based on a single record. This method has been followed in the preparation of the normal monthly and annual charts of precipitation, Plates VII to XIX. The normal data on which these charts are based have been collected by the Division of Records and Meteorological Data of the Weather Bureau, and are given in full in the following table:

TABLE XI.—NORMAL MONTHLY AND ANNUAL PRECIPITATION.

OHIO DRAINAGE BASIN.

Stations.	Latitude.		Longitude.		Years of record.	Precipitation in inches.												
						January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
	°	′	°	′														
Cairo, Ill	37	00	89	10	25	3.7	3.9	3.8	3.8	4.1	4.4	3.4	2.8	2.6	2.7	4.2	3.2	42.6
Indianapolis, Ind	39	46	86	10	27	2.9	3.4	3.6	3.6	4.0	4.5	4.2	3.3	3.1	2.8	3.8	3.0	42.2
Bowling Green, Ky	36	58	86	25	10	4.2	5.0	4.7	4.9	4.5	4.0	4.3	4.1	2.7	2.5	4.6	3.4	48.9
Lexington, Ky	38	02	84	33	11	4.1	3.5	4.7	3.8	3.4	4.2	4.7	3.6	2.6	2.5	3.6	3.3	44.0
Louisville, Ky	38	15	85	45	54	3.7	4.0	4.4	4.2	4.1	4.7	4.1	3.8	3.0	2.9	3.9	4.4	47.2
Murphy, N. C	35	05	84	02	16	6.2	6.3	6.0	5.0	3.2	5.4	6.5	5.3	3.5	3.1	4.5	5.2	60.2
Cincinnati, Ohio	39	06	84	30	62	3.3	3.3	3.5	3.3	4.0	4.4	3.9	3.8	3.0	2.8	3.3	3.5	42.1
Kenton, Ohio	40	40	83	33	15	3.8	3.3	5.1	3.9	6.0	5.6	5.1	4.4	3.1	2.7	3.8	3.8	50.6
Marietta, Ohio	39	28	81	26	69	3.1	3.1	3.2	3.3	3.9	4.1	4.4	3.9	3.1	3.1	3.1	3.4	41.7
North Lewisburg, Ohio	40	12	83	32	25	3.6	3.5	3.2	3.1	3.9	4.0	4.4	3.3	3.2	2.2	3.3	2.8	40.5
Portsmouth, Ohio	38	42	82	53	63	3.5	3.2	3.5	3.2	3.5	4.0	3.9	3.4	2.8	2.8	2.9	3.5	40.2
Confluence, Pa	39	48	79	21	21	4.0	3.9	3.5	3.4	4.0	4.4	4.6	3.7	3.1	2.9	3.2	3.6	44.3
Pittsburg, Pa	40	32	80	02	54	2.6	2.5	2.8	3.0	3.5	3.6	4.0	3.4	2.9	2.8	2.6	2.9	36.6
Chattanooga, Tenn	35	04	85	15	18	6.4	5.8	5.8	4.5	4.1	4.7	4.1	4.1	3.7	2.6	4.0	4.3	53.9
Knoxville, Tenn	35	56	83	58	26	5.3	5.3	5.4	4.9	4.0	4.2	4.4	4.0	2.7	2.7	3.8	3.9	50.6
Nashville, Tenn	36	09	86	49	32	5.0	5.0	5.2	4.7	3.9	4.3	4.3	3.6	4.1	2.7	3.9	3.5	50.2
Wytheville, Va	36	55	81	02	26	3.4	3.3	3.4	3.4	3.7	4.0	4.0	4.0	3.7	3.0	2.6	2.8	41.3

UPPER MISSISSIPPI DRAINAGE BASIN.

Marengo, Ill	42	15	88	37	45	1.9	1.9	2.4	2.8	3.9	4.3	3.7	3.7	3.8	2.4	2.2	1.9	34.9
Peoria, Ill	40	42	89	36	41	1.7	2.0	2.6	3.2	3.8	3.7	4.0	3.0	3.5	2.4	2.4	2.3	34.6
Ames, Iowa	42	03	93	38	21	1.0	0.8	1.6	2.9	4.1	4.4	4.7	3.4	3.6	2.3	1.3	1.1	31.2
Cresco, Iowa	43	22	92	07	25	1.3	0.9	1.8	2.6	3.8	5.0	3.9	2.8	3.6	2.3	1.5	1.4	30.9
Davenport, Iowa	41	30	90	38	26	1.7	1.6	2.2	2.8	4.2	4.2	3.6	3.6	3.2	2.6	2.0	1.6	33.3
Keokuk, Iowa	40	22	91	26	24	1.7	1.7	2.2	3.2	4.1	4.5	4.1	2.8	3.5	2.8	2.1	2.0	34.7
Monticello, Iowa	42	13	91	15	42	1.6	1.7	2.4	2.6	3.9	4.5	4.2	3.7	3.8	2.8	2.3	2.3	35.8
Fort Riley, Kans	39	02	96	45	39	0.6	0.9	1.0	2.0	3.4	3.9	3.7	3.7	2.8	1.6	1.2	0.8	25.6
Fort Ripley, Minn	46	10	94	24	27	0.8	0.9	1.5	1.8	3.2	4.3	4.0	3.3	3.1	1.6	1.6	0.9	27.0
St. Paul, Minn	44	56	93	05	39	1.0	0.9	1.5	2.5	3.5	4.1	3.3	3.8	3.2	2.0	1.3	1.1	28.2
La Crosse, Wis	43	49	91	15	24	1.2	1.1	1.5	2.4	3.3	4.5	4.0	3.2	4.2	2.3	1.6	1.4	30.7
Madison, Wis	43	05	89	24	28	1.8	1.7	2.4	2.6	3.5	4.5	4.0	3.1	3.1	2.6	1.9	2.0	33.2

MISSOURI DRAINAGE BASIN.

Denver, Colo	39	45	105	00	27	0.6	0.5	1.0	2.0	2.7	1.8	1.7	1.4	0.9	0.9	0.7	0.6	14.3
Fort Collins, Colo	40	35	105	02	10	0.7	0.6	0.8	1.7	2.9	1.7	1.8	1.3	0.9	0.9	0.4	0.3	14.0
Lawrence, Kans	38	58	95	14	31	1.2	1.4	2.3	3.2	4.6	5.0	4.7	3.9	3.5	2.7	1.8	1.6	35.9
Hermann, Mo	38	41	91	28	14	2.2	2.8	3.2	3.4	4.6	5.1	3.7	2.9	3.7	2.9	3.2	2.1	38.9
Miami, Mo	39	18	93	15	49	1.7	1.7	2.4	3.0	4.2	5.0	4.2	3.6	3.4	2.8	2.1	2.0	36.1
Oregon, Mo	40	02	95	09	41	1.6	1.8	2.0	3.3	4.7	4.7	4.3	4.3	3.1	2.6	1.7	1.6	35.7
Rolla, Mo	37	56	91	32	10	2.2	2.9	3.3	5.2	5.1	4.1	5.0	3.4	3.2	2.3	2.3	2.3	41.3
St. Louis, Mo	38	37	90	12	60	2.2	2.7	3.4	3.7	4.7	5.0	3.8	3.5	3.1	2.8	3.1	2.8	40.8
Fort Keogh, Mont	46	22	105	56	19	0.6	0.5	0.6	1.1	2.2	2.8	1.2	0.9	0.8	1.0	0.5	0.4	12.6
Havre, Mont	48	32	109	42	16	0.9	0.5	0.5	1.0	1.7	3.1	2.1	1.4	1.2	0.6	0.7	0.5	14.2
Helena, Mont	46	34	112	04	15	1.3	0.7	0.7	1.1	1.6	2.3	1.1	0.6	1.2	0.9	0.8	0.9	13.2
Virginia City, Mont	45	10	112	00	16	0.6	0.6	1.0	1.2	2.7	2.3	1.4	1.2	1.3	0.8	0.7	0.8	14.6
Genoa, Nebr	41	25	97	40	21	0.9	0.8	1.2	2.9	4.1	4.5	3.9	2.5	2.8	1.5	0.8	0.9	26.8
Minden, Nebr	40	30	98	56	18	1.1	1.2	1.5	3.5	5.3	5.4	5.2	3.2	2.4	1.8	0.9	0.8	32.3
North Platte, Nebr	41	08	100	45	29	0.4	0.4	0.7	2.1	3.0	3.5	2.5	2.3	1.5	0.8	0.4	0.5	18.1
Omaha, Nebr	41	16	95	56	27	0.7	0.7	1.5	3.1	4.5	5.3	4.6	3.3	3.0	2.6	1.1	1.0	31.4
Bismarck, N. Dak	46	47	100	38	22	0.6	0.6	1.1	2.3	2.5	3.5	2.3	2.0	1.2	1.0	0.8	0.6	18.5
Fort Buford, N. Dak	48	00	103	55	29	0.6	0.5	0.6	1.2	2.4	2.8	1.7	1.2	0.8	0.8	0.6	0.6	13.8
Fort Meade, S. Dak	44	26	103	28	16	0.8	0.5	1.4	2.8	3.5	3.3	1.9	1.7	0.6	0.9	0.7	0.6	18.7
Fort Sully, S. Dak	44	39	100	39	25	0.5	0.4	1.2	2.1	2.6	3.3	2.7	1.9	0.9	0.7	0.4	0.5	17.2
Huron, S. Dak	44	21	98	09	14	0.5	0.6	0.9	2.9	3.0	3.6	3.1	2.6	1.4	1.2	0.6	0.6	21.0
Yankton, S. Dak	42	54	97	28	20	0.6	0.8	1.2	3.3	4.0	4.1	3.5	3.0	2.6	1.3	0.6	0.8	25.8
Cheyenne, Wyo	41	08	104	48	27	0.4	0.4	0.8	1.5	2.3	1.5	1.9	1.6	1.0	0.7	0.3	0.3	12.7
Fort Washakie, Wyo	42	30	108	53	12	0.6	0.4	1.5	2.1	2.2	1.0	0.8	0.6	0.5	0.8	0.7	0.4	11.6

ARKANSAS DRAINAGE BASIN.

Fort Smith, Ark	35	23	94	29	33	2.1	3.1	2.9	4.8	4.7	4.2	3.9	3.4	3.1	3.2	3.6	2.7	41.7
Lead Hill, Ark	36	29	92	46	15	2.7	4.1	4.1	4.2	6.0	4.8	5.2	4.7	4.0	3.5	3.8	4.3	51.4
Little Rock, Ark	34	45	92	06	16	4.9	5.3	5.2	4.8	5.8	4.3	4.0	4.1	3.2	2.5	5.3	4.3	53.7
Colorado Springs, Colo	38	51	104	47	12	0.2	0.3	0.6	1.4	2.4	1.9	3.2	2.2	1.1	0.6	0.3	0.3	14.5
Las Animas, Colo	38	04	103	12	12	0.3	0.4	0.6	1.1	1.9	1.4	1.6	1.6	0.6	0.5	0.2	0.6	10.8
Fort Gibson, Ind. T	35	50	95	20	29	2.1	2.2	2.5	4.1	4.5	3.9	2.7	2.8	2.7	3.4	2.9	2.1	35.9
Dodge City, Kans	37	45	100	00	22	0.4	0.6	0.9	1.8	3.1	3.3	3.2	2.6	1.3	1.3	0.5	0.6	19.8
Independence, Kans	37	13	95	41	25	1.6	2.0	2.2	3.7	4.6	4.9	4.2	3.0	3.7	2.7	1.8	2.3	36.7

TABLE XI.—NORMAL MONTHLY AND ANNUAL PRECIPITATION—Continued.

Stations.	Latitude.	Longitude.	Years of record.	Precipitation in inches. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
	° ′	° ′														
DRAINAGE BASIN OF THE RED.																
Washington, Ark	33 34	93 41	27	4.8	4.7	5.6	6.0	5.2	3.9	4.7	3.9	3.1	3.6	4.9	4.4	54.8
Fort Sill, Ind. T	34 40	98 23	24	1.2	1.2	1.5	2.7	4.4	3.7	2.9	3.2	2.8	2.7	1.5	1.9	29.7
Shreveport, La	32 30	93 40	25	4.7	4.2	4.6	5.2	4.2	3.7	3.4	2.1	3.7	3.2	4.7	4.5	48.2
Fort Elliott, Tex	35 30	100 21	11	0.6	0.5	0.6	2.6	4.4	3.2	2.3	3.3	1.8	2.5	0.6	0.7	23.1
CENTRAL VALLEY.																
Helena, Ark	34 33	90 36	20	6.1	5.2	6.6	6.7	4.5	4.7	4.5	3.5	3.9	2.4	4.8	4.6	57.5
Mattoon, Ill	39 29	88 24	15	2.5	3.8	3.4	4.2	5.0	4.8	3.9	3.4	2.9	2.8	3.4	2.7	42.8
Baton Rouge, La	30 25	91 05	24	5.1	4.6	5.0	4.7	4.5	5.0	6.3	5.9	4.2	3.2	5.5	5.6	59.6
New Orleans, La	29 58	90 04	26	5.1	4.4	5.3	5.2	4.8	6.7	6.4	6.0	4.6	3.3	4.1	4.4	60.3
Brookhaven, Miss	31 34	90 29	12	4.9	5.6	6.7	6.9	4.6	5.6	5.7	5.6	3.7	2.5	4.1	5.0	60.9
Vicksburg, Miss	32 23	90 50	42	5.3	4.9	5.5	5.3	4.4	3.9	4.5	3.4	3.3	2.6	4.7	4.9	52.7
Memphis, Tenn	35 09	90 03	26	5.5	5.2	5.9	5.4	4.4	4.6	3.4	3.5	3.1	2.7	4.8	4.1	52.6
DRAINAGE TO THE ATLANTIC OCEAN.																
Hartford, Conn	41 25	72 40	27	4.3	4.0	4.2	3.0	3.6	3.0	4.1	4.6	3.2	3.9	3.8	3.6	45.3
New Haven, Conn	41 18	72 56	45	3.8	4.0	3.8	3.3	3.9	3.1	4.5	4.6	3.8	3.8	3.8	3.4	45.8
Washington, D. C	38 54	77 03	41	3.4	3.1	3.9	3.4	4.1	3.9	4.5	4.0	3.5	3.3	2.7	3.1	42.9
Jacksonville, Fla	30 20	81 39	27	3.1	3.0	3.6	2.7	3.8	6.1	6.2	6.7	8.2	5.2	2.7	2.8	54.1
Augusta, Ga	33 28	81 54	27	4.5	4.0	5.1	3.4	3.4	4.6	5.4	5.0	3.7	2.5	3.0	3.4	48.0
Savannah, Ga	32 05	81 05	48	3.1	2.8	3.7	2.7	3.8	5.8	6.6	7.8	5.2	3.0	2.0	3.5	50.0
Gardiner, Me	44 14	69 48	53	3.6	3.5	3.9	3.4	3.8	3.2	3.2	3.6	3.2	4.1	4.0	3.8	43.3
Baltimore, Md	39 18	76 37	25	3.3	3.5	4.1	3.4	3.8	4.0	4.7	4.0	3.9	2.9	3.0	3.0	43.6
Cumberland, Md	39 39	78 45	24	2.1	2.6	2.9	2.5	3.4	3.8	3.4	3.2	2.8	2.3	2.2	2.1	33.3
Boston, Mass	42 21	71 04	79	3.8	3.5	4.1	3.8	3.7	3.2	3.6	4.3	3.4	3.8	4.3	3.9	45.4
New Bedford, Mass	41 39	70 56	83	3.7	3.6	4.0	3.6	3.8	3.0	3.1	3.9	3.3	3.7	4.0	3.8	43.5
Springfield, Mass	42 08	72 35	47	3.5	3.5	3.5	3.2	4.2	3.8	4.5	4.5	3.4	4.2	3.8	3.5	45.6
Concord, N. H	43 12	71 33	42	3.1	2.8	3.1	2.8	3.3	3.1	3.7	3.9	3.4	4.1	3.5	3.0	39.8
Strafford, N. H	43 52	72 25	24	3.4	2.9	3.3	2.5	3.3	3.5	4.1	3.7	3.4	3.1	3.4	3.2	39.8
Atlantic City, N. J	39 22	74 25	22	3.6	3.3	3.8	3.3	3.1	3.0	3.5	4.3	3.2	3.2	3.3	3.5	41.1
New Brunswick, N. J	40 30	74 27	43	3.8	3.6	3.8	3.7	3.9	3.9	4.7	4.9	3.8	3.4	3.7	3.5	46.7
Albany, N. Y	42 39	73 45	69	2.7	2.5	2.8	2.8	3.6	4.1	4.2	4.0	3.5	3.5	3.0	2.7	39.4
New York, N. Y	40 42	74 02	61	3.4	3.4	3.7	3.4	4.0	3.8	4.0	4.7	3.4	3.6	3.7	3.6	44.7
Utica, N. Y	43 05	75 13	40	3.1	2.9	2.9	2.7	3.5	4.3	4.7	3.5	3.5	3.5	3.7	3.4	41.7
Charlotte, N. C	35 13	80 51	18	4.9	4.4	4.5	3.4	4.1	4.5	5.6	5.1	3.5	3.6	3.0	4.0	50.6
Hatteras, N. C	35 15	75 40	21	5.9	4.5	6.1	4.7	4.6	4.6	6.4	6.4	6.4	6.2	5.2	5.5	66.5
Lenoir, N. C	36 00	81 28	25	4.2	4.3	3.9	3.5	4.8	4.1	5.1	5.7	4.6	3.3	3.3	3.6	50.4
Weldon, N. C	36 24	77 30	23	3.8	3.3	4.0	3.4	4.6	4.0	5.1	5.3	4.0	3.8	2.4	3.4	47.1
Wilmington, N. C	34 14	77 57	26	3.8	3.3	3.9	2.9	4.2	5.7	7.1	7.3	6.3	3.8	2.4	3.0	53.7
Dyberry, Pa	41 38	75 18	23	3.0	2.8	3.0	2.5	3.4	3.1	4.6	3.8	2.8	3.3	3.1	2.8	38.2
Grampian Hills, Pa	40 54	78 42	23	3.8	3.6	3.7	3.5	4.4	4.2	4.8	4.1	3.4	2.9	3.0	3.7	45.1
Harrisburg, Pa	40 16	76 53	24	2.8	2.4	2.7	3.0	4.6	4.4	4.2	3.9	3.6	3.3	2.7	2.9	40.5
Philadelphia, Pa	39 57	75 09	72	3.2	3.1	3.4	3.4	3.8	3.8	4.0	4.3	3.5	3.2	3.3	3.3	42.3
Providence, R. I	41 49	71 24	65	4.1	3.8	4.1	3.7	3.8	3.3	3.3	4.2	3.2	3.8	4.2	3.9	45.4
Charleston, S. C	32 47	79 56	89	3.0	2.9	3.5	2.4	3.6	4.8	6.6	7.2	5.7	3.3	2.4	3.1	48.5
Kirkwood, S. C	34 17	80 33	32	3.3	3.2	3.9	3.1	3.6	3.9	5.2	5.3	3.9	2.5	2.5	3.5	43.9
Lunenburg, Vt	44 28	71 41	44	3.0	2.8	3.3	2.6	3.6	3.5	3.9	3.8	3.4	3.5	3.2	2.9	39.5
Birdsnest, Va	37 25	75 52	27	3.8	4.0	5.0	3.7	4.0	3.2	4.7	4.6	3.7	3.8	3.0	3.6	47.1
Lynchburg, Va	37 25	79 09	26	3.8	3.6	3.8	3.3	4.0	3.5	4.1	3.9	3.9	3.2	3.1	2.9	43.1
Norfolk, Va	36 51	76 17	26	3.8	3.8	4.6	4.3	4.2	4.4	5.8	6.3	4.7	3.9	3.1	3.6	52.5
Richmond, Va	37 32	77 26	17	3.3	3.8	3.8	3.8	4.1	3.4	4.8	5.0	3.8	3.4	2.6	3.4	45.2
DRAINAGE TO THE GULF OF MEXICO.																
Mobile, Ala	30 41	88 02	26	5.1	4.8	7.6	4.6	4.3	5.9	6.7	6.8	5.0	3.4	3.9	4.5	62.6
Montgomery, Ala	32 23	86 18	24	5.4	5.4	6.4	4.8	4.0	4.7	4.6	4.0	2.9	2.3	3.4	4.6	52.5
Cedar Keys, Fla	29 08	83 02	10	3.9	2.9	3.4	2.5	2.3	6.8	8.7	7.7	5.4	2.8	2.5	3.0	51.9
Fort Brook, Fla	28 00	82 28	24	2.5	2.8	3.0	1.9	2.9	7.6	9.8	9.5	6.2	2.4	2.0	2.3	52.9
Key West, Fla	24 33	81 49	49	2.1	1.6	1.6	1.2	2.9	4.5	3.8	5.0	6.6	5.0	2.0	1.9	38.2
Pensacola, Fla	30 25	87 13	16	4.7	3.9	5.5	3.5	3.3	5.4	6.7	8.4	4.8	3.3	3.8	3.9	57.2
Atlanta, Ga	33 45	84 23	33	5.2	5.1	5.7	4.2	3.6	4.1	3.9	4.5	3.7	2.2	3.7	4.5	50.4
Quitman, Ga	30 45	83 50	15	4.9	3.7	5.1	4.0	3.0	6.6	6.2	5.6	4.1	3.8	3.2	3.4	53.6
Columbus, Miss	33 31	88 28	33	5.4	5.8	6.3	5.8	3.6	4.1	4.7	4.2	3.4	2.2	4.6	5.0	55.1
Fort Stanton, N. Mex	33 29	105 38	19	0.6	0.8	1.0	0.6	1.0	1.7	3.2	3.8	2.1	1.4	0.8	1.0	18.0
Santa Fe, N. Mex	35 42	106 01	37	0.6	0.9	0.7	0.7	0.9	1.1	2.7	2.7	1.6	1.1	0.8	0.8	14.6
Austin, Tex	30 17	97 44	30	2.2	2.4	2.5	3.0	4.2	2.7	1.8	2.7	4.2	2.7	2.7	2.3	33.4
Corsicana, Tex	32 04	96 27	17	3.1	2.7	2.8	4.3	5.4	3.3	2.4	1.9	2.6	2.5	3.6	2.9	37.5
El Paso, Tex	31 47	106 30	33	0.4	0.5	0.3	0.1	0.3	0.5	1.6	1.9	1.6	0.8	0.5	0.4	8.9
Fort Concho, Tex	31 22	100 20	15	0.9	1.1	1.0	1.7	3.4	2.5	3.1	2.8	3.0	1.8	1.1	1.4	23.8
Fort Davis, Tex	30 38	103 56	20	0.5	0.4	0.4	0.6	1.0	1.7	3.3	3.8	3.0	1.4	0.5	0.4	17.0
Galveston, Tex	29 18	94 47	26	3.6	3.0	2.9	2.8	3.7	4.9	3.1	5.3	6.0	4.2	4.3	3.9	47.7
Rio Grande City, Tex	26 27	98 47	35	1.1	0.9	0.9	1.2	2.5	2.5	1.4	2.6	3.4	1.9	0.9	1.0	20.3
San Antonio, Tex	29 25	98 25	25	1.7	2.3	2.0	2.5	3.0	3.1	2.0	3.6	3.6	1.8	2.4	2.0	30.0

TABLE XI.—NORMAL MONTHLY AND ANNUAL PRECIPITATION—Continued.

DRAINAGE TO THE PACIFIC OCEAN.

Stations.	Latitude.		Longitude.		Years of record.	Precipitation in inches.												
						January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
	°	′	°	′														
Fort Bayard, N. Mex	32	46	108	30	20	0.7	1.1	0.5	0.4	0.3	0.6	3.2	2.7	1.8	1.1	0.7	0.8	13.9
Fort Wingate, N. Mex	35	29	107	45	30	1.1	1.6	1.0	0.9	0.5	0.6	2.4	2.3	1.3	1.1	0.7	1.0	14.5
Salt Lake City, Utah*	40	46	111	54	29	1.6	1.6	2.1	2.0	2.0	1.1	0.9	1.3	1.0	1.6	1.5	2.0	18.7

DRAINAGE TO THE GREAT LAKES.

Chicago, Ill	41	54	87	38	30	2.1	2.2	2.4	3.0	3.7	3.7	3.4	2.9	3.0	2.7	2.7	2.2	34.0
Alpena, Mich	45	05	83	30	23	2.5	2.0	2.0	2.2	3.5	3.7	2.9	3.5	3.8	3.8	2.8	2.5	35.2
Detroit, Mich	42	20	83	03	46	2.0	1.9	2.5	2.6	3.1	3.8	3.6	2.6	3.0	2.6	2.6	2.2	32.5
Grand Haven, Mich	43	05	86	13	25	2.5	2.1	2.3	2.6	3.4	3.8	2.8	2.7	3.6	3.2	3.0	2.6	34.6
Lansing, Mich	42	44	84	26	33	1.8	2.0	2.3	2.4	3.4	4.0	3.1	2.7	2.9	2.5	2.4	2.1	31.6
Marquette, Mich	46	34	87	24	33	2.1	1.9	1.9	2.3	2.9	3.4	2.9	2.9	3.6	3.1	2.8	2.4	32.2
Port Huron, Mich	43	00	82	26	21	2.1	2.4	2.6	2.1	3.4	3.5	2.4	2.6	2.6	2.8	2.8	2.3	31.6
Duluth, Minn	46	47	92	06	26	1.1	1.1	1.6	2.5	3.7	4.5	3.6	3.3	3.7	2.6	1.7	1.3	30.7
Moorhead, Minn.†	46	52	96	44	15	0.7	0.8	0.9	2.2	2.5	4.4	3.9	2.7	2.1	1.9	0.9	0.7	23.7
St. Vincent, Minn.†	48	56	97	14	24	0.5	0.5	0.8	1.5	2.5	3.9	2.6	2.6	1.7	1.8	0.5	0.6	19.5
Buffalo, N. Y	42	53	78	53	26	3.0	2.8	2.6	2.5	3.4	3.5	3.2	3.2	3.3	3.6	3.5	3.4	38.0
Ithaca, N. Y	42	27	76	30	36	2.0	1.9	2.3	2.2	3.4	3.7	3.5	3.0	3.0	2.9	2.6	2.2	32.7
North Hammond, N. Y	44	23	75	45	14	2.9	2.4	2.8	2.1	3.4	2.9	3.6	3.6	3.5	4.1	3.3	2.8	37.4
Oswego, N. Y	43	29	76	35	26	3.0	2.5	2.6	2.1	2.8	3.4	3.1	2.6	2.8	3.3	3.4	3.4	35.0
Plattsburg Barracks, N. Y	44	41	73	26	35	1.7	1.5	2.0	1.8	2.6	3.0	3.4	3.3	2.9	2.8	2.4	2.0	29.4
Rochester, N. Y	43	08	77	42	26	3.1	2.7	2.9	2.5	3.3	3.3	3.0	3.0	2.4	2.9	2.8	2.9	34.8
Cleveland, Ohio	41	30	81	27	41	2.5	2.6	2.7	2.7	3.5	3.9	3.4	3.1	3.6	2.8	3.1	2.7	36.6
Toledo, Ohio	41	40	83	34	25	2.1	2.1	2.1	2.2	3.4	3.4	3.1	2.7	2.4	2.4	2.9	2.4	31.2
Erie, Pa	42	07	80	05	22	3.3	3.4	2.7	2.5	3.8	3.9	2.8	3.3	4.0	4.1	4.1	3.2	41.1
Burlington, Vt	44	28	73	12	53	1.9	1.5	1.8	1.9	3.1	3.2	4.0	3.6	3.5	3.3	2.6	1.9	32.3
Embarrass, Wis	44	25	89	00	28	2.4	2.2	2.5	2.6	3.7	5.3	4.5	4.9	4.1	3.3	2.7	2.6	40.8
Milwaukee, Wis	43	02	87	54	53	1.9	1.6	2.3	2.8	3.4	3.8	3.2	2.7	3.0	2.2	2.2	1.9	31.0

* Drains into Great Salt Lake.

† Drains into Red River of the North.

41. The isohyetal charts.—In this table only records covering as much as twenty-five years, for the most part, are used. In some regions of considerable size, however, no lengthy records have been secured, and a few shorter ones are therefore included. These records, erroneous though they be, are of course the only source of information as to the true normal precipitation. We therefore use them, assuming that their departures from the truth will, in the aggregate, counterbalance each other. The tabular values are laid down on a map of the region covered and isohyetal lines drawn with due regard to the length of the various records and the agreement of each with those at surrounding stations. The precipitation chart so constructed is more accurate than the tabular values, and we may, perhaps, assume that the precipitation, as taken from this chart, is correct within 3 per cent. From what has been said it follows that the normal precipitation at any given point is more likely to be that shown on these charts than that given by an actual gauge record at the station.

42. Geographical distribution of precipitation.—The normal precipitation charts are instructive. Noting first the annual distribution of precipitation, as shown on Plate VII, it appears that the eastern slope of the Rocky Mountains, as far east as the one hundredth meridian, has a yearly precipitation of less than 20 inches. This region contains the sources of all the western tributaries of the Mississippi. Toward the east and south the precipitation increases, the center of heaviest downpour being near the mouth of the Mississippi, where the annual depth of precipitation slightly exceeds 60 inches. Along the Atlantic Coast the precipitation ranges from a little more than 40 inches in the north to something more than 50 in the south. Proceeding inland from the coast, the isohyetal lines drop rapidly southward as the Alleghanies are approached, again bending northward after the mountains are passed.

43. Seasonal changes in distribution.—Considering now the monthly charts, we find the heaviest downpour in January, amounting to 6 inches, at the southern extremity of the Alleghanies. During February and March this center of maximum precipitation moves southwest to the Gulf coast near Mobile, Ala. The monthly precipitation at this period is less than 1 inch over most of

the Rocky Mountain slope and the western plains. During April and May the center of maximum rainfall moves northwest, and the precipitation reaches its greatest value over the West, exceeding that of the winter months by about an inch. In June the rainy season is inaugurated on the Florida peninsula and the Gulf coast, where the monthly downpour is between 6 and 7 inches. At the same time a secondary center of rainfall is found in the lower Missouri Valley. In July the rainfall becomes still heavier over Florida and diminishes in the West. The conditions of August are very similar to those of July, except that the rainfall is more nearly uniform over a large extent of the central Mississippi Valley and the Northeast. The latter feature is still more prominent in September, the rainfall being heavy on the immediate coast of the south Atlantic and the Gulf of Mexico, while the remainder of the country east of the ninety-fifth meridian has a nearly uniform rainfall of 3 to 4 inches. The same peculiarity is also noticeable in October, as well as a marked diminution of rainfall in the Southeast. In November the winter condition reappears, with light precipitation in the West and the heaviest downpour in the lower valley of the Mississippi. This condition becomes more intense in December, the monthly precipitation exceeding 5 inches in southern Mississippi.

NORMAL PRECIPITATION ON THE WATERSHEDS.

44. Method of its computation.—The logical process for finding the average precipitation over any watershed would be by planimetric measurements from the precipitation charts. Very nearly the same results, however, can be more easily obtained by determining the average precipitation over each of the small divisions, into which the whole Mississippi Basin has been divided on the drainage map, Pl. IV, by a combination of the stations in and about the region considered. In the tables which were given in Section I, the ratio of the area of these small divisions to the larger basin of which it is a part has been given. If the precipitation over each small division be multiplied by this ratio and the various products added together, the result will be the average precipitation for the entire basin. By this process the error resulting from an unequal distribution of stations is almost wholly avoided, and the only faulty part of the procedure lies in the fact that the precipitation may be inaccurately determined for some of the small divisions. Following the method outlined above, we deduce the values of normal precipitation on the various watersheds, which are set forth in Table XII. It is not deemed necessary to give in detail the various combinations of stations from which the precipitation over the various drainage areas is determined. The station records have already been given in full in Table XI, and anyone can readily test the accuracy of the computation in any case.

TABLE XII.—NORMAL PRECIPITATION IN RIVER BASINS.

Basin.	Subdivision.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Ohio	A	3.3	3.2	3.1	3.0	3.8	4.0	4.0	3.6	3.3	3.2	3.2	3.4	41.1
	B	3.0	3.0	3.1	3.2	3.7	3.9	4.0	3.7	3.4	2.9	2.8	2.9	39.5
	C	3.6	3.4	3.7	3.4	3.7	4.1	4.2	3.6	3.1	2.7	3.1	3.2	41.6
	D	3.8	3.9	4.2	4.0	4.0	4.3	4.1	3.6	2.8	2.7	3.9	3.6	45.0
	E	3.1	3.4	3.8	3.8	4.5	4.6	4.0	3.4	3.0	2.8	3.5	3.2	43.2
	F	4.5	4.5	4.8	4.4	4.0	4.2	4.2	3.6	2.9	2.6	4.0	3.5	47.3
	G	4.8	4.8	4.8	4.4	4.0	4.3	4.5	4.1	3.5	2.8	3.8	3.8	49.6
	Entire basin	3.8	3.8	4.0	3.8	4.0	4.2	4.2	3.7	3.2	2.8	3.5	3.4	44.2
Upper Mississippi	A	0.9	0.9	1.4	2.4	3.3	4.2	3.6	3.2	3.1	1.9	1.4	1.1	27.5
	B	1.6	1.5	2.1	2.7	3.7	4.4	3.8	3.3	3.5	2.5	2.0	1.8	32.8
	C	1.5	1.4	2.1	2.9	4.0	4.7	4.2	3.3	3.6	2.6	1.9	1.8	33.7
	D	2.0	2.4	2.7	3.3	4.2	4.3	3.7	3.4	3.2	2.6	2.6	2.2	36.7
	Entire basin	1.4	1.4	1.8	2.8	3.7	4.4	3.8	3.3	3.3	2.3	1.9	1.6	31.9

TABLE XII.—NORMAL PRECIPITATION IN RIVER BASINS—Continued.

Basin.	Subdivision.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Missouri	A	0.8	0.5	0.6	1.1	2.1	2.8	1.6	1.1	1.0	0.8	0.6	0.6	13.6
	B	0.6	0.5	1.0	1.7	2.6	2.4	1.4	1.1	0.8	0.9	0.6	0.6	14.3
	C	0.7	0.5	1.0	2.1	2.8	3.2	2.0	1.6	0.9	0.9	0.7	0.6	17.0
	D	0.6	0.6	1.3	2.7	3.4	3.6	2.7	2.2	1.4	1.0	0.6	0.6	20.6
	E	0.6	0.7	1.1	2.8	3.3	4.2	3.5	2.7	2.1	1.6	0.8	0.7	24.1
	F	0.6	0.5	1.1	2.2	3.0	2.5	2.2	1.7	1.4	1.1	0.6	0.6	17.3
	G	0.5	0.7	0.9	2.1	3.4	3.5	3.4	2.8	1.8	1.2	0.6	0.6	21.7
	H	1.6	1.9	2.4	3.5	4.6	4.9	4.4	3.6	3.3	2.5	2.0	1.8	36.6
	Entire basin	0.7	0.7	1.1	2.1	3.0	3.2	2.4	1.9	1.5	1.2	0.8	0.7	19.4
Arkansas	A	0.6	0.8	1.1	2.0	3.0	2.9	3.0	2.4	1.7	1.3	0.7	1.0	20.4
	B	0.9	1.0	1.1	2.2	3.2	2.8	2.6	2.7	1.8	1.9	1.1	1.1	22.3
	C	1.8	2.1	2.4	3.9	4.6	4.4	3.4	2.9	3.2	3.0	2.4	2.2	36.3
	D	3.6	3.9	4.3	5.0	5.2	4.4	4.3	3.7	3.4	2.8	3.8	3.5	48.0
	Entire basin	1.6	1.8	2.0	3.0	3.8	3.4	3.2	2.9	2.3	2.1	1.8	1.8	29.6
Red	A	0.9	0.9	1.1	2.6	4.4	3.4	2.6	3.2	2.3	2.6	1.1	1.3	26.4
	B	4.9	4.8	5.2	5.3	4.9	4.0	4.2	3.4	3.3	3.0	4.9	4.5	52.4
	Entire basin	2.9	2.8	3.1	3.9	4.6	3.7	3.4	3.3	2.8	2.8	2.9	2.9	39.1
Central Valley.	A	2.6	3.3	3.5	4.2	4.7	4.6	4.0	3.3	3.0	2.6	3.2	2.8	41.9
	B	4.5	4.6	5.1	5.0	4.8	4.6	4.1	3.6	3.4	2.8	4.4	4.0	51.0
	C	4.6	4.6	4.8	4.6	4.2	4.5	3.4	3.2	2.8	2.7	4.5	3.6	47.6
	D	5.6	5.3	6.1	5.8	4.2	4.3	4.3	3.6	3.4	2.5	4.7	4.6	54.5
	E	5.2	5.2	5.9	5.7	4.3	4.6	5.3	4.8	3.6	2.6	4.7	5.1	57.1
	F	5.1	4.5	5.2	5.0	4.6	5.8	6.4	6.0	4.4	3.2	4.8	5.0	60.0
	Entire basin	4.5	4.5	5.0	5.0	4.5	4.7	4.5	4.0	3.4	2.8	4.5	4.1	51.4
Entire Mississippi Basin		1.8	1.8	2.2	2.9	3.6	3.7	3.2	2.7	2.3	1.9	1.9	1.8	29.8

NOTE.—It will be noted that the sum of the 12 monthly values for some districts in the above table does not agree exactly with the annual value. This arises from the fact that the latter has been computed from the annual values of Table XI by the same process by which each monthly value has been computed from the corresponding monthly values of that table.

45. Average precipitation on the various watersheds.—It is seen, from an examination of the above table, that the Missouri Basin receives the least downpour, 19.4 inches, in the year, and the Central Valley the greatest, 51.4 inches, among the six grand divisions of the Mississippi drainage basin. The average precipitation of the whole basin is about 30 inches per annum, being lightest in winter and heaviest about the first of June; the ratio of summer to winter downpour is very closely 2 to 1. As to the distribution of precipitation during the year, the Mississippi Basin may be divided into two parts. The southeastern third is marked by a fairly uniform and abundant downpour throughout the year. This section embraces all of the Ohio Basin and the Central Valley, the southeastern part of the Upper Mississippi Basin, a small part of the Lower Missouri Basin, and the Lower Arkansas and Red basins. The remaining two-thirds of the Mississippi Basin has a very deficient precipitation during the four months from November to February, inclusive, followed by a rapidly increasing downpour, until a well-defined maximum is attained in May or June. The difference in the amount of summer and winter precipitation over this area is very great, the former being five or six times the latter in some districts.

NORMAL DOWNFALL OF WATER.

46. Downfall in the six chief divisions of the Mississippi Basin.—Having determined the areas of the component basins and the normal precipitation over each, it is a simple computation to find the corresponding downfall of water. In the following table this is given for the six grand divisions of the Mississippi Basin for each month and for the year, as computed from the data of Tables I and XII. The amount of downfall is stated in units of 10,000,000 of cubic yards.

TABLE XIII.—NORMAL MONTHLY AND ANNUAL DOWNFALL IN RIVER BASINS.

[Unit of 10,000,000 cubic yards.]

Basin.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Ohio	6,595	6,595	6,942	6,595	6,942	7,289	7,289	6,421	5,554	4,860	6,074	5,901	76,710
Upper Mississippi	1,998	1,998	2,570	3,997	5,282	6,281	5,424	4,711	4,711	3,283	2,712	2,284	45,537
Missouri	3,175	3,175	4,989	9,525	13,608	14,515	10,886	8,618	6,804	5,443	3,629	3,175	87,995
Arkansas	2,565	2,885	3,206	4,809	6,091	5,450	5,130	4,649	3,687	3,366	2,885	2,886	47,449
Red	2,246	2,168	2,401	3,020	3,562	2,865	2,633	2,556	2,168	2,168	2,246	2,246	30,279
Central Valley	2,672	2,672	2,968	2,968	2,672	2,790	2,672	2,375	2,019	1,662	2,672	2,434	30,517
Total	19,251	19,493	23,076	30,914	38,157	39,190	34,034	29,330	24,943	20,782	20,218	18,926	318,487

NOTE.—In this table, as in Table XII, the annual values have been computed from the annual values of the preceding table, and hence are not, as a rule, exactly equal to the sums of the monthly values. The result secured by this process is slightly more accurate than by summing the months.

NORMAL DISCHARGE OF THE RIVERS.

47. Determination of discharge.—The only accurate method of ascertaining the volume of water which passes a given point on a river is by the direct measurement of the cross section and velocity of the current. The cross section in square feet, multiplied by the mean velocity in feet, will obviously give the volume of discharge in cubic feet. The velocity, however, varies greatly in different portions of the cross section, this variation following a certain law, which was carefully investigated by Humphreys and Abbot. It is plain that the cross section can be stated in terms of the height of the water surface; that is to say, in terms of the river stage as shown by gauge. The velocity, however, is not capable of similar correlation to the stage of river, but also depends upon the local slope of the water surface. The contention was made by Humphreys and Abbot that in the average of a year, or from beginning to end of a flood, covering both the rising and falling stages of the river, the velocity, as well as the cross section, would bear a fixed relation to the stage, and hence that from the average annual stand of the river, the volume of its discharge could be inferred, after the necessary measurements had been made once for all. Much doubt has been cast upon this proposition by subsequent investigations, and no satisfactory connection between the stage and the discharge has been determined as yet.

48. Available data.—A great deal of work has been expended on discharge measurements since the initiative by Humphreys and Abbot, but, so far as ascertained, no full discussion has been made of the various series of observations, and the normal discharges of the component basins remain to-day largely a subject of conjecture and estimate. Humphreys and Abbot, by actual daily measurements for a year, determined the discharge of the Mississippi, both above the mouth of the Red and below the effluent bayous. By a comparison of the simultaneous gauge readings, made during the year, with the discharge measurements, the average relation of stage and discharge was determined. Then, from a long series of gauge readings made at the same points, the normal discharge of the river was computed and found to be *practically the same above the mouth of the Red and below the outlet bayous.* From this it appears that the discharge of the Red was equivalent to that of the bayous. The discharge of the latter was also measured. One of these outlet bayous, the Plaquemine, has since been closed, and hence the discharge of the Mississippi at its mouth, as determined at that time, should now be increased by the former discharge of Bayou Plaquemine. The discharge of the Arkansas was also subjected to direct measurement by Humphreys and Abbot. From a consideration of the rainfall in connection with discharge measurements made on the Upper Mississippi, above St. Paul, and a comparison of the character of this portion with the remainder of the Upper Mississippi Basin, Mr. James L. Greenleaf, of the Mississippi River Commission, has estimated* that in this basin 27.5 per cent of the downfall is discharged.

* Section on Hydrology in report on the water power of the Mississippi River, Tenth Census.

49. Computation of normal discharge.—The data above enumerated forms the basis from which to estimate the normal discharge of the six grand divisions of the Mississippi Basin. We have by direct determinations of more or less accuracy the discharge of the Mississippi at its mouth, of the Red and Arkansas rivers, and outlet bayous. The total discharge from the basin will be that of the Mississippi proper, increased by that of bayous Atchafalaya and La Fourche. From the known discharge and downfall of the Arkansas Basin we find their ratio to be 0.156. Humpheys and Abbot, and also Greenleaf, assumed, from their physical similarity, that the ratio of discharge to downfall would be the same in the Arkansas and Missouri basins. The latter is decidedly the drier, and it is reasonable to suppose that the ratio will be rather less than greater. We may, perhaps, assume the discharge to be 15 per cent of the downfall, which is the value employed by Humphreys and Abbot. Adopting Greenleaf's estimate of 0.275 as the ratio for the Upper Mississippi, and 0.300 for the Ohio Basin, we can compute, from the downfalls given in Table XIII, the discharge from each of the six divisions, except the Central Valley. As the total discharge from the basin is known, we readily compute that of the Central Valley by simple subtraction. Pursuing this method we obtain the data of the following table:

TABLE XIV.—NORMAL ANNUAL DISCHARGE FROM RIVER BASINS.

Basin.	Annual discharge in cubic yards.	Ratio of discharge to downfall.
Ohio	230, 130, 000, 000	0. 300
Upper Mississippi	125, 230, 000, 000	0. 275
Missouri	131, 990, 000, 000	0. 150
Arkansas	74, 070, 000, 000	0. 156
Red	66, 670, 000, 000	0. 220
Central Valley	157, 100, 000, 000	0. 515
Mississippi above the Red	718, 520, 000, 000	
Mississippi at its mouth	724, 360, 000, 000	
Bayous Atchafalaya and La Fourche	60, 830, 000, 000	
Total discharge from Mississippi Basin	785, 190, 000, 000	0. 247

50. Remarks upon the computed discharges.—The process followed in computing this table differs from that pursued by Humphreys and Abbot, and the results differ essentially. It was assumed by those investigators that the discharge in the districts which we have included under the designation of Central Valley was 90 per cent of the downfall, but, as pointed out by Greenleaf, there is reason for thinking this too high. Their method, indeed, was to assign first the discharge for all the basins except the Ohio and Upper Mississippi and, assuming the ratio of discharge to downfall the same in each of the latter, to divide the residual discharge between them. Subsequent investigations, however, have established the ratio of discharge to downfall in these basins more accurately than in the Central Valley, and the process followed here has been to first assign the discharge of basins other than the Central Valley, leaving the residual to that region. This leads to the conclusion that the discharge in the latter section is about 52 per cent of the downfall. The Central Valley includes about 30,000 square miles of swamp land and 39,000 square miles of upland; the ratio over the former is doubtless much greater and over the latter much less than this average.

51. Differences in normal drainage.—Assuming, as we probably may, that the figures of Table XIV fairly represent the annual discharges from the various basins, we see that the Ohio Basin and the Central Valley, together, furnish nearly one-half of the total discharge of the Mississippi, although in area they form but 22 per cent of its basin. The discharge from each of these drainage areas largely exceeds that from the great Missouri Basin. It is obvious that the size of a river basin does not measure its hydrological importance. In addition to its size must be considered the *downpour of rain* over it and the *ratio of its discharge to downfall.* Of the downfall of water over the Mississippi drainage basin there is discharged to the sea on an average 25 per cent; the remaining 75 per cent must be ultimately returned to the clouds, although a considerable part is first incorporated into vegetable growth. The relation is seen to be a very variable one in different

localities, and doubtless also varies with the season. Under conditions of great aridity the drainage will be *nil*, and under those of the highest humidity may probably reach 95 per cent of the downfall over a considerable region.

NORMAL RIVER STAGES.

52. *Measurement of the stage of a river.*—By the stage of a river is meant simply the height of the water surface at a given point above (or below) a fixed plane of reference. There is no natural plane of reference, unless that corresponding to the normal annual stage might be so considered. In point of fact the plane of reference is an arbitrary one, selected as accurately as may be at the level of lowest known water. In few cases does the reference plane coincide with the level of extreme low water with close accuracy. Having selected the plane of reference, the vertical distance in feet and tenths of a foot above this plane is indicated on a vertical or slanting surface washed by the river, or, in some instances, the relation of water surface to plane of reference is determined by measuring from an elevated point upon a bridge to the river surface, the height of the bridge above the reference plane being known.

53. *Value of river stage measurements.*—Although, as already pointed out, it is impossible at the present time to deduce the flow of water past the station from the stage of the river, yet the stage in itself is of value. It indicates the danger of overflow in the adjacent portion of the river. The stage at which injury begins depends, of course, on the character of the banks and adjacent lands. The corresponding height on the river gauge is called the danger line. Indeed it is obvious that the danger at a given place arises directly from the height of a river without regard to the volume of its flow. The stage may therefore be itself made a subject of study, and may be regarded as an index to the state of the river, all important in the immediate locality, and somewhat less important than the discharge for lower points on the river. The record of river stages is happily of considerable extent, covering more than a quarter of a century at many stations, and affords the means of computing normal values throughout the year at several points on the Mississippi and its tributaries.

54. *Stations selected for study.*—Eleven stations have been selected, and normal data computed for them, the latter taken chiefly from the published stages of the Mississippi River Commission. On the Mississippi, Keokuk is taken to represent the regimen of the Upper Mississippi; the lower river is represented by St. Louis below the mouth of the Missouri, Cairo at the mouth of the Ohio, Memphis at the head of the Yazoo bottom, Vicksburg below the confluence of the Arkansas and at the mouth of the Yazoo, and Carrollton, a suburb of New Orleans, below all the tributaries and the outlet bayous. The Tennessee, which is the chief tributary of the Ohio, enters the latter so near its mouth that any station below it will be affected by very high water in the Mississippi at Cairo, and hence Cincinnati, on the Ohio, and Johnsonville, on the Tennessee, are both taken to represent the conditions in the Ohio Basin. The regimen of the Missouri is well shown by the observations at Hermann. On the Arkansas, Little Rock is selected, and on the Red, Shreveport.

55. *Method of computing normals.*—The daily gauge readings at these stations have been first added in pentads from the first day of each month, the incomplete pentad in February being summed by itself, and the last six days of the months of thirty-one days being combined. The resultant sums have been obtained for these periods throughout the whole series of years in the record, and then divided by the corresponding number of days included. Any given quotient is taken as the normal stage for the middle of the period covered. The normal stages, as first obtained, are referred to the arbitrary zero planes of the various gauges. Corrections are finally applied to each station record in order to reduce its stages to the plane of lowest known water. The values so corrected and plotted on cross-section paper give the normal hydrographs of Plate VI.

56. *Normal regimen of the rivers.*—An examination of these hydrographs discloses in the Upper Mississippi, at Keokuk, a single swell in the year, reaching its height about May 9, and then falling steadily to the latter part of August. From the latter date to the end of January, a period of more than five months, the river is at practically the same low level. The annual rise then begins, continuing to the May crest.

In the Missouri, at Hermann, a swell appears after the minimum, which occurs about December 20, and obtains a minor maximum toward the end of April. The river then falls slightly to the middle of May, after which it rises rapidly to its highest point about June 29. From the June maximum to the December minimum there is a continuous fall, most rapid at first.

The Mississippi below the mouth of the Missouri, at St. Louis, shows the effect of the earlier rise in the Upper Mississippi, and the later one in the Missouri, by a much longer period of high water, with two crests. The river is at a low stage from early in September to the end of January, while the lowest water occurs in the middle of December. From the beginning of February to the end of April the river rises rapidly. This high water lasts to the middle of May, and is succeeded by a slight fall and a subsequent second rise to a high stage during the latter half of June. The river is thus in flood for over two months. From the first week in July there is a steady and rapid fall to the low water of September.

The regimen of the Ohio is shown by the hydrographs for the main stream at Cincinnati, and the Tennessee at Johnsonville. These curves are much more irregular than those already considered, a fact probably due to the disturbing effect of the great floods of this region, for the record at Cincinnati is the longest we have, thirty-nine years. There is seen to be a single annual oscillation, upon which, in our curves, are superimposed many small fluctuations, probably adventitious. The lowest stage is reached two months earlier than in the Missiouri River, and about the middle of October. By the 1st of November a sharp rise sets in and continues to the latter part of January without interruption. There is then a slight falling off, the rise being resumed at the beginning of February. On our hydrographs the highest stage is reached on February 20 at Cincinnati, and on March 24 at Johnsonville, but the curves, as already remarked, are irregular, and probably the normal maximum occurs about March 10. The water remains high to the middle of April, after which a rapid fall sets in, and by the 1st of August very low stages are reached.

The early rise of the Ohio, and those following later in the Upper Mississippi and Missouri, produces in the Mississippi at Cairo a main swell, which reaches its height about April 15. This is preceded by a slight rise at the end of February, perhaps due to the melting snow, and its decline is checked during June by the Missouri rise. Except for the stationary stage during June, the fall is steady from the highest stage on April 15 to the lowest on October 20, occupying almost exactly six months. The reversal of its course is sudden, and it moves steadily upward from October 20 to April 15, following the regimen of the Ohio. The stages at Memphis are a duplication of those at Cairo, except that the curve is smoother and its maximum and minimum are found about four days later. The retardation in the fall of the river during June is much less marked.

In the hydrographs of the Arkansas River, at Little Rock, we have another curve of great irregularity, the reason for which is not clear. The river is seen to be practically at its lowest stage from the middle of August to the middle of November. A gradual swell then commences and attains its maximum about May 4. For a month the river remains at nearly the same stage and then declines slowly to its autumn minimum, the annual range being about 8 feet.

Little effect is produced on the Mississippi by the normal discharge of the Arkansas. The hydrograph at Vicksburg closely resembles that at Memphis, but is much more smooth in its sweep. Its single annual maximum is attained about April 30, and from that time a steady fall takes place until October 29. The stationary period, observed in June at Cairo and Memphis, is barely apparent, as a slight flexure in the curve. The annual range is about 35 feet.

The regimen of the Red River, as shown by the hydrograph at Shreveport, is similar to that of the Arkansas, the highest stage occurring about May 18 and the lowest about September 26. The annual range, however, is much greater. Its discharge apparently produces no effect on the Mississippi. At Carrollton, within 116 miles of its mouth, the annual oscillation of the Mississippi is a long, steady rise of six months' duration and a corresponding fall. The June rise is here apparent only as a slight diminution in the rate of fall.

57. Mean and extreme river stages.—The date and height of mean high and low water are most accurately obtained from the charted hydrographs, and their difference gives the mean annual range of the river. From the original records are computed the mean annual stage, and from the

same source we obtain the date and stage of highest and lowest known water. When the river *stages are referred to lowest water, the highest water necessarily indicates the absolute range in river height. The above data, together with the length of record and established height of danger line,* are given in the following table for our 11 selected stations:

TABLE XV.—NORMAL AND EXTREME RIVER STAGES, REFERRED TO THE PLANE OF LOWEST WATER.

Station.	River.	Length of record.	Mean high water.		Mean low water.		Mean stage.	Mean annual range.	Date of lowest water.	Highest water.		Height of danger line.	
			Date.	Stage.	Date.	Stage.				Date.	Stage.	Above extreme low water.	Above zero of present gauge.
		Yrs.		*Feet.*		*Feet.*	*Feet.*	*Feet.*			*Feet.*	*Feet.*	*Feet.*
St. Louis, Mo	Lower Mississippi.	36	June 30	20.9	Dec. 9	* 7.1	13.3	13.8	Jan. 27, 1895	June 28, 1844	42.1	30.7	30
Cairo, Ill	do	26	Apr. 15	36.9	Oct. 30	8.0	22.2	28.9	Dec. 24, 1871	Feb. 27, 1883	53.2	41.0	40
Memphis, Tenn	do	26	Apr. 19	30.4	Oct. 23	6.7	18.1	23.7	Nov. 9, 1895	Mar. 19–21, 1897	39.8	35.7	33
Vicksburg, Miss	do	24	Apr. 30	46.3	Oct. 27	11.6	29.4	34.7	Nov. 13–14, 1895	Apr. 16, 1897	58.6	47.3	41
Carrollton, La	do	25	Apr. 28	13.9	Oct. 29	2.8	8.1	11.1	Dec. 27, 1872	May 7–14, 1897	20.6	14.6	13
Johnsonville, Tenn	Tennessee	18	Mar. 24	21.1	Oct. 18	2.4	9.3	18.7	Oct. 20–21, 1876	Mar. 24, 1897	48.1	21.1	21
Cincinnati, Ohio	Ohio	39	Feb. 20	30.7	Oct. 12	† 5.4	15.4	25.3	Sept. 18, 1881	Feb. 14, 1884	69.2	43.1	45
Keokuk, Iowa	Upper Mississippi.	27	May 9	12.2	Dec. 5	4.3	7.0	7.8	Nov. 30, 1893	June 6, 1851	22.9	15.9	14
Hermann, Mo	Missouri	22	June 29	17.4	Dec. 20	6.1	10.9	11.3	Dec. 21–22, 1878	June 23, 1883	29.5	25.1	21
Little Rock, Ark	Arkansas	25	May 4	13.8	Oct. 15	‡ 5.6	9.3	8.2	Oct. 23–24, 1879	May 21, 1892	32.2	24.0	23
Shreveport, La	Red	24	May 18	25.7	Sept. 26	9.4	17.8	16.3	Dec. 2–4, 1894	May 28, 1892	41.2	34.5	29

* The same stage practically continues to December 23. † The same stage is reached on September 9 and October 24.
‡ Almost the same stage continues to November 5.

From the pentad means already computed, we readily deduce the normal monthly river stages of the following table, which may prove of utility:

TABLE XVI.—NORMAL MONTHLY RIVER STAGES, REFERRED TO THE PLANE OF LOWEST WATER.

Station.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
St. Louis, Mo	8.8	10.5	14.6	19.3	20.2	20.2	18.5	12.7	9.9	9.1	8.8	7.2
Cairo, Ill	23.3	30.7	34.2	36.0	29.8	26.2	23.0	15.1	11.1	8.7	12.3	15.9
Memphis, Tenn	18.6	23.8	27.5	29.5	25.4	21.7	19.2	12.9	9.3	7.3	9.3	12.4
Vicksburg, Miss	27.6	36.4	42.4	45.4	43.3	37.9	33.5	23.0	16.0	12.9	14.6	19.3
Carrollton, La	6.5	10.3	12.4	13.7	13.2	11.4	9.2	5.5	3.9	3.2	3.2	4.6
Johnsonville, Tenn	13.9	18.5	19.5	17.7	9.0	6.7	4.7	3.5	3.7	2.7	4.4	6.9
Cincinnati, Ohio	21.7	26.3	26.5	25.0	18.0	12.4	9.0	7.5	6.5	6.0	10.3	15.9
Keokuk, Iowa	5.8	5.6	7.7	10.4	11.5	9.9	8.1	5.0	5.1	5.4	4.9	4.7
Hermann, Mo	7.7	9.5	11.1	14.0	13.9	16.2	15.5	11.7	9.4	7.7	7.4	6.6
Little Rock, Ark	9.1	11.2	11.6	11.7	13.2	11.8	9.4	7.3	6.3	6.0	6.3	7.7
Shreveport, La	19.0	22.2	24.4	23.7	24.5	22.0	17.5	13.0	9.9	10.1	11.9	14.9

SECTION III.

THE RIVER IN FLOOD.

Constant liability to flood in the alluvial regions—Notable floods—Floods since 1870—Frequency and duration of floods—Chief floods of the past quarter century—Six floods selected for study—Precipitation in the six floods—Downfall in the six floods—Flood of 1882: Its two swells—The downfall which caused it—Origin of the flood—Flood of 1883: Its single great rise—The accompanying precipitation—Flood of 1884: Its main features—Distribution of rainfall—Flood of 1890: The rise in three swells—Origin of the flood—Flood of 1893: A summer flood—The source of it—Flood of 1897: Its chief features—The rainfall and probable drainage—Source of the flood—Relative importance of these six floods—Cause of Mississippi floods.

As the greater and more fertile portion of the lands bordering the Mississippi from Cape Girardeau to the Gulf is below the high-water level of the river, the history of damage from the overflow of the Mississippi begins with the first settlement of the valley. The first permanent establishment of Europeans on the Lower Mississippi was at Natchez and New Orleans. The former town was built on the bluff above danger of flood, but the initial plans for New Orleans, in 1717, provided for a levee in front of it. Ever since that time there has been a constant struggle to keep back the floods of the river from the towns and plantations along its banks. Nearly every year some portion of the valley is inundated, but the notable floods occur at longer intervals. The great floods of the past were made a special subject of inquiry by Humphreys and Abbot, who collected data for all known floods up to that of 1859. The record has been continued to 1874 by Abbot in the report of the special commission of engineers authorized by Congress in 1874 "to investigate and report a permanent plan for the reclamation of the alluvial basin of the Mississippi River subject to inundation." Since that time the stage of river has been recorded daily at many points.

FLOODS OF THIS CENTURY.

58. *Notable floods.*—Prior to 1798 little is known, except by tradition, as to the occurrence of floods. The notable floods of this century up to 1870 are those of 1815, 1828, 1844, 1849, 1850, 1851, 1858, 1859, 1862, 1865, and 1867. Of floods subsequent to that of 1867 there are abundant gauge readings; the years in which notable floods occurred during this time are 1874, 1882, 1884, 1890, 1893, and 1897. The flood of 1858 was made the subject of careful measurement by the Delta Survey, and has served ever since as the standard of comparison. It was long thought to represent the full possibility of danger from flood, but its high-water marks were far exceeded by the flood of the present year. A comparative table of flood heights for the notable floods from 1828 was worked out by Humphreys and Abbot, and was subsequently brought down to 1874 by Abbot in the report referred to above. In the following table this comparison has been extended to include the flood of this year. The plane of reference is the flood level of 1858. A plus sign indicates that the flood in question exceeded that of 1858, and a minus sign that it fell short of this height.

TABLE XVII.—FLOOD HEIGHTS FOR GREAT FLOODS FROM 1828, REFERRED TO THE FLOOD LEVEL OF 1858.

Station.	1828.	1844.	1849.	1850.	1851.	1858.	1859.	1862.
	Feet.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Cairo, Ill	.....	.....	.....	.....	.....	0.0	−3.1	+1.2
Memphis, Tenn	−1.3	−1.0	−3.3	−0.6	−1.0	0.0	−0.1	+0.5
Helena, Ark	−1.5	−2.4	−1.8	−1.8	−4.8	0.0	−1.0	+1.8
Vicksburg, Miss	−0.6	−0.8	−0.6	+0.1	.....	0.0	+1.3	+2.2
Natchez, Miss	+0.7	+0.1	−0.3	−0.5	−0.7	0.0	+1.2	+2.1
Baton Rouge, La	+0.2	−0.6	+0.4	0.0	0.0	0.0	+0.5	+1.3
Carrollton, La	+0.1	−0.6	+0.1	−1.3	+0.3	0.0	+0.4	+0.8

Station.	1865.	1867.	1874.	1882.	1884.	1890.	1893.	1897.
	Feet.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Cairo, Ill	−1.6	+0.9	−2.2	+2.3	+2.2	−0.8	−0.3	+2.0
Memphis, Tenn	−0.6	0.0	−0.3	+0.9	−0.1	+1.3	+0.9	+2.8
Helena, Ark	−0.2	+1.2	+1.2	+2.6	+2.4	+3.1	−3.3	+7.2
Vicksburg, Miss	−0.5	−0.1	−3.2	−0.1	+0.1	+0.1	+0.6	+3.4
Natchez, Miss	.....	−0.3	−2.6	−0.4	−0.8	+0.4	−1.4	+2.8
Baton Rouge, La	.....	.....	+1.5	+1.3	+1.4	+1.9	+3.7	+5.9
Carrollton, La	.....	.....	+1.0	0.0	+0.6	+1.0	+2.4	+4.0

59. Floods since 1870.—The establishment of numerous permanent river gauges in 1871 has greatly facilitated a study of the floods since that time. In Table XVIII the highest and flood waters of each year from 1872 to 1897, inclusive, are given, with their dates and duration. The latter feature is set forth in the number of days the river was above the danger line of the gauge. The five stations St. Louis, Cairo, Memphis, Vicksburg, and Carrollton are selected, as well typifying the different sections of the Lower Mississippi River. As has been done in the previous tables of Section II, the river stages are here referred to the plane of lowest water. Whenever more than one period of flood occurs in the same year, the highest water of each flood is given.

TABLE XVIII.—FLOODS AND HIGHEST WATERS IN THE LOWER MISSISSIPPI FOR EACH YEAR FROM 1872 TO 1897, INCLUSIVE.

[Stages referred to the plane of lowest water.]

ST. LOUIS, MO.

Year.	Highest stage.	Date.	River above danger line.		
			From—	To—	Number of days.
	Feet.				
1872	23.7	June 12–14	.....	.....	.....
1873	26.1	Apr. 11	.....	.....	.....
1874	19.1	June 19, 20	.....	.....	.....
1875	30.5	Aug. 3	.....	.....	.....
1876	32.7	May 10	May 9	May 14	6
1877	27.3	June 14	.....	.....	.....
1878	26.5	June 15	.....	.....	.....
1879	21.9	July 3	.....	.....	.....
1880	26.2	July 2	.....	.....	.....
1881	34.3	May 6	Apr. 27	May 8	12
1882	33.1	July 5	July 2	July 10	9
1883	35.5	June 26	June 17	July 3	17
1884	28.8	Apr. 9, 10	.....	.....	.....
1885	27.8	June 17	.....	.....	.....
1886	27.7	May 13	.....	.....	.....
1887	21.4	Apr. 3	.....	.....	.....
1888	30.1	June 4	.....	.....	.....
1889	25.3	June 1	.....	.....	.....
1890	21.3	July 1	.....	.....	.....
1891	24.4	July 4	.....	.....	.....
1892	36.7	May 19	May 12	June 16	35
	31.8	July 9	July 4	July 15	12
1893	32.3	May 3	May 1	May 5	5
1894	24.1	May 11	.....	.....	.....
1895	17.8	July 8	.....	.....	.....
1896	28.4	May 26, 28	.....	.....	.....
1897	31.7	May 2	May 1	May 5	5

CAIRO, ILL.

TABLE XVIII.—FLOODS AND HIGHEST WATERS IN THE LOWER MISSISSIPPI, ETC.—Continued.

Year.	Highest stage.	Date.	River above danger line.		
			From—	To—	Number of days.
1872	40.2	Apr. 19, 20			
1873	42.6	Feb. 26	Feb. 22	Mar. 2	9
	41.6	Apr. 12	Apr. 10	Apr. 14	5
1874	45.0	Mar. 11	Feb. 27	Mar. 15	17
	48.4	Apr. 26	Apr. 16	May 13	28
1875	44.7	Mar. 21	Mar. 9	Apr. 9	32
	46.1	Aug. 8	July 20	Aug. 18	30
1876	46.2	Feb. 5	Jan. 29	Feb. 24	27
	47.4	Apr. 6, 7	Mar. 23	May 18	57
1877	41.5	Apr. 15	Apr. 14	Apr. 16	3
1878	38.0	Apr. 29			
1879	37.5	Dec. 31			
1880	42.8	Jan. 15, 16	Jan. 12	Jan. 19	8
	45.6	Mar. 22	Feb. 20	Mar. 30	40
1881	43.4	Feb. 25	....do ...	Mar. 2	11
	46.8	Apr. 20	Apr. 14	May 12	29
1882	52.9	Feb. 26	Jan. 14	Apr. 4	81
	43.5	May 23	May 13	June 11	30
1883	53.2	Feb. 27	Feb. 14	Mar. 12	27
	45.2	Apr. 15	Apr. 8	May 4	27
1884	52.8	Feb. 22–24	Feb. 7	Apr. 11	65
1885	40.0	Jan. 26			
1886	52.0	Apr. 19	Apr. 2	Apr. 27	26
1887	49.5	Mar. 9, 10	Feb. 7	Mar. 22	44
1888	46.4	Apr. 4	Mar. 29	Apr. 18	21
1889	35.5	June 24			
1890	44.7	Jan. 20, 21	Jan. 16	Jan. 31	16
	49.8	Mar. 12	Feb. 13	Apr. 14	61
1891	47.2	Mar. 3–6	....do ...	Apr. 19	66
1892	49.3	Apr. 28	Apr. 6	June 18	74
1893	45.9	Feb. 28	Feb. 20	Mar. 4	13
	50.3	May 8, 10	Apr. 17	June 14	59
1894	38.0	Feb. 16			
1895	34.3	Mar. 25			
1896	40.1	Apr. 13			
1897	52.6	Mar. 25, 28	Feb. 28	Apr. 27	59

MEMPHIS, TENN.

1872	34.2	Apr. 24			
1873	35.2	Mar. 3			
1874	36.7	May 2	Mar. 9	May 15	68
1875	35.7	Aug. 15–17	Aug. 14	Aug. 18	5
1876	36.8	Apr. 8, 9	Mar. 30	Apr. 19	21
1877	34.7	Apr. 29			
1878	31.8	May 2			
1879	30.8	Jan. 29			
1880	36.1	Mar. 24–29	Mar. 18	Mar. 31	14
1881	36.0	Apr. 27, 28	Apr. 25	May 2	8
1882	37.9	Mar. 6–9	Jan. 25	Mar. 30	65
1883	37.5	Mar. 6–8	Feb. 21	Mar. 15	23
1884	36.9	Mar. 1–3	Feb. 17	Apr. 9	53
1885	31.9	Jan. 28			
1886	37.5	Apr. 28	Apr. 13	May 1	19
1887	38.0	Mar. 10	Feb. 16	Mar. 26	39
1888	36.9	Apr. 11, 12	Apr. 6	Apr. 18	13
1889	29.3	June 27			
1890	36.0	Jan. 27, 31	Jan. 25	Feb. 2	9
	38.3	Mar. 16, 17, 23–25			
		Apr. 4, 5	Mar. 5	Apr. 19	46
1891	37.6	Mar. 10	Feb. 26	Apr. 21	55
1892	37.3	May 2, 3	Apr. 14	June 20	68
1893	37.9	May 15–17	May 1	June 16	47
1894	31.7	Feb. 19, 20			
1895	26.7	Jan. 24, 25			
		Mar. 29			
1896	32.1	Apr. 15, 16			
1897	39.8	Mar. 19–21	Mar. 10	May 1	53

VICKSBURG, MISS.

TABLE XVIII.—FLOODS AND HIGHEST WATERS IN THE LOWER MISSISSIPPI, ETC.—Continued.

Year.	Highest stage.	Date.	River above danger line.		
			From—	To—	Number of days.
1872	45.8	May 2, 3			
1873	46.9	May 29, 30			
1874	52.0	May 2-5	Mar. 14	June 4	83
1875	49.3	Apr. 21	Mar. 29	May 3	36
1876	51.2	May 10	Feb. 10	June 13	125
1877	47.9	May 8-13	Apr. 29	May 26	28
1878	47.3	Mar. 24-27	Mar. 24	Mar. 27	4
1879	45.7	Feb. 17			
1880	49.5	Apr. 8, 9	Mar. 11	May 3	54
1881	48.1	Mar. 10, 12	Mar. 2	May 22	82
1882	55.1	Mar. 20, 21	Jan. 22	July 2	162
1883	50.1	Apr. 7	Feb. 24	May 17	83
1884	55.3	Mar. 25	Feb. 16	June 1	107
1885	48.7	Feb. 3	Jan. 21	Feb. 7	18
1886	50.5	May 7-9	Apr. 18	June 4	48
1887	51.0	Mar. 26-31	Feb. 25	Apr. 10	45
1888	50.5	Apr. 26	Apr. 13	May 5	23
1889	40.7	July 3			
1890	55.3	Apr. 24, 25	Jan. 30	June 4	126
1891	54.4	Apr. 2-4	Feb. 21	May 14	83
1892	54.7	June 2-4	Apr. 14	July 24	102
1893	48.7	Mar. 13-15	Mar. 8	Mar. 21	14
	54.6	May 22, 23	May 1	July 1	62
1894	47.2	Apr. 2			
1895	38.0	Apr. 4			
1896	45.3	Apr. 21			
1897	58.6	Apr. 16	Mar. 16	June 3	80

CARROLLTON, LA.

1872	13.9	May 6			
1873	14.5	June 3, 4			
1874	17.6	Apr. 15	Mar. 17	May 18	63
1875	12.9	May 3-5, 14, 16, 18			
1876	14.3	May 11			
1877	12.7	June 4, 8			
1878	12.9	Mar. 21			
1879	12.4	Feb. 20, 22			
1880	15.8	Apr. 23, 24	Mar. 22	May 21	61
1881	14.2	Apr. 12			
1882	16.6	Mar. 27	Feb. 11	May 12	91
1883	17.0	Apr. 7	Mar. 17	June 16	92
1884	17.2	Mar. 18	Feb. 24	June 8	106
1885	15.2	Jan. 22, 23	Jan. 22	Feb. 14	24
1886	15.4	May 31	Apr. 27	June 11	46
1887	16.1	Apr. 6-9	Mar. 9	Apr. 19	42
1888	16.0	Apr. 26	Apr. 16	May 11	26
1889	13.2	Mar. 13, 14			
1890	17.6	Mar. 14-17, 22	Feb. 3	May 30	117
1891	17.6	Mar. 16	Feb. 20	May 19	89
1892	18.8	June 12, 13	Apr. 14	July 25	103
1893	14.8	Mar. 17	Mar. 15	Mar. 23	9
	19.0	June 22, 24	May 7	July 14	69
1894	15.0	Apr. 5-7	Apr. 1	Apr. 12	12
1895	11.7	Apr. 8			
1896	15.3	Apr. 24	Apr. 19	Apr. 27	9
1897	20.6	May 7-14	Mar. 18	June 13	88

60. Frequency and duration of floods.—From the above table we perceive that only rarely does the river above Cairo reach a dangerous height, but from Cairo to the Gulf the years without flood water are exceptional. At St. Louis we find, in the twenty-six years covered, only seven in which the river rose above the danger line; and the average number of days the water remained at the flood height, in these seven floods, was fourteen. At Cairo the years of flood number eighteen, with an average duration of flood of fifty-four days; at Memphis we find sixteen flood years, with an average length of flood of thirty-seven days; at Vicksburg, floods averaging seventy-two days in

length have occurred in nineteen years; at Carrollton the flood years are sixteen in number, and the average duration of flood sixty-five days. As to the season in which floods occur, we find the earliest date on which the river has been above danger line to be: At St. Louis, April 27; at Cairo, January 12; at Memphis, January 25; at Vicksburg, January 21, and at Carrollton, January 22. The latest date to which the flood has continued is: At St. Louis, July 15; at Cairo, August 18; at Memphis, August 18; at Vicksburg, July 24, and at Carrollton, July 25. In the past twenty-six years, therefore, there has been no flood water in any portion of the Lower Mississippi between August 18 and January 12.

61. Chief floods of the past quarter century.—The loss incident to a flood depends not alone on the great height reached by the water, but also on the duration of the dangerous stage. Measured by its destructive character, the first notable flood since 1870 was that of 1874. In that year the river did not reach the height of the 1858 flood at Cairo, but almost attained it at Memphis, and exceeded it at Helena by a foot; at Vicksburg and Natchez the flood was lower by about 3 feet than in 1858, but south of the Red River it was higher by more than a foot.

In 1882 a great flood occurred, the water at Cairo, Memphis, and Helena reaching the highest point recorded up to that time. At Vicksburg and Natchez the river closely approached the stage of 1858, but fell short of that of 1862. The record of 1858 was exceded by 1.3 feet at Baton Rouge, and equaled at Carrollton. The river remained in flood at Cairo for eighty-one days, and at Vicksburg for one hundred and sixty-two days, the longest flood period recorded at either station.

The flood of 1883 was notable only for the great and sudden rise at Cairo to the highest stage ever recorded at that point. At Memphis and Vicksburg the water did not reach an extreme stage, nor was the flood of unusual duration. The stage at Carrollton exceeded that of the previous year, and the flood was of equal length.

In 1884 about the same stages were reached as in 1882, but the flood was of much shorter duration at Vicksburg and above. At Carrollton the height of the river exceeded that of 1882 by 0.6 foot, and the flood lasted one hundred and six days. In this year the highest water ever known occurred in the Ohio.

The next five years were marked by moderate waters and freedom from serious flood damage. In 1890 another notable flood occurred in the lower river, but was not of marked severity above Memphis.

In 1892 and 1893 there were moderate floods, differing from those previously noted in occurring much later in the year. They may be termed summer rather than spring floods. In 1893 the highest water up to that time was reached at Helena, Baton Rouge and Carrollton.

In the spring of 1897 a great flood occurred, although not of extreme duration. The river nearly reached the stage of 1883 at Cairo, and from Memphis to its mouth rose to a height greater than ever before recorded. The flood exceeded that of 1858 by 2.0 feet at Cairo, 2.8 at Memphis, 7.2 at Helena, 3.4 at Vicksburg, 2.8 at Natchez, 5.9 at Baton Rouge, and 4.0 at Carrollton.

STUDY OF RECENT FLOODS.

62. Six floods selected for study.—Of the floods of the last twenty-six years, those of 1882, 1890, and 1897 are readily distinguishable as the most serious and destructive. These floods, together with that of 1883, in which the maximum height of water was reached at the head of the alluvial plain; that of 1884, during which the Ohio was in greatest flood; and that of 1893, as a type of summer flood, have been subjected to analysis. In determining the sources of a flood in the Lower Mississippi we will study the gauge records at certain points, so selected as to indicate the contributions of all the chief tributaries, whence a flood may come. The waters from the great Missouri Basin and that of the Upper Mississippi must pass St. Louis, and hence the stage at that point will serve as an index to flood waters out of those basins. The stages at Cincinnati and Johnsonville will sufficiently gauge the waters of the Ohio Basin; a flood from the Arkansas will be shown on the gauge at Little Rock, and one from the Red on the Shreveport gauge. On the Lower Mississippi itself the combined effect of the waters from the Ohio, Upper Mississippi, and Missouri is shown at Cairo; at Memphis the same water appears, less that passing into the St. Francis bottom; at Vicksburg there has been added the drainage from the St. Francis, White, Arkansas, and Yazoo; and at New Orleans the last tributary, the Red, and the effluent bayous have been passed. For the stations enumerated, hydrographs have been constructed from the

daily gauge readings for each of the six floods. These cover, in each flood, a period of four months, embracing the rise, culmination, and decline of the flood. For the first three months of each period covered by the hydrographs charts of the actual monthly precipitation have been drawn. It is found that, in each flood, the excessive precipitation, to which the flood was due, occurred within a period of two months, and a chart of the departure from the normal precipitation is given for each of these months, together with a chart showing the total departure in the two months. There are thus six rainfall charts and a sheet of hydrographs for each of the six selected floods.

63. Precipitation in the six floods.—By a process similar to that followed in determining the normal precipitation over the various basins the monthly precipitation during each flood over the six grand divisions of the Mississippi drainage basin has been computed, and is presented in the following table:

TABLE XIX.—PRECIPITATION IN SIX FLOODS.

Subdivisions.	1882.			1883.			1884.			1890.			1893.			1897.		
	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.	Apr.	May.	June.	Jan.	Feb.	Mar.
OHIO BASIN.																		
A	5.6	4.0	4.7	3.0	5.8	2.2	4.2	5.6	4.4	4.4	4.8	4.8	4.9	5.6	2.8	2.5	4.0	3.8
B	5.9	4.4	3.9	3.0	4.9	3.2	3.8	5.7	5.5	3.6	5.7	4.6	3.8	5.5	3.6	1.5	6.2	3.9
C	6.7	5.7	4.3	3.1	7.6	3.4	3.7	6.7	4.8	4.8	6.5	6.7	6.2	4.7	4.6	2.3	6.4	6.6
D	4.3	8.2	6.6	3.0	7.9	3.3	3.2	8.0	3.9	5.9	7.8	8.1	6.9	6.0	5.3	3.1	4.8	7.9
E	3.8	6.9	4.6	2.1	7.6	2.2	1.6	5.6	3.7	6.5	5.2	5.4	7.5	4.6	4.7	3.6	2.8	5.9
F	11.1	7.7	7.0	4.1	6.8	3.4	5.2	7.6	7.5	6.2	9.5	7.8	5.9	6.7	5.5	3.2	4.7	8.0
G	12.0	6.9	5.7	5.9	4.8	3.5	5.1	7.5	8.8	4.4	8.1	5.6	4.4	6.7	5.1	3.2	5.5	8.6
Entire basin	7.2	6.3	5.1	3.6	6.3	3.1	3.9	7.0	6.7	5.0	6.9	6.0	5.6	5.7	4.6	2.8	5.0	6.6
UPPER MISSISSIPPI BASIN.																		
A	0.7	1.3	2.4	0.9	0.7	0.3	0.5	1.5	1.2	0.9	0.6	0.8	3.8	2.5	2.1	1.9	1.2	1.8
B	1.0	1.5	3.4	1.4	2.6	0.5	0.9	1.7	2.4	2.1	1.3	1.9	4.5	2.6	4.8	2.9	1.3	2.7
C	0.8	1.5	3.0	1.3	3.3	0.9	0.6	1.5	2.8	2.0	1.0	1.8	5.4	3.9	4.8	3.1	1.0	2.7
D	1.9	4.1	3.9	1.4	5.3	1.1	0.9	2.6	3.0	4.6	2.4	3.5	6.0	3.6	3.7	4.7	1.9	4.6
Entire basin	1.0	1.9	3.0	1.2	2.6	0.6	0.7	1.7	2.2	2.1	1.2	1.8	4.8	3.1	3.7	2.9	1.3	2.7
MISSOURI BASIN.																		
A	0.4	0.3	0.7	1.4	0.5	0.9	0.7	0.5	0.4	0.4	0.5	0.6	1.0	2.7	1.4	0.6	0.9	1.6
B	0.4	0.2	0.4	1.4	0.4	0.9	0.4	0.4	0.9	0.8	0.6	0.9	1.4	2.4	1.1	0.6	0.8	1.7
C	0.2	0.2	0.8	1.7	0.5	1.5	0.3	0.4	1.0	0.5	0.3	1.1	1.5	2.7	2.6	1.0	0.8	1.4
D	0.1	0.1	0.4	1.4	0.5	1.4	0.5	0.8	1.4	0.7	0.6	1.3	3.8	2.6	2.6	1.4	0.4	2.1
E	0.5	0.4	1.1	0.6	0.7	0.6	0.4	1.2	1.8	0.8	0.4	1.0	3.3	2.1	3.9	1.6	0.9	1.5
F	0.4	0.2	0.2	1.3	0.9	0.5	0.5	0.7	2.0	0.6	0.4	0.6	1.4	2.5	2.2	0.5	0.6	1.2
G	0.4	0.3	0.1	0.6	1.1	0.4	0.2	0.9	1.7	0.9	0.3	0.3	0.3	1.8	2.3	1.2	1.3	1.3
H	0.9	3.4	2.3	1.5	3.5	1.6	1.1	2.6	3.2	4.3	1.8	3.1	6.3	5.3	5.6	4.2	1.7	4.3
Entire basin	0.4	0.5	0.7	1.3	0.9	1.2	0.5	0.8	1.5	1.0	0.6	1.0	2.0	2.7	2.5	1.2	0.9	2.2
ARKANSAS BASIN.																		
A	0.7	0.2	0.6	0.4	1.4	0.6	0.4	1.0	1.4	1.0	0.5	0.3	1.7	2.0	1.7	1.1	1.3	2.0
B	0.7	0.9	0.9	0.3	1.6	0.7	0.4	0.7	1.2	1.5	0.8	0.9	1.2	2.2	1.4	2.2	1.0	2.6
C	1.8	3.7	2.3	1.0	3.1	1.2	0.5	3.1	1.4	3.6	1.9	2.6	4.2	5.2	3.9	4.6	1.2	4.5
D	6.7	8.9	4.9	3.3	6.2	2.9	2.8	9.7	4.5	8.2	6.5	6.9	8.7	9.8	5.4	7.2	3.0	9.3
Entire basin	2.2	2.9	1.9	1.1	2.8	1.2	1.0	3.2	2.2	3.1	2.2	2.3	3.5	4.3	2.8	3.3	1.6	4.2
RED BASIN.																		
A	0.6	1.0	1.0	0.2	1.4	1.7	0.4	0.4	1.8	2.0	0.2	0.2	0.3	2.8	1.3	1.7	0.5	1.8
B	8.8	8.0	4.8	5.5	6.8	4.4	5.4	7.3	5.9	7.0	5.4	4.6	4.5	9.6	6.0	7.0	1.5	7.4
Entire basin	4.6	4.4	2.9	2.8	4.0	3.0	2.8	3.8	3.8	4.4	2.8	2.4	2.4	6.1	3.6	4.3	1.0	4.5
CENTRAL VALLEY.																		
A	4.1	9.0	4.4	1.6	6.8	2.2	1.4	5.4	3.1	7.2	4.6	6.0	9.9	5.4	5.2	4.8	2.8	7.2
B	9.0	10.1	6.2	3.5	7.8	3.2	3.9	9.2	5.6	8.0	7.6	7.1	6.1	8.8	8.1	5.1	4.4	9.6
C	9.6	10.0	6.6	3.7	8.4	3.3	4.0	7.6	4.6	7.4	7.8	7.0	6.2	10.0	5.5	4.2	4.6	8.8
D	13.0	8.6	7.4	6.2	6.5	3.4	6.5	9.6	7.8	6.9	7.9	6.5	5.4	11.5	4.5	5.3	4.4	9.4
E	12.7	6.1	6.7	9.0	5.4	4.6	7.6	7.3	8.8	3.0	6.7	6.2	2.9	9.5	5.6	5.6	4.2	6.3
F	4.0	4.6	1.4	12.0	2.6	5.4	7.2	2.4	9.2	1.2	3.0	2.4	6.8	2.7	7.0	3.4	5.0	5.3
Entire basin	8.2	8.2	5.3	5.7	5.2	4.0	4.8	6.8	6.3	5.8	5.1	6.8	6.6	7.8	6.0	4.7	4.2	7.8

64. Downfall in the six floods.—A knowledge of the discharges from the component basins and that of the Mississippi itself, during these floods, is greatly to be desired, but such information is not to be had in any completeness. We can, however, from the data of Table XIX, compute the downfall over the various watersheds, and thus obtain some idea of the sources of the different floods. In the following table the departure of the downfall from its normal value is given for the six grand divisions of the entire basin.

TABLE XX.—DEPARTURE FROM NORMAL DOWNFALL IN SIX FLOODS.

[Unit of 10,000,000 cubic yards.]

River basin.	1882.				1883.				1884.			
	Jan.	Feb.	Mar.	Three months.	Jan.	Feb.	Mar.	Three months.	Jan.	Feb.	Mar.	Three months.
Ohio	+5,901	+4,339	+1,909	+12,149	− 347	+4,339	−1,561	+2,431	+ 173	+5,554	+4,686	+10,413
Upper Mississippi	− 570	+ 714	+1,712	+ 1,856	− 285	+1,713	−1,614	− 186	− 999	+ 429	+ 570	0
Missouri	−1,361	− 907	−1,814	− 4,082	+2,722	+ 907	+ 454	−4,083	− 907	+ 462	+1,815	+ 1,370
Arkansas	+ 962	+1,764	− 160	+ 2,566	− 802	−1,603	−1,282	− 481	− 962	+2,245	+ 320	+ 1,603
Red	+1,316	+1,239	− 155	+ 2,400	− 78	+ 930	− 78	+ 774	− 78	+ 775	+ 542	+ 1,239
Central Valley	+2,196	+2,196	+ 179	+ 4,571	+ 712	+ 415	− 593	+ 534	+ 178	+1,365	+ 772	+ 2,315

River basin.	1890.				1893.				1897.			
	Jan.	Feb.	Mar.	Three months.	Apr.	May.	June.	Three months.	Jan.	Feb.	Mar.	Three months.
Ohio	+2,083	+5,360	+3,471	+10,934	+3,124	+2,950	+ 694	+6,768	−1,736	+2,083	+4,512	+4,859
Upper Mississippi	+1,000	− 285	0	+ 715	+2,855	− 857	− 999	+ 999	+2,142	− 142	+1,284	+3,284
Missouri	+1,361	− 454	− 453	+ 454	− 453	−1,361	−3,176	−4,990	+2,268	+ 907	+4,990	+8,165
Arkansas	+2,494	+ 642	+ 481	+ 3,527	+ 802	+ 802	− 962	+ 642	+2,725	− 32[illegible]	+3,517	+5,922
Red	+1,161	0	− 542	+ 619	−1,162	+1,162	− 77	− 77	+1,084	−1,394	−1,084	+ 774
Central Valley	+ 771	+ 856	+1,069	+ 2,196	+ 950	+1,959	+ 772	+3,681	+ [illegible]8	− 178	−1,673	+1,013

FLOOD OF 1882.

65. Its two swells.—From an inspection of the hydrographs for the flood of 1882, as shown on Plate XXVI, it is seen that this flood rose at Cairo in two swells, the first culminating on February 3, at a height of 7.6 feet above danger line, and the second on February 26, at 11.9 feet, the river remaining above danger line for eighty-one days. Both swells came chiefly from the Ohio, although the second was slightly increased by the rise shown in the Mississippi at St. Louis. At Memphis the river was in flood from January 25 to March 30, a period of sixty-five days, but only reached a height of 2.2 feet above danger line. At Vicksburg and New Orleans the river rose slowly from the beginning of the year, reaching the danger line at Vicksburg on January 22, and at New Orleans on February 11.* The river was in flood at the latter point for ninety-one days, to May 12; at Vicksburg the river remained above danger line for one hundred and sixty-two days, to July 2. There was a small flood in the Arkansas during the latter part of February, and a great swell in the Red from the middle of January to the middle of April.

66. The downfall which caused it.—The precipitation which caused this flood is shown on the monthly precipitation charts, Plates XX to XXII, and its average amount over the various watersheds has been computed in Table XIX. It is seen that in January the precipitation is heavy in the Ohio Basin, the Central Valley, and the lower sections of the Arkansas and Red basins. In February heavy rainfalls continued in these sections, becoming still heavier in the lower Arkansas Basin, and extended to the southern portion of the Upper Mississippi Basin, and a small portion of the Missouri Basin. In March similar conditions held, with a further increase of rainfall in the Upper Mississippi Basin. There is seen, from Table XX, to be a large excess in the downfall over the Ohio Basin and Central Valley during January and February, and a smaller excess in March. The downfall in the Arkansas and Red basins was also above the normal in January and February, but slightly deficient in March. In the Missouri Basin there was a deficient downfall in each of the three months; in the Upper Mississippi Basin the downfall somewhat exceeded the normal in February and March. This distribution of the flood rain is illustrated in the departure charts, Plates XXIII to XXV.

* Danger line at New Orleans is taken at 13.5 feet, although danger to the city itself does not begin until a stage of 16 feet is reached.

67. Origin of the flood.—The genesis of this flood is, therefore, as follows: The Lower Mississippi was at a moderately high stage at the opening of the year, the gauge reading being 9.2 feet above the normal at St. Louis, 21.2 feet at Cairo, 16.7 at Memphis, 18.4 at Vicksburg, and 4.8 at Carrollton. For the first ten days of January the river at St. Louis, Cairo, and Memphis was falling slowly, but, from the effect of rains in the basins of the St. Francis, White, and Yazoo, it was rising steadily at Vicksburg and points below. Upon the river, already well filled, was precipitated the first Ohio flood in January. The Tennessee was already rising at the beginning of the month, and the upper Ohio began to rise on the 6th. The flood reached Cairo on the 10th, and the river rose during the remainder of the month. The Ohio fell from the 1st of February, and the river at Cairo followed more slowly, but was still 3 feet above the danger line when a second flood came out of the Ohio. This rise came from the upper Ohio, as the Tennessee continued to fall throughout the month. The Ohio rose rapidly at Cincinnati from February 7 to 21. At the same time there was a sharp, but short, rise in the Mississippi at St. Louis. During the first swell of this flood the Mississippi, above the mouth of the Ohio, was slowly falling, and during the second swell was low, except for the slight rise at the end of February. The only effect of this was to make the rise at Cairo a little more sharp and high. It is clear that the flood of 1882 arose from heavy precipitation in the Ohio Basin and the districts adjacent to the Mississippi below Cairo.

FLOOD OF 1883.

68. Its single great rise.—The hydrographs of this flood, Plate XXXIII, show the Lower Mississippi at its normal level at the beginning of January. The rise, which should have been in progress, under normal conditions, did not set in until the latter part of the month. From the 17th the river at Cairo rose in a great swell, attaining on February 27 the highest stage ever recorded. The decline during March was rapid to a stage 10 feet below the normal on the 26th. A second but much smaller swell immediately set in, reaching its maximum the middle of April. Both these rises came from Ohio floods; the first was aided by a rise in the Mississippi above Cairo, but the St. Louis hydrograph shows a stationary river during the second. At Memphis the river stages followed closely those at Cairo, but the maximum height attained during the first swell was only 1.8 foot above danger line, and the river remained in flood but twenty-three days; the danger line was not reached during the second swell. A small swell occurred in the Arkansas at the same time as the first at Cairo, and its decline coincided with that at Cairo. At Vicksburg the river rose in a single swell from January 20, reaching danger line on February 24, and remaining in flood to May 17; at its maximum the stage was 2.3 feet above danger line. At New Orleans, also, there was a single swell, reaching its crest on April 7.

69. The accompanying precipitation.—The downfall of water during January, as shown in Tables XIX and XX, was deficient in all the basins except those of the Missouri and the Central Valley. In February there was a large excess in the Ohio Basin, and smaller excesses in the other basins. In March the downfall was somewhat deficient except in the Missouri Basin. These facts are further illustrated by the precipitation and departure charts, Plates XXVII to XXXII.

This is a type of a purely Ohio flood. A great flood out of the Ohio descended, in this case, upon a low river. The resultant flood is short in duration at Memphis. A second and much smaller flood, following from the Ohio, produced a second rise at Memphis, but at Vicksburg formed a continuation of the earlier swell. The prolongation of the latter at this point would seem to have been due to slow drainage through the St. Francis and Yazoo bottoms.

FLOOD OF 1884.

70. Its main features.—In this year occurred the memorable flood of the upper Ohio, in which the river at Cincinnati rose 69.2 feet above the lowest water. At St. Louis the Mississippi remained at a nearly uniform low level from the beginning of the year to the middle of March, when a moderate swell began. The great flood wave in the Ohio, as shown by the Cincinnati hydrograph, Plate XL, began on January 29, reaching its crest on February 14, and declining rapidly to March 6. This flood was immediately followed by a second of much less magnitude. The Mississippi, at Cairo, rose in two swells, the first beginning on February 1, reaching its crest at 11.8 feet above the danger line on the 22d. There was then a fall of about 16 feet to March 11,

followed by a second and smaller swell, which reached its height on April 7 at 8.8 feet above danger line. Neglecting the few days between the two swells, when the river fell a little below the danger line, the river was in flood sixty-five days. At Memphis the two swells were evident, but much less marked than at Cairo; the flood reached a height of 1.2 feet above danger line, and its duration was fifty-three days. At Vicksburg the flood rose in one swell, somewhat accentuated at the time of its crest by the second rise. The river reached a height of 8.0 feet above danger line, and remained in flood one hundred and seven days. The single, long swell at New Orleans rose 2.7 feet above danger line, and the river was in flood one hundred and seven days.

71. Distribution of rainfall.—The precipitation of this flood is shown on Plates XXXIV to XXXVI, and its departure from the normal on Plates XXXVII to XXXIX; its amount in the various river basins is given in Table XIX, and the resultant downfall in Table XX. In January the precipitation is seen to be above normal in the upper Ohio and Tennessee basins and the lower portion of the Central Valley. During February the downfall is very heavy in the Ohio Basin, and exceeds the normal in all basins. In March the downfall is again largely in excess of the normal in the Ohio Basin, and there is an increased downfall in the lower Missouri Basin.

This flood was closely analogous to that of 1882. Each was caused by two flood waves from the Ohio, but in the former one the second wave was the greater, while in this the first was the more important. The duration of the flood of 1882 was much longer. The first flood out of the Ohio descended, in the flood of 1882, upon a much higher river than in 1884. The latter flood, like the two previous ones, came essentially out of the Ohio, the second swell being somewhat increased by a rise in the Mississippi above Cairo. Short floods also came out of the Arkansas and Red rivers.

FLOOD OF 1890.

72. The rise in three swells.—The hydrographs of Plate XLVII show the Mississippi above Cairo to have remained at a low stage throughout the period covered. At Cairo the river rose in a short swell in January, reaching a height of 3.7 feet above danger line on the 21st; by February 8 it had fallen to a stage of 7 feet below danger line. A second small swell occurred in February. Toward the end of February the river again began to rise, and remained above the danger line from February 13 to April 14. The same three flood waves are seen at Memphis, where the river was in flood fifty-five days, and the water reached a height of 2.6 feet above danger line. At Vicksburg and New Orleans there is a single grand swell, the rise at Vicksburg beginning on January 7, and culminating on April 26 at a stage 8.0 feet above danger line; at New Orleans the river also rose from January 9 and reached a stage 3.7 feet above danger line. In the Ohio there were three distinct rises, the first occurring in January and culminating in a stage 1.0 foot below danger line at Cincinnati; the second rise, in February, reached a height of 12.0 feet above danger line on March 1; the third rise began on March 11 and reached a stage 14.4 feet above danger line on March 26. No flood occurred in the Arkansas this year.

73. Origin of the flood.—The precipitation and departure charts, Plates XLI to XLVI, show the heaviest downpour to have occurred over the Ohio basin. There was also heavy rainfall in the Central Valley and the basin of the White River. These facts appear in detail in Table XIX. The excess of downfall is shown, in Table XX, to have been wholly supplied from these sources, and here we again find a flood occasioned by water from the Ohio and the alluvial basins along the Mississippi below Cairo. The Missouri, Arkansas, and Red rivers play no part in the development of the flood.

FLOOD OF 1893.

74. A summer flood.—The hydrographs of Plate LIV show a flood of somewhat different character and origin. The river at Vicksburg, after a slight spring flood of little moment, had fallen on April 17 to a stage 10 feet below its normal level for that date. It then began to rise rapidly, reaching the danger line on May 1, attaining a height of 7.3 feet above danger line on May 22, and remaining above danger line to July 1. At Cairo the rise began on April 11, reaching the danger line on the 17th, and its maximum height of 9.3 feet above danger line on May 8. This rise was succeeded by a rapid fall to the 26th, when a second small rise set in. From June 12 the river fell

rapidly. The two swells are apparent at Memphis, where the flood rose to a stage 2.2 feet above danger line. A rise began in the Ohio, at Cincinnati, on April 6, and in the Mississippi, at St. Louis, on the 10th. At the former point the river rose to a stage of 5.9 feet above danger line by May 7, and at St. Louis the Mississippi reached a stage 1.6 feet above danger line on May 3.

75. The cause of it.—From the precipitation and departure charts, Plates XLVIII to LIII, as also from the data of Table XIX, we see that the rainfall to which this flood is due fell, in April, over the Ohio and Upper Mississippi basins, the lowest section of the Missouri Basin, and the upper districts of the Central Valley; in May the rainfall was above the normal over most of the Ohio basin, the southernmost part of the Upper Mississippi Basin, and southward over the districts adjacent to the Mississippi. In June the downfall was rather below the normal over the entire Mississippi drainage basin. We find this flood to have arisen from the combined action of moderate floods out of both the Ohio and Upper Mississippi basins, aided by a heavy downpour over the Central Valley and White River basin.

FLOOD OF 1897.

76. Its chief features.—In the flood of last spring, as shown by the hydrographs of Plate LXI, the river rose in one long swell at all stations from St. Louis to the Gulf of Mexico. At St. Louis the rise began on February 2, and was slow, continuing with minor oscillations to May 2, when a stage 1.0 foot above danger line had been reached. At Cairo the rise commenced on February 4; it was checked by a slight fall from February 16 to 22, after which it continued to a maximum of 11.6 feet above danger line on March 25. The subsequent fall was slow to April 16, and afterwards became rapid. The river was at flood height for a period of fifty-nine days. The course of the flood at Memphis was altogether similar to that at Cairo. The rise, commencing on February 7, was checked by a slight fall from the 19th to 24th, and then continued to a maximum stage of 4.1 feet above danger line on March 19. The fall from the latter date to the end of April was only 3 feet, then becoming more rapid. The rise at Vicksburg began on February 12, and the river came to a stand during the latter days of the month. From March 1 the rise was steady until the crest was reached at a stage of 11.3 feet above danger line on April 16. The rise at New Orleans was continuous from February 15 to May 13, when a stage of 6.1 feet above danger line was reached. A sharp rise occurred in the Ohio at Cincinnati from February 3 to 11, followed by a fall to the 20th. A still more rapid rise then set in, lasting to the 26th, when the river was 16.4 feet above danger line. This flood from the Upper Ohio was followed by a great rise in the Tennessee and Cumberland rivers during March.

77. The rainfall and probable drainage.—From the precipitation and departure charts, Plates LV to LX, it is seen that the downpour of this flood fell much short of that in the notable flood of 1882. In January there was abundant precipitation in the lower Missouri and Arkansas basins and the Central Valley, which filled the bottoms and brought the Mississippi to its normal winter height. In February a rainfall, not of excessive amount, but falling within a short time, occurred in the Ohio Basin, and inaugurated the flood. In March still heavier rainfall in the Ohio Basin, and especially on the Cumberland and Tennessee watersheds, maintained the lower Ohio in flood. This was supplemented by a slow rise from the Mississippi above Cairo, caused by moderate rains in the lower sections of the Missouri and Upper Mississippi basins. At the same time heavy rainfall occurred in the Central Valley and the lower Arkansas Basin. The departure of downfall in the Ohio Basin from its normal value is seen from Table XX to be much less than half its amount in 1882, and yet the Ohio flood is fully the equal to that of 1882. This must be explained by the rapidity of the fall of water, a short and rapid rain supplying an immediate flood drainage equal to that of a much greater rain at a slow rate of fall. The downfall in the Missouri Basin is very greatly in excess of that in 1882, but is chiefly due to a very moderate rainfall over the great dry plains which form the major part of its area. A comparison of the St. Louis hydrographs for the two years does not indicate that the Missouri discharge was increased to a degree corresponding to the stated increase of downfall.

78. Source of the flood.—The genesis of this flood appears to be as follows: The Lower Mississippi in the early part of February was at a low stage. Upon it was poured, during February, a great flood from the Ohio. At the same time the alluvial bottoms were filled by heavy rainfall.

CREVASSE AT STOP LANDING, MISSISSIPPI, AFTER SUBSIDENCE OF FLOOD.

The river was brought to full flood by the middle of March. It was then maintained in flood chiefly by heavy rainfall over the Central Valley and lower Arkansas Basin, somewhat aided by higher water in the Mississippi itself above Cairo.

COMPARISON AND CAUSE OF FLOODS.

79. *Relative importance of these six floods.*—In the following small table are shown the heights above the local danger lines reached in these six floods at several typical points:

TABLE XXI.—HEIGHTS OF SIX FLOODS, STAGES REFERRED TO LOCAL DANGER LINE.

Station.	1882.	1883.	1884.	1890.	1893.	1897.
St. Louis, Mo	+ 2.2	+ 4.8	− 1.9	− 9.4	+ 1.6	+ 1.0
Cairo, Ill	+11.9	+12.2	+11.8	+ 8.8	+ 9.3	+11.6
Memphis, Tenn	+ 2.2	+ 1.8	+ 1.2	+ 2.6	+ 2.2	+ 4.1
Vicksburg, Miss	+ 7.8	+ 2.8	+ 8.0	+ 8.0	+ 7.3	+11.3
New Orleans, La	+ 2.3	+ 2.8	+ 2.7	+ 3.2	+ 4.2	+ 6.0

It is difficult to decide the relative severity of these floods from the available records. This would be properly measured by the extent and depth of the overflow upon lands adjacent to the river, and these depend not only upon the stages reached on the river gauges, but also on the duration of high water. Below Cairo the highest river ever known occurred during the flood of 1897, but, in the duration of high water, the floods of 1882 and 1884 exceed that of 1897. The two great floods of 1882 and 1897 differ somewhat in character; the flood of 1882 was longest in total duration, but that of 1897 had greater duration of extremely high water. This is seen in the following comparative statement of the duration of various stages at the head of the alluvial plain at Cairo:

Stage of river.	1882.	1897.
	Days.	*Days.*
River above danger line	81	59
Two feet or more above danger line	68	56
Four feet or more above danger line	63	51
Six feet or more above danger line	47	47
Eight feet or more above danger line	15	42
Ten feet or more above danger line	9	19

It is seen that the earlier flood holds the lead until a stage of 6 feet above danger line is reached, but at higher stages, the later one has much the longer duration. A more detailed account of the flood of 1897 will be given in Section IV, based upon the reports of Weather Bureau officials, who were present on the ground.

80. *Cause of Mississippi floods.*—It is, of course, conceivable that a flood should occur in the Lower Mississippi from heavy precipitation over any of the great contributary basins. In these floods of the past quarter-century, we do not, however, find the western tributaries playing an important part. The great source of floods is the Ohio basin, with its steep slopes from the crest of the Alleghanies, upon which fall the heaviest rains of spring, at a time when the normal rise of the Lower Mississippi brings the river almost to the danger line from Cairo to the Gulf. In the greatest floods, we also find that heavy rainfall over the great swamp region that extends along the Mississippi from the mouth of the Ohio to the Gulf of Mexico, is an important factor. Third in importance, as a factor in producing floods, is the Upper Mississippi, which, while never discharging a volume sufficient to produce of itself a flood, yet, rising later than the Ohio, serves to prolong the high water, and thus to increase the overflow.

SECTION IV.

SPRING FLOOD OF 1897.

Special reports on this year's flood—Extent of the overflow—Losses by the flood—Work of the Weather Bureau—Flood in the Ohio River: Sources to Wheeling, W. Va.—Wheeling to Point Pleasant, W. Va.—Point Pleasant to Lawrenceburg, Ind.—Lawrenceburg to Mount Vernon, Ind.—Mount Vernon to the mouth—Tennessee River—Flood in the Upper Mississippi River: Sources to Reeds Landing, Minn.—Reeds Landing to North McGregor, Iowa—North McGregor to Clinton, Iowa—Clinton to Burlington, Iowa—Burlington to Quincy, Ill.—Quincy to Louisiana, Mo.—Louisiana to the mouth of the Missouri River—Flood in the Missouri River: Sources to Fort Yates, N. Dak.—Fort Yates to Chamberlain, S. Dak.—Chamberlain to Vermilion, S. Dak.—Vermilion to the Little Sioux River—Little Sioux River to Atchison, Kans.—Atchison to the mouth—Flood in the Arkansas River: Sources to Dodge City, Kans.—Dodge City to the southern border of Kansas—Southern border of Kansas to Dardanelle, Ark.—Dardanelle to the mouth—Flood in the Red River—Flood in the Lower Mississippi River: St. Louis, Mo., to Chester, Ill.—Chester to New Madrid, Mo.—New Madrid to Helena, Ark.—Effect of the St. Francis levee—Helena to Vicksburg, Miss.—Vicksburg to the mouth.

Detailed accounts of the spring flood of this year by officials of the Weather Bureau, who were on the ground, will be presented in the following pages. Early in April, when it became apparent that the flood would prove one of exceptional severity, those officials were directed to collect information in regard to it, and, at its conclusion, to render a report. To each of the various officials engaged in river work was assigned a section of river upon which to report. This method was applied not only to the Mississippi itself, but also to the main tributaries, and in this section will be found the various reports—some perfunctory, and some carefully prepared and highly interesting.

It is doubtless impossible to obtain from a written description a full realization of the horrors of such a visitation as this great flood. The days of anxiety and nights of fear before the dreaded waters begin to rise; the wearisome struggle to hold the protecting levee; the final hardship, when the flood has triumphed and only flight remains. These things are not to be measured by the money loss alone; besides this they mean, for many, sickness and death long after the flood has receded. As graphical illustration often helps to a clearer understanding than many pages of text, a few typical flood scenes have been reproduced from photographs taken during the progress of the flood, and will be found scattered through the text. The view, on the opposite page, of Stop Landing crevasse, which occurred on March 30, taken after the flood had subsided, shows the state in which flooded lands are left.

The reports from the flooded districts confirm fully the conclusions which we had already reached, from a study of the rainfall and hydrograph charts, as to the genesis of the flood. The general opinion of these officials is that the flood of this year was not equal to that of 1882, except at a few scattered points. The remarks in the report of Mr. S. C. Emery, Weather Bureau observer at Memphis, as to the effect of the St. Francis Levee, which has been constructed since the great flood of 1890, are specially interesting. The comparative table of gauge readings at Cairo, Memphis, and Helena, which he presents, seems to support his proposition that this levee, even in its incomplete state, has had the effect of raising the height of great floods 3 or 4 feet at the head of the Yazoo bottom.

81. Extent of the overflow.—The extent of the present flood has been carefully investigated. Charts were prepared by the Weather Bureau officials for the various reaches of the rivers, by the aid of reports obtained from the numerous correspondents of the Bureau in the flooded districts. Similar charts had also been prepared by the engineer officers in charge of the levee districts of the Lower Mississippi, and copies of these were kindly furnished to the Weather Bureau. From

these sources the overflowed area has been charted, and is shown by the darker tint on the map of the alluvial regions, Plate V. This map, while, of course, not accurate in minute details, represents with substantial correctness the flooded area. From planimetric measurements the extent of the overflow in each section of the alluvial plain has been determined, and, together with the total areas of alluvial lowland in the respective sections, is given in the following table. The latter data are as given by the Mississippi River Commission in 1887, with the single exception of the section on the west bank, between Helena and Arkansas City, where the overflow of this year exceeded the stated area of alluvial land:

TABLE XXII.—EXTENT OF OVERFLOW AREAS.

Reach of river.	In the past.	In 1897.
On the east bank:	*Sq. miles.*	*Sq. miles.*
Commerce, Mo., to Memphis, Tenn	616	583
Yazoo bottom	6,648	4,273
Vicksburg, Miss., to Baton Rouge, La	415	11
Baton Rouge, La., to the Gulf	2,001	12
On the west bank:		
St. Francis bottom	6,090	2,660
Helena, Ark., to Arkansas City, Ark	1,152	1,152
Tensas bottom	4,955	3,113
Basin of Atchafalaya Bayou	6,085	884
Basin of La Fourche Bayou	2,024	890
Total	29,986	13,578

82. Losses by the flood.—The precise extent of the loss resulting from a great flood is impossible of estimate. This loss results from many causes, among which we may enumerate the destruction of buildings, fences, levees, and similar constructions; the drowning of stock; the ruin of growing crops, and, if the flood is late in the season, the prevention of subsequent planting and hence the total loss of the year's crop; the injury to land by covering it with sand and débris, a loss that is probably in the total more than counterbalanced by the general enrichment of the soil by the deposit of rich alluvion; and the injury or carrying away of implements and movable property. The loss to wage-earners by the cessation of work is also a large factor in the damage inflicted by flood.

By a consideration of the overflowed area, as shown on Plate V, the statistician of the Department of Agriculture has estimated the value of movable agricultural property in the flooded district at the beginning of the flood at about $15,000,000, as follows:

Horses, cattle, sheep, and other live stock	$10,037,540
Corn, oats, cotton, and other movable products of last year's crop	4,664,900
Total	14,702,440

This, it will be noted, includes no real estate and no personal property, other than stock and crops, the greater part of which was moved to places of safety as a result of Weather Bureau warnings.

83. Work of the Weather Bureau.—The river and flood service of the Weather Bureau embraces at the present time 113 river stations, at which the height of river, together with certain meteorological data, is observed. These are supplemented by 75 rainfall and special stations, from which reports are obtained in time of flood. These stations are grouped about certain centers, at which their reports are collected. The essential duty of the Weather Bureau in this work is the issuance of warnings of impending floods. For this purpose the official at each river center is assigned a certain territory, for the proper warning of which he is held responsible.

From the press reports and other sources of information it appears that this duty was well performed in the late flood. The conditions having become critical, a special warning was issued from the Washington office on March 15 that "the impending flood will prove very destructive in Arkansas and northern Louisiana." Again, on March 19, a special warning was issued that "the floods in the Lower Mississippi during the next ten days or two weeks will, in many places, equal

or exceed in magnitude and destructiveness those of any previous years, and additional warning is given to the residents of the threatened districts in Arkansas, Louisiana, and western Mississippi to remove from the region of danger." Indeed, so completely was the public warned, that it caused criticism in certain quarters that the Bureau was needlessly alarming the people in the threatened districts. Subsequent events, however, fully justified the action of the Weather Bureau.

There follow in the subsequent paragraphs the detailed reports upon the river conditions of the past spring. These are grouped with respect to the five great tributaries—the Ohio, Upper Mississippi, Missouri, Arkansas, and Red, as well as the Lower Mississippi itself.

THE OHIO RIVER.

84. Sources to Wheeling, W. Va., reported by Mr. Frank Ridgway, local forecast official, Pittsburg, Pa., June 16, 1897.—Both the Alleghany and Monongahela rivers originate in and flow through hilly and mountainous districts, and are subject to frequent floods, which are characterized by an overflow confined to narrow limits, and a very rapid subsidence. Agricultural interests suffer little, the damage being confined almost entirely to navigation, railroads, and manufacturing establishments.

During the spring of 1897 two floods occurred in western Pennsylvania—the first, in February, being confined to the Monongahela, and the other, in March, to the Alleghany watershed. On February 20 rain began to fall over the Monongahela Valley, and continued until the early morning of the 23d. The rain was general in character, and averaged over 2 inches on the 21st and 22d, causing the Monongahela River to rise from a moderately low stage on the 21st to a flood stage during the early morning of the 23d. The river continued high all day and the following night; the fall was not rapid until the night of the 24th. The banks were overflowed at many points, but practically no damage resulted in the head-water districts. In the lower districts transportation, shipping, and manufacturing interests suffered greatly, the damage, at a conservative estimate, amounting to about half a million dollars. It is further estimated that the loss to wage earners, by being thrown out of employment while the water flooded the mills and while repairs were being made, amounted to at least $400,000, which brings up the figures representing the entire loss on account of the flood to nearly $1,000,000.

On March 1 from 1 to 2 inches of snow remained on the ground over the larger part of the watershed of the Alleghany River and its tributaries. The mild temperature during the first week of the month caused the snows to melt, and this, supplemented by the general rains which fell over western Pennsylvania during the same period, caused flood conditions in the Alleghany River on the 6th. The only damage caused by the high water was in the delay of railroad traffic while tracks were submerged. During the floods of both February and March the upper Ohio overflowed its banks at several points, but no considerable damage is reported to have been done.

85. Wheeling to Point Pleasant, W. Va., reported by Mr. H. L. Ball, observer, Parkersburg, W. Va., June 18, 1897.—On the eastern border of West Virginia the Alleghanies traverse the State its length, and form a watershed eastward to the Atlantic, westward to the Ohio, four-fifths of the State draining westward. The surface of the State, scarified and torn by a multitude of mountains, threaded by numberless valleys, and bounded on the west by the undulating basin of the Ohio, represents every sort of topography. The serrated hills and tortuous ravines are waterways, down which often sweep mighty torrents. So rapid is the fall of the streams, that a downpour of rain in the hills is followed in the narrow valleys by a rush of water as of a tidal wave and which as quickly recedes, and it is only when the more sluggish Ohio is reached that the march of the flood becomes less riotous. In the interior floods may, and often do, occur which have no great effect upon the Ohio, but do great damage to crops and property along the smaller streams.

At the outset it may be stated that in West Virginia the floods of February and March, though great, were not unprecedented or disastrous. At the opening of February from 6 to 10 inches of snow lay upon the mountains in the northern part of the State. Cold weather had prevailed and the rivers were frozen. Increasing warmth and general rains caused a break-up, and from February 7 to 10 the rivers were full and running freely. Such were the conditions preceding the general and heavy rains which fell from the 20th to the 24th of the month. The average rainfall during these four days over that part of the State draining into the Ohio was 3.3 inches,

and over that draining into the Potomac, 2.7 inches. The rivers, already full, were made raging torrents, especially those emptying into the Great Kanawha. Sudden and heavy rises occurred in all the mountain streams, and the danger line was reached at many points. In the Monongahela, the Cheat, the Potomac, and the Great and Little Kanawhas the rise began on the 22d and reached its highest on the 23d and 24th. The Ohio felt the heavy rains almost as quickly as the smaller streams, and the latter were choked by backwater and overflowed their valleys. The most sudden and serious rises occurred in the Monongahela and the Great and Little Kanawhas.

The river stages at Parkersburg and Marietta are practically the same, except when a rise occurs in the Little Kanawha. During the period under consideration very heavy rains fell along the Muskingum and Little Kanawha rivers, and these were immediately felt in the Ohio at Parkersburg. The river began rising on the 22d and rose rapidly until the 25th, when it reached a maximum stage of 37.9 feet, the crest of the wave passing at 4.15 p. m. The Little Kanawha during this time was out of bank along all the lowlands, and immense quantities of timber and railroad ties were washed from the side streams into the Ohio. Freight traffic on the Ohio River Railroad was abandoned, and several hundred families living along the river front were compelled to move to high ground. No direct loss was occasioned by the high water, other than the washing away of lumber and ties, the Weather Bureau having issued flood warnings in ample time for the moving or securing of other property. The stage of water at Parkersburg was not unusual.

The Elk, Coal, Gauley, Guyandotte, and Big Sandy rivers were flooded, and immense quantities of lumber and ties were washed away and many families on the lowlands were driven to high ground. No accurate statement can be given of the loss, but $250,000 appears to be a conservative estimate, founded upon the general reports through newspapers and otherwise. While the floods were undoubtedly great and widespread, they were by no means unprecedented or unusually disastrous. There is not found recorded the loss of a single human life, and the suffering caused by the necessity of moving from habitations was no more than could be expected by people who will live along the river fronts.

86. Point Pleasant to Lawrenceburg, Ind., reported by Mr. S. S. Bassler, local forecast official, Cincinnati, Ohio, June 5, 1897.—Except at the cross valleys, through which the large tributaries—the Great Kanawha, Guyandotte, Big Sandy, Scioto, and the two Miamis—flow, the country along the Ohio River, between Point Pleasant and Lawrenceburg, is fairly well protected from serious overflows by the series of hills and highlands through which the mighty volume of water, gathered mainly from the mountainous territory of West Virginia and western Pennsylvania, is swiftly carried to the Lower Mississippi.

A remarkably good stage of water and great activity in river traffic, for the season of the year, prevailed during January up to the 27th, when navigation was suspended on account of increasingly heavy floating ice. Ice gorges formed, which, under the influence of milder weather and rain during the first part of February, were broken up and carried away without damage of any consequence. Navigation on the Ohio River was twice suspended during the month of February, which was characterized by a continuation of the January ice run and by high water. Since 1860 only two higher stages than that of last February have occurred—one in February, 1883, and the other, and greatest in the history of the river, in February, 1884. Sudden and almost simultaneous rises at all points in the Ohio Valley, due to general and extraordinary rainfall, were the remarkable features of the 1897 flood.

At Point Pleasant the Great Kanawha, one of the most important tributaries of the Ohio, pours the water collected in southern West Virginia, western Virginia, and the northwestern corner of North Carolina into the main stream. The land at Point Pleasant is hilly, and comprises two terraces, the first extending to Seventh street and the second to Thirteenth street. At a stage of 52 feet the water entirely covers the first terrace. During the high water of February about one-half of the town was flooded from 1 to 7 feet in depth. The damage was small and has not been estimated. The river observer reports that advantage was taken of timely flood warnings issued, and only the few who ignored the warnings suffered.

The following table shows the danger line and river stages at points named, during the time of highest water, between Point Pleasant and Cincinnati:

Date.	Point Pleasant, W. Va. (danger line, 36 feet).		Catlettsburg, Ky. (danger line, 50 feet).		Portsmouth, Ohio (danger line, 50 feet).		Cincinnati, Ohio (danger line, 45 feet).	
	Stage.	Rise in 24 hours.	Stage.	Rise in 24 hours.	Stage.	Rise in 24 hours.	Stage.	Rise in 24 hours.
	Feet.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
February 21	19.5	1.5	24.1	1.2	25.5	1.0	29.5	0.4
February 22	30.2	10.7	37.5	13.4	37.0	11.5	41.0	11.5
February 23	45.0	14.8	52.4	14.9	51.8	14.8	50.4	9.4
February 24	50.9	5.9	56.0	3.6	57.4	5.6	56.0	5.6
February 25	52.3	1.4	58.5	2.5	59.0	1.6	59.4	3.4
February 26	50.5	.....	56.5	.....	58.1	.....	61.1	1.7

For 15 miles from its junction with the Ohio the Guyandotte River was overflowed. Guyandotte, W. Va., was nearly all under water. Proctorville, Ohio, on the opposite side of the river, is situated on a long stretch of bottom land, and was about two-thirds overflowed. The highest stage over this area of bottom land occurred on February 24, and the overflow on both sides of the river was 3 miles wide, water remaining in the bottom for ten days. Much distress and many losses were sustained along this part of the river. It is estimated that the damage to the town and farms in the vicinity would reach not less than $10,000. Nearly the entire city of Catlettsburg, Ky., was covered with from 1 to 7 feet of water. The lowlands along the Big Sandy were overflowed, as is generally the case when that tributary gets out of its banks. It is estimated that $5,000 will cover the damage done at Catlettsburg. The water was above the danger line for six days.

At Portsmouth, Ohio, the Scioto joined with the Ohio in making the rise both rapid and strong, and in less than four days covered 33.5 feet on the gauge. The water overflowed the lowlands from 1 to 6 feet, and a little over one-third of the city was flooded, including Mill and Front streets, the greater part of Third street, and the low portions of a great many other streets in both the dwelling and business districts, compelling occupants of dwellings and business houses to vacate first floors. A warning that the river would pass the danger line (50 feet) had been sent out by the Weather Bureau. This enabled those whose property was in jeopardy to move their goods to places of safety. For a distance of about 5 miles above its mouth the bottom lands of the Scioto River average about 2 miles in width. Over these bottoms the water was 20 feet deep. In Kentucky, opposite Portsmouth, high hills closely border the river. The total land submerged in and near Portsmouth was about 9,900 acres, and the estimated damage was $10,000.

The Little Miami River flows into the Ohio just east of Cincinnati, through a stretch of fertile bottom land. This serves as a storage reservoir for an immense amount of backwater. The overflow into the Little Miami Valley extended about 4 miles up the stream, and was, on an average, 1 mile wide. Cincinnati had ample warning of the impending flood. On the morning of February 23 the rapidly rising river had exceeded the stage forecasted by 0.4 foot. Careful calculation and the use of the telegraph confirmed the opinion that 60 feet, if not more, would be reached at Cincinnati. The warning was, therefore, renewed, and at 9 a. m. of the 26th the river came to a stand at 61.2 feet. Great damage by water to goods and merchandise in cellars throughout the wholesale districts, usually covered by floods, was averted by prompt removal. The total loss from all causes resulting from the flood is estimated at $150,000 at Cincinnati, $30,000 in the Mill Creek bottom, and about $25,000 along the mouth of the Licking River.

Below Cincinnati there was comparatively little loss until the bottom lands of the Big Miami River were reached, where there was an overflow. Lawrenceburg, Ind., suffered no loss this year, thanks to the new Government levee, which withstood the pressure of the water.

87. Lawrenceburg to Mount Vernon, Ind., reported by Mr. Frank Burke, local forecast official, Louisville, Ky., June 20, 1897.—The conditions prior to the spring flood of 1897 did not in any manner give reason to apprehend a serious rise. There was an almost total absence of snowfall;

the early spring rains were generally moderate, and only sufficient to maintain a fair stage of water until February 22. Upon this date excessive downpours caused the stream to swell rapidly and brought it above the danger line at Louisville on the 24th and at Mount Vernon on the following day. It attained its maximum height, 35.4 feet, at the former place on the 28th, and, except for the interval from March 5 to 10, was above the danger line until March 16, after which the water subsided rapidly, and at the close of the month had resumed its normal stage. At Mount Vernon the rise began on February 8, and on the 12th the water was close to the danger line, near which it hovered until the 25th, passing it upon that day, remaining from 5 to 10 feet above it until March 26, and attaining its maximum height of 44.9 feet on March 17. During the latter days of the month the water was receding very rapidly.

To the succession of heavy rains occurring between February 22 and March 10 the main rise can be attributed. All the smaller tributaries of the Ohio, especially those entering the river from the northern side, were bank full during this period, and the outflowing waters maintained the stream at a flood stage for a month or more. The topography of the country along the river banks from Lawrenceburg to Lewisport, Ky., precludes any very great damage, even from an exceptionally high stage of water. The hills rise abruptly from the water, or are separated from it by lowlands ranging from a few hundred yards to half a mile in width. From Lewisport to Mount Vernon the distance between the hills on either side of the river gradually increases, the lowlands being rarely less than a mile and in many places 5 miles wide. During the climax of the flood these lowlands were under water, but only for a short time, and practically no damage resulted in this section. The greatest loss was occasioned by the smaller streams in Indiana washing out tracks, bridges, and culverts, and causing an almost total suspension of traffic on the railroads entering Louisville from the north for the week subsequent to March 6.

At Evansville, Ind., the greatest apprehension was felt in regard to the threatened cut-off above the city. Evansville is located on what is known as the "Horse Shoe Bend," opposite a projection of the Kentucky shore in the shape of a peninsula. During every high water a current is formed across this peninsula, about 8 miles above Evansville, and empties just above Henderson, Ky. It was supposed that this current was more dangerous than usual, owing to the fact that an ice gorge, which had formed just before the rise of the river, had worn away the channel, and that a strong current would flow through and possibly divert the river itself. Though the action of the water was not continued long enough for this to happen, it was considered necessary by the United States engineers to take steps to prevent a recurrence of the trouble.

88. Mount Vernon to the mouth, reported by Mr. P. H. Smyth, observer, Cairo, Ill., May 29, 1897.—During this spring, for the fourth time in thirty years, the river at Cairo reached a stage exceeding 51 feet. The flood in the lower Ohio Valley did not, however, equal in magnitude nor destructiveness the floods of 1882 and 1884. At most points the water lacked 3 to 7 feet of being as high as in 1884, but at Mound City, Ill., the river reached a stage 3 inches higher than the previous high-water mark. This unusual stage is believed to have been due to the Government gravel road, which runs from Mound City to Mound City Junction, a distance of about 3 miles, and has been constructed within the past four years.

At Cairo a great volume of water, instead of taking its natural channel, passed over the embankment at Birds Point, Mo., nearly opposite the mouth of the Ohio. This water reentered the Mississippi at Lucas Bend, a point about 14 miles below. On the Kentucky side the water was over the lowlands and bottoms for from four to six weeks. All lowlands in the vicinity of Paducah, Ky., and the lower portions of Paducah itself were flooded from March 3 to April 18—forty-seven days. A conservative estimate of the money value of property destroyed or damaged by this spring's flood in the lower Ohio Valley is $175,000. Many thousands of acres of wheat were drowned out and ruined, and thousands of bushels of corn in cribs were destroyed. The loss of stock was very small, it having been removed to places of safety. For nearly one month navigation was considerably interfered with, and river business was practically at a standstill during the period of high water.

89. Tennessee River, reported by Mr. L. M. Pindell, observer, Chattanooga, Tenn., June 17, 1897.—In July, 1896, a protracted spell of dry weather set in, which continued during the rest of the year, except for a few heavy showers in December. With a dry spell extending over a period of

six months it was to be expected that the early spring would be accompanied by heavy precipitation. In February, 1897, the rainfall saturated the earth, and when March opened with heavy precipitation the water drained quickly into the streams. The precipitation was heavy during the whole of March, thus keeping the streams well filled. The total rainfall ranged from 7 to 13 inches over the watershed. General and heavy rain fell over the entire river on the 6th, 12th, 14th, and 19th, and heavy rain at a few stations on the 9th, 10th, 16th, and 18th; from the 3d to the 23d the rain was almost continuous. The river rose from the 4th to the 14th at Chattanooga. The Clinch River, at Clinton, had three distinct rises, and the Tennessee, at Rockwood, had two, and at Chattanooga three rises during the month; at Chattanooga the crests of these rises occurred on the 8th, 14th, and 22d, respectively. At Lower Muscle Shoals the river observations were discontinued on the 19th (the gauge reading at that time being 17.7 feet) on account of the water being over the gauge. The observations were resumed on the 24th. Another rise followed the heavy rainfall which occurred during the first five days of April, but the river did not reach the danger line at any point above Florence.

At Chattanooga the river covered the lowlands and bottoms from February 25 to 27, March 13 to 18, and on the 21st and 22d, in all ten days. It is estimated that 5 square miles were covered by water. The flood of 1867 covered about 30 square miles. The river reached the highest point, 38.2 feet, at 3.30 p. m. on March 14, and remained stationary up to 9.30 p. m., when it began to fall. After April 6 the river declined gradually until May 11, when another rainy spell set it, causing the river to rise until the 22.4-foot mark was reached on May 15. Since that date dry weather has prevailed, and the river has fallen to low water. At Florence, Ala., the river began to rise on March 6 and to fall on the 20th, reaching a stage 1.4 feet higher than any previous flood.

At Riverton, Ala., the rise commenced during the day on February 23, the gauge reading at 6 a. m. on that day having been 7.5 feet. The water rose rapidly until the evening of March 2, when the gauge read 26.6. This water all came from the upper river, and the reports from above Chattanooga were so alarming that extensive preparations were made at the Government works here to protect perishable and floating property. Notwithstanding these reports and indications, a rapid fall occurred between the 2d and 6th of March, the gauge reading 14.3 feet at 6 a. m. on the 6th, a fall of 12 feet in four days. On the 6th the water commenced to rise rapidly. Until the 11th the rise was due entirely to water from above this point. On the night of the 11th there was an unusually heavy rain, inaugurating a series of frequent and heavy showers, which culminated on the night of the 17th in a storm of unusual severity. The rain fell in torrents almost continuously for forty hours, beginning about 9 p. m. on the 17th and stopping about 1 p. m. on the 19th. The quantity of rain which fell during this period is estimated at 8 inches. The effect of this rain, falling as it did on ground already saturated with water, was marked, as is best shown by the record of the river gauge, which was as follows:

Date.	6 a. m.	6 p. m.
March 18	41.1	43.0
March 19	47.3	49.6
March 20	50.3	49.7

Between 6 p. m. on the 18th and 6 a. m. on the 19th the rise was most rapid, amounting to 4.3 feet, and attaining a rate of 6 inches per hour during part of the time. The crest of the rise reached Riverton during the early morning of the 20th, at which time the gauge read 50.3 feet. The records of 1867 and 1875, which are said to be identical in this neighborhood, were exceeded by about 2.5 feet. Between March 6, when the second rise began, and March 20, when it culminated, the river rose a total of 36 feet, making an average rate of over 2.5 feet per day, and a maximum of 6.2 feet from the 18th to 19th. The overflowed district includes practically all of the land between the bluffs from Florence to Pittsburg Landing, a distance of over 60 miles. The average distance between the bluffs is estimated at 2 miles.

At Johnsonville, Tenn., the river reached 48 feet on March 24, being 27 feet above danger line. It had passed the danger line on February 28, and did not fall below it until April 18. The

river reached the same stage as it did in the high water of 1882. The lowlands above and below the city were submerged. The river was out of its banks nearly four weeks. The highest point was reached at the mouth on March 24, at a stage of 50.9 feet; the highest stage ever reached was on February 22, 1884, when the river reached 54.5 feet. The overflow along the lower Tennessee was from 1 to 4 miles wide.

THE UPPER MISSISSIPPI RIVER.

90. Sources to Reeds Landing, Minn., reported by Mr. P. F Lyons, observer, St. Paul, Minn., May 12, 1897.—The recent high water in the rivers of Minnesota may be traced back to the abnormally heavy precipitation of October and November, 1896, supplemented by the rather early setting in of freezing weather, and, while not a severe, still a rather long winter, with a much more than average snowfall. The accumulation of snow on the ground during January, February, and most of March was far in excess of anything seen since the winter of 1880–81. In the spring following that winter the rivers attained the highest stages of which there is a reliable record, during April and May, 1881. The rainy season, which had its beginning in Minnesota about the middle of March, was by no means marked; in fact, the rainfall from that date to April 30 was rather light and considerably below normal. No damage of consequence resulted from high water along the St. Croix; on the Mississippi the boom companies sustained the major portion of damage, which is estimated at $60,000, from the breaking of booms and the escape of millions of feet of logs, that floated down the river and were finally gathered up about Lake Pepin.

The high water attained the maximum stage at St. Paul on April 6, at 18 feet; this stage was equaled April 16, 1875, and was surpassed April 29, 1881, when the extreme record of 19.7 feet was made. The river remained above danger line (14 feet) from April 1 to 18; after that there was a gradual and steady fall.

91. Reeds Landing to North McGregor, Iowa, reported by Mr. M. J. Wright, jr., La Crosse, Wis., June 4, 1897.—With the exception of the highest lands, the entire Mississippi bottom from Reeds Landing to North McGregor, a distance of 147 miles, was overflowed. The width of the bottom from bluff to bluff in this section averages 3 miles. At Winona, Minn., the highest stage of water, according to the records kept by the Chicago and Northwestern Railway Company, at the bridge, was 6 inches lower than in 1880. One death by drowning was due directly to the flood, that of a child of 2½ years. The flood in the vicinity of Winona was nearly if not quite as severe as in 1880, although the damage was small. Some of the residents on the shores of Lake Winona had to move out of their houses on account of high water.

Along the shores of Lake Pepin there is very little land subject to overflow, but on April 18 a very high south wind, veering to the west, washed the water over the banks and undermined the roadbeds of the Chicago, Milwaukee and St. Paul and the Chicago, Burlington and Northern railroads, but traffic was interrupted for only a couple of days. The ice moved out of Lake Pepin on April 5, thawing before it reached beyond Winona. It is a very unusual occurrence for ice to move out of Lake Pepin, as it usually melts in the lake. It is presumed that a high northerly wind, which prevailed shortly before the ice in the lake broke up, was the cause of its moving out this year.

Ice moved out of the Chippewa River into the Mississippi the latter part of March, and the log jam moved out on April 3 at 11 a. m. Many square miles of land were overflowed in Buffalo and Pepin counties, Wis., and Wabasha County, Minn., during April. The area of country known as the Chippewa bottoms is rather thickly settled, stock and hay being raised exclusively. Previous to the rise these settlers moved their families and stock to adjacent high land, and did not return to their homes until the water subsided, which was about the end of April. This section was overflowed from three to four weeks. The Chippewa gorge moved out and thawed so gradually that the only damage resulted to overflowed lands and delayed trains. A large amount of lumber and logs was scattered over the Chippewa bottoms.

In the vicinity of La Crosse the Mississippi, La Crosse, and Black rivers overflowed their banks, the water covering some farming lands and bottoms. At La Crosse the highest stage of water reached was 13.7 feet, and the flood lasted about ten days. From April 5 to 19 the levee from State street to the wagon bridge was covered with several inches of water, and the tracks of

the Chicago, Milwaukee and St. Paul Railroad on Front street were submerged. The damage was small, as the Weather Bureau had given warnings of the approaching flood, and the occupants of buildings on the levee had removed from their basements all goods that were liable to be damaged by water. The large area of the city known as the North Side was overflowed, and several families had to vacate their houses. The Onalaska electric car line was submerged for about ten days, during which time no cars could be run. The damage to the Mississippi bridges at this point from high water and floating ice was $2,500, and the damage to railroad property is estimated at an equal amount. The cost of picking up the drifting logs this spring was estimated at $10,000, and a large number of logs were never recovered. The flood of 1880 was more severe in many respects.

92. North McGregor to Clinton, Iowa, reported by Mr. L. M. Tarr, observer, Dubuque, Iowa, June 18, 1897.—The tributaries of the Mississippi in this section are numerous, but are all very small streams, except the Wisconsin, Galena, and Maquoketa rivers. The water was high in these and the smaller streams, but no serious damage was done, with the exception of the washing away of two or three small county bridges. The Mississippi between North McGregor and Clinton runs for the entire distance between high bluffs, which prevent its overflowing much arable land. The water began rising before the ice went out, which was on March 19 at Dubuque, and it continued to rise slowly but steadily until April 15, when the highest point, 17.9 feet, was reached at this place. This was 2.9 feet above the danger line and 3.9 feet below the high water of June, 1880. At North McGregor the river reached its highest point, 17.6 feet, on April 13, and was then 0.4 foot below the danger line. The river rose slowly, and the daily river bulletins from this office kept the people informed of river conditions, and there was ample time to prepare for the rise. There were no lives lost and no serious damage was done in this section.

In the cities and villages along the river a few families occupying houses in low places had to move out for a few days, and basements and cellars were flooded. The lumber yards in Dubuque were at considerable expense in moving lumber on low ground, but none of it was washed away. The damage by the high water between North McGregor and Clinton was very slight. The Chicago, Milwaukee and St. Paul Railroad runs the entire distance along the west bank of the river, and the Chicago, Burlington and Northern runs on the east bank. These roads are very close to the river for the entire distance, and yet they suffered no inconvenience from the high water. There were no washouts on either road, and no trains delayed.

93. Clinton to Burlington, Iowa, reported by Mr. F. J. Walz, local forecast official, Davenport, Iowa, May 15, 1897.—The water did not begin rising with much rapidity at Clinton until April 5, and the flood crest of 16.8, or 2.8 feet above the danger line, was reached on April 17. The highest stage at Burlington was 13.3, or 3.3 feet above the danger line, on the 19th. The water registered 13 feet at Burlington on the 20th, and remained nearly stationary until the 27th, after which a rapid fall began. The river received a considerable increment, which showed on the gauge at Burlington, from the Iowa river, and this was due to the heavy local rains over central and southeastern Iowa. The islands and lowlands in the vicinity of Clinton were generally inundated, but only slight damage resulted, as they are sparsely populated, and are cultivated to only a small extent. A few houses in Clinton, mostly very cheap ones, occupied by the poorer classes, were flooded so that the occupants had to abandon them.

From Clinton to the mouth of the Wapsipinicon River some 5,000 acres were overflowed on the Iowa side of the river, including the islands, and of this area not over one-third is cultivated land. On the Illinois side of the river the banks are high and the country well protected down as far as the mouth of Rock River, except in what is known as the Meredosia slough. The latter district was generally submerged, but as it is largely swampy, waste land, it could not be considered damaged by the flood. About the mouth and extending up the broad valley of the Wapsipinicon River are rich, fertile bottom lands under high cultivation. About 6,000 acres of land in this district, which include many fine farms, were inundated; but the damage even here will not be great, as farming operations had not yet begun, and the water receded and the land dried off in time to allow a late planting to be made. The hay crop, which is large in this section, is unhurt. Below the mouth of the Wapsipinicon, and on to Davenport, little or no damage was done. The river did not get out of its banks in this reach, and only a few islands, mostly uncultivated land, were overflowed.

In Davenport and Rock Island there was little or no damage other than the flooding, to a small extent, of cellars and basements in the business houses near the river. The Burlington, Cedar Rapids and Northern line of railroad, running into Davenport, had to abandon for a week or so its tracks entering the city along the levee; but its trains were brought in and out over the tracks of another road, and no loss other than a little delay and inconvenience resulted. Below Davenport, Big Island, at the mouth of Rock River, was partly covered. From this point to Muscatine, Iowa, the river banks are high and the country on both sides well protected from overflow at the highest stages of water. The islands in this reach were all pretty generally covered, but there is little or no cultivated land upon them, and what there is will be dried off in time to raise a crop. Muscatine Island, extending from Muscatine nearly to the mouth of the Iowa River, and containing some 20,000 to 25,000 acres of the most valuable and highly cultivated land in Iowa, would have been entirely submerged had it not been so well protected by an excellent private levee, which extends along nearly the full length of it. This levee held intact, as it also did in the much higher flood of 1892. There was no break in it, except a slight one at the lower end of the island, which was of no consequence, and was soon repaired. The part of the island below Port Louisa not protected by the levee was entirely submerged, and considerable damage resulted. The area flooded, including the whole district on the Iowa side of the river as far south as the Iowa River, will amount to some 10,000 acres, and the damage done is about $70,000.

From Drurys Landing to New Boston, on the Illinois side of the river, the bottom lands, amounting to some 30,000 acres, of which about one-sixth is cultivated, were all overflowed. The damage in this district will aggregate $80,000. From the Iowa River south to Burlington there was a general overflow of the bottom lands and islands. In places the inundation stretched clear to the bluffs, some 6 or 7 miles distant from the natural shore line. On the Iowa side, in Louisa County, there were many excellent farms covered, and the damage here will amount to considerable. The land submerged is some 30,000 or 40,000 acres, the greater part of which is cultivated. The only cases of suffering and destitution on account of the flood north of Burlington occurred in this Louisa County district, and was principally among the tenant farmers in the Iowa and Mississippi river bottoms and the subcontractors and laborers on the Government levee. Thieves (or Huron) Island, containing some 2,000 acres of farming land and having about 125 inhabitants, was entirely covered and the occupants compelled to abandon it for a time. On the Illinois side of the river the land was overflowed from 2 miles below Oquawa to opposite Burlington (10 miles below) and 1 to 3 miles back. This land, however, is low and swampy and very little of it available for cultivation.

94. Burlington to Quincy, Ill., reported by Mr. F. Z. Gosewisch, observer, Keokuk, Iowa, May 21, 1897.—The usual rise with the breaking up of the ice began early in February, causing only a moderate stage, and by March 7, when the steady rise began, the river had fallen to the low stage of 2.4 feet at Keokuk. From this date the river rose, with some fluctuations, until the crest of the flood reached Keokuk on the morning of April 27, at a stage of 18.5 feet, then gradually falling to below danger line by the morning of May 5. From Burlington to Keokuk the river hills extend nearly to the banks, leaving but a narrow margin of land liable to overflow, except in Green Bay Township of Lee County, Iowa, and on cultivated islands in the river in that vicinity. The losses at Green Bay are estimated at $7,000. In the city of Keokuk the losses were confined to the lumber district, which was covered with from 2 to 4 feet of water, and the damage will not exceed $1,000.

On the Illinois shore the river hills begin receding from the river at Warsaw, Ill. South of Warsaw the bottoms are protected by substantial levees, and comprise the Hunt, Lima Lake, and Indian Grave drainage districts. The Hunt levee was broken between 6 and 7 miles south of Warsaw on the morning of April 27, at a place where repairs had been made after the flood of 1888, and where the new work joined the old. The break widened rapidly to 475 feet. The river at the time of breaking was 3 feet lower than the top of the levee. Within four days after the break 25,000 of the 30,000 acres in the district were flooded with from 2 to 6 feet of water. The water from the break in the Hunt levee spread over the Lima Lake district, inundating the entire 14,000 acres embraced. The losses in these two districts are estimated at $64,000. The Indian Grave levee was not broken, but the district was overflowed early in January from the waters of Bear Creek, and winter wheat was then destroyed, the later flood doing no damage.

On the Missouri shore the land is mostly unprotected bottoms. The Egyptian levee skirts the south bank of the Des Moines River, ending at Alexandria, Mo. The banks of Fox River are leveed to its mouth near Gregory, Mo., the levee then extending a short distance south on the bank of the Mississippi. Owing to excessive rainfall during the month of March the levees were water-soaked, and much water soaked through the Egyptian levee at an early stage of the flood. On April 18 a considerable portion of the Missouri lands were overflowed, and the water began encroaching on the track of the St. Louis, Keokuk and Northwestern Railroad at a low point between Gregory and Canton, Mo. By April 24 southbound trains were abandoned, and on April 26 the Des Moines River poured over the top of the Egyptian levee, carrying out the railway track between the Des Moines River and Alexandria, Mo. The towns of Alexandria and Gregory were flooded. The Mississippi River south of the Des Moines was from 4 to 6 miles wide, extending inland to the foot of the hills.

95. Quincy to Louisiana, Mo., reported by Mr. E. A. Nimmo, observer, Hannibal, Mo., June 5, 1897.—Copious rains during the latter part of March and early in April caused all creeks and sloughs along the river to be filled to overflowing. The river during this time continued to rise steadily, and on April 4 the gauges at Quincy, Hannibal, and Louisiana showed a rise of 7.5, 8.8, and 10.2 feet, respectively, since the 15th of the preceding month. On March 26 water began to invade all unprotected bottom lands between Quincy and Louisiana, and by April 3 the entire bottom, extending back to the bluffs and aggregating about 31,200 acres on the Missouri side and about 2,700 acres on the Illinois side, were submerged. During the period from April 5 to 14 the water receded somewhat, but by April 20 the bottom lands were again entirely covered and remained flooded until May 6. From this time onward the river fell rapidly, and on May 11 the water had entirely receded from the flooded district.

At Hannibal the high water caused much inconvenience to property owners and railway companies along the river front. The wharf and floor of the Diamond Jo packet house was flooded, and at the highest stage water covered the floor to a depth of 15 inches. The electric-light plant, which is the property of the city of Hannibal, was entirely surrounded by water from April 26 to May 4, necessitating the use of boats to get to and from the building. During the time when the flood was at its height considerable inconvenience was caused merchants on Main street by seepage, many cellars and basements having as much as 5 feet of water in them.

96. Louisiana to the mouth of the Missouri River, reported by Mr. H. C. Frankenfield, local forecast official, St. Louis, Mo., May 20, 1897.—Heavy rains in Iowa and northern Missouri about March 19 caused a rapid rise in the Des Moines and Fox rivers, and the commencement of this rise was felt at Louisiana on the 22d. Before the crest of this rise had passed the first waters of the flood wave from the north arrived, and thereafter there was a slow, steady rise for six weeks, with the exception of a slight intermission during the second week in April. From Louisiana to St. Louis the flood was less marked than that in the Illinois River. At the former place the river goes over the banks at a 12-foot stage, and this stage was reached on March 27. The crest occurred on April 30, the stage being 18.5 feet, or only 0.3 foot less than that of the great flood of 1892. The water did not again go below the danger line until May 10. About 20,000 acres of land were submerged on the Missouri side of the river, the Illinois side being protected by the Sny levee, which successfully withstood the flood. Twelve miles below Louisiana the private levees of H. L. Hart and J. W. Colwell were broken, and several thousand acres of fine farm lands overflowed. The loss in the vicinity of Louisiana was at least $75,000. In the vicinity of Clarksville, Mo., 10,000 acres were overflowed, and damage done to the amount of $40,000. The water covered all the lands except those places where the bluffs extend to the river. From Alton to St. Louis all lowlands were flooded, but the damage was trifling. The crest of the flood wave reached St. Louis on May 2, when a stage of 31 feet was recorded, being 1 foot above the danger line. The water remained above the danger line until May 5, and has since been falling rapidly.

The heavy rains during the first week in January brought the Illinois River to a stage approaching the danger line throughout its upper portion. During the remaining portion of January, and during February, sufficient rain fell to prevent any decided recession of the water. Consequently, when the heavy rains of March commenced, the already overburdened river could carry no more water, and overflows took place along its entire course. The flood proper may be

said to have commenced on March 1, reaching its crest at Hennepin on the 18th. Owing to the wide overflow and the very slight fall of the river bed, the crest traveled very slowly, reaching Peoria on the 23d, Havana on the 27th, Frederick on the 28th, Versailles on April 1, Naples on April 3, and Grafton on April 6. The decline was equally as slow, and the effects of the flood waters of the Illinois were felt at Grafton as late as May 5. The stages of the water during this flood were on an average about 6 feet lower than those of the great flood of 1844. On the upper river, above Hennepin, there was only a slight overflow, covering some bottom lands, with little or no resulting damage. A total area of 500 square miles was overflowed. The extent of territory covered was quite small, as compared with that covered by the great flood of 1844, when the river averaged from 10 to 15 miles in width from La Salle to Grafton, and from Hardin to Grafton united with the Mississippi to form one continuous river.

THE MISSOURI RIVER.

97. Sources to Fort Yates, N. Dak., reported by Mr. B. H. Bronson, observer, Bismarck, N. Dak., April 14, 1897.—The past winter was an unusual one in North Dakota and Montana on account of the heavy snowfall, while the temperature was lower than usual, with the result that ice from 3 to 5 feet thick formed in all the streams, making an early break-up doubtful. The first part of March was unusually cold, and the lowest temperatures ever recorded in that month occurred in the second decade, but warmer weather soon followed, especially in Montana, which caused the snow to melt rapidly, and effected a breaking up of the ice in the Yellowstone River the latter part of March. It was expected that when the water from the Yellowstone reached the Missouri, the latter would open, and that, on account of the thickness of the ice, much trouble would occur from gorges in the river. These expectations were only partly realized; the river broke at this point early on the morning of April 5, and after the ice had moved for a short time, it gorged, overflowing the bottom lands and flooding the railroad tracks. These conditions prevailed in some parts of the river between the mouth of the Yellowstone and Fort Yates until the 11th, when the ice moved out and the river assumed its normal condition for this time of year. Aside from the delays to trains, no damage of any consequence was done, as there are very few people above this point along the river, and in most cases there was nothing to damage except some stock, which was removed early.

98. Fort Yates to Chamberlain, S. Dak., reported by Mr. F. O. Stetson, observer, Pierre, S. Dak., June 20, 1897.—Over nearly the whole drainage area above Chamberlain the snowfall during the winter of 1896–97 was much heavier than usual, and in some sections was the heaviest on record. That the damage from high water on the portion of the Missouri under consideration during the spring of 1897 was so small as to be inconsequential is due to a fortunate combination of circumstances. The river opened gradually from below, the ice passing out from Chamberlain to Welland before it had started at points above; but few ice gorges were formed and these were not of sufficient size or strength to have any important effect; an alternation of warm and cool weather during the latter half of March allowed much of the snow water to pass off gradually before the ice broke up, at the same time assisting in the melting and rotting of the ice, and thereby diminishing the danger of gorging. The formation of a gorge of considerable magnitude at Bismarck partially held back the water from above until the rise, due to the breaking up of the Missouri and its tributaries below that city, had begun to subside.

From Chamberlain northward to Welland the river opened on the 28th or 29th of March, the ice above remaining firm for several days longer. The first half of March was unusually cold, the average daily deficiency up to the 16th amounting to more than 16 degrees. The weather of the next five days was warmer than the average, and the temperature remained above the freezing point during not only the day, but also the greater part of the night. The snow melted rapidly, and on the 16th a thin layer of water was observed flowing over the ice in the river; by the following day this had increased to a depth of 6 inches, and on the 18th a volume of snow water, 2 feet in depth, was passing down the river, continuing in somewhat smaller quantity on the 19th. Had the weather continued warm, the ice would probably have broken up at this time, but a succession of cold days kept the river closed until the water from melted snow had passed off.

Although the river from Chamberlain to Fort Yates was higher than for several years, it overflowed its banks at but one place, Rousseau, and here no damage whatever was done, unless the caving of the bank may be considered such. Considerable cutting of the bank also occurred at Fielder. High water at Chamberlain, although the river was not at that place out of its banks, caused some injury to the pier and dike of the Pontoon Bridge Company. This is the only damage to property reported from Chamberlain to Fort Yates. Near the mouth of the Little Cheyenne, at Forest City, the lowlands were overflowed on March 29, making it expedient for several families to remove for a short time to higher ground, but there was no loss to property. With these exceptions, there were no floods, so far as learned, on this reach of the river.

99. Chamberlain to Vermilion, S. Dak., reported by Mr. C. D. C. Thompson, observer, Yankton, S. Dak., June 14, 1897.—An unusually heavy fall of snow occurred throughout South Dakota during the past winter. The greatest amount, however, fell over that portion of the State lying east of the Missouri River. The ice in the river remained solid until about March 20, when it began breaking near Vermilion; it broke at Yankton on March 22 and at Chamberlain on March 26. As will be seen from the above dates, the river began opening at the lower end of this reach and gradually worked upstream. In this way there was little chance of ice gorges forming. Some few small gorges were formed below Chamberlain, causing the low and bottom lands along the river to be flooded, but not to any serious extent. The range in depth of water in the Missouri River from the time of the break-up to the time when the water subsided was about 10 feet. I am unable to find a single case of loss of life caused by high water on the Missouri this spring, and, with the exception of the cutting out of some few acres of timber land, there was no loss of property.

The White River, draining a part of the Black Hills country and flowing into the Missouri just below Chamberlain, opened about March 15. The stream was unusually high, but the ice ran out quickly and did little damage. The Niobrara River drains a part of the Black Hills country and a portion of northwestern Nebraska. The exact time at which it opened could not be learned, but it was between March 15 and 18, and the river was not unusually high. The James River is about 700 miles long and a very sluggish stream. It drains a considerable portion of South Dakota east of the Missouri River and several counties of North Dakota. Its course is through that portion of the Dakotas where the greatest amount of snow was reported last winter. The few warm days, from March 16 to 20, melted sufficient snow to cause the stream to flow bank-full for several days; then another warm spell, from March 25 to 31, raised the water out of the banks. The warm, heavy rains of the last day of March and the first four days of April broke the ice and started a marked rise, which carried almost everything on the bottom lands before it.

The warnings by telegraph from Huron and other points up the river gave all people living on the bottom lands ample time to remove stock and implements to high ground. Most people in this section (Yankton County) availed themselves of the warnings, thus saving many thousands of dollars' worth of property. The rise, however, was so gradual after the first swell and before the ice moved out that some farmers moved back too soon and were caught, though no report of loss of life is heard. The bottom lands along the James River are from 1 to 1½ miles wide, and in some few places nearly 2 miles. The depth of water on these bottoms is reported to have averaged about 16 feet, while in some of the narrower places, a depth of 18 and 20 feet is reported. As late as May 12 a considerable portion of the bottom lands in the north part of Yankton County were still under water. The railroad companies were heavy losers by the floods on the James River. No eastern mail was received at Yankton from the evening of April 2 until noon of April 10, on which date some mail and express packages were transferred in boats. The loss to farmers on the bottom lands, which will be in the hundreds of thousands of dollars, comes from the fact that the water has subsided so slowly that they will lose the use of the ground for crops this year.

The standard by which floods are gauged in this section is the flood of 1881. In comparing the rise on the Missouri this year with that standard, it falls about 20 feet short, while the rise on the James River was about 8 feet higher this spring. The particular feature of the flood of 1881 was an immense ice gorge, while the flood this year is the direct result of the melting of the deep snow and the heavy rains which occurred at the time the snow melted.

100. Vermilion to Little Sioux River, reported by Mr. U. G. Purssell, observer, Sioux City, Iowa, June 19, 1897.—No unusual stage of water has occurred at Sioux City, the highest point reached

being 16.4 feet, which is 2.3 feet below the danger line. The breaking up of the ice in this section of the river occurred on March 19 and 20, and took place in a very orderly manner, without the formation of any gorges worthy of mention, and with a stage of water much lower than the average at breaking-up time. The river rose but 3.9 feet in the twenty-four hours after the ice went out, and then fell gradually to the end of the month, when it again began to rise slowly, reaching the highest stage of this spring on April 15, nearly four weeks after the break-up.

In the Big Sioux River occurred the highest water since the flood of 1881. The rise began in the upper waters on March 17, and reached Sioux City and Missouri on the morning of the 20th. From Egan, S. Dak., to Sioux City, a distance of 125 miles, the area of country submerged ranged from one-half to 3 miles wide, the greatest width being over the flat country in the vicinity of Elk Point and Jefferson, S. Dak. The high water continued from a week to ten days. On the Rock River, which empties into the Big Sioux above Hawarden, the flood occurred on March 18 and 19, the water rising suddenly, continuing high for about one week, and then declining slowly. The overflow was one-half to 1 mile wide, and every bridge on that stream was either seriously damaged or entirely carried away. Much damage was done to fences and to rich farm lands, which were left unfit for cultivation. At Rock Valley, Iowa, the water was several inches deep in the main street, but the damage was not very great. Every bridge on the Milwaukee Railroad between Sioux City and Rock Valley was made impassable and many of them were carried away.

101. Little Sioux River to Atchison, Kans., reported by Mr. L. A. Welsh, local forecast official, Omaha, Nebr., June 18, 1897.—During the period from March 10 to 16 the ice in the Missouri River and its branches from the Little Sioux to the Platte broke up and ran out. This section of the Missouri and its tributaries had been frozen over since January 23, while that portion south of the Platte to Atchison had, with the exception of a few days in the latter part of February, remained open. From the date of the breaking up of the ice to March 23 the Missouri rose steadily with a vast amount of ice running, but after the 23d it fell steadily to the end of the month. During the period from April 9 to 17 the river reached its highest stage, this rise being due to the high water in the upper river; after April 20 all danger of further flood was considered over.

From reports received since the decline of the high water, it is found that the flood conditions were greatly exaggerated by the press reports during their occurrence. There is no evidence whatever that any of the tributary branches from the Little Sioux to Atchison actually overflowed their banks, or that any territory adjacent thereto was submerged. From the Little Sioux to Florence Lake, which is on the west bank of the Missouri, and about 6 miles above Omaha, the Missouri was not out of its banks. On Sunday, April 11, the river overflowed into Florence Lake, filling the lake to such an extent as to cause it to overflow into Cut-Off Lake, which is located just north of Omaha and near the Missouri River. It was feared that the overflow into Cut-Off Lake would cause the water from the latter to overflow East Omaha. This critical condition continued from April 11 to 17, but on the latter date the water began to fall and all danger was past. The flowing of the Missouri into Florence Lake, and thence into Cut-off Lake, did no damage whatever, except that some squatters' shanties located on the river bottom were submerged for a few days, causing the occupants to move to higher and safe ground. This was practically the sum total of damage done by the spring flood at Omaha. The river bottoms opposite Nebraska City, St. Joseph, and Atchison were reported under water from April 12 to 18, but no damage resulted from this overflow.

102. Atchison to the mouth, reported by Mr. P. Connor, local forecast official, Kansas City, Mo., June 29, 1897.—The Missouri River bottoms are about 2 miles wide, having more or less bluff on either side. There are two levels of bottom land, called the low and high bottoms. An overflow of the high bottoms practically includes everything from bluff to bluff. The area of low bottom land between Kansas City and Boonville is about 106,000 acres and the higher bottom, made up entirely of farming land, about 75,000 acres. The area of the high bottoms between Atchison and Kansas City is about 13,000 acres. The low places subject to the greatest overflow are in the neighborhood of Atchison and Leavenworth, at Kansas City and Sibley, from Lexington about 20 miles east, 10 miles about Malta Bend, and at Glasgow.

A great flood occurred in 1844, and from the earliest Indian tradition to the present time is the greatest flood in the history of the lower Missouri River. The stage reached on the present

scale of river measurements was 37 feet on June 20 at Kansas City, 16 feet above the danger line. At Boonville the river reached 33.6 feet two and a half days later, which was 13.6 feet above the danger line at that place. The flood was caused by the coincidence of unusually heavy and protracted rains with what is known as the "June rise," the melted snows from head waters. It is said that about the middle of April the rains began to fall in brief showers nearly every other day. After a few weeks it began to rain every day. It poured down for days and weeks, almost without cessation. The river was rising quite rapidly, but no danger was anticipated, for the oldest settler had never seen a general and destructive overflow, and did not know that such a thing could occur. The river continued to rise, however, at the rate of 12 to 18 inches a day until June 5, when it went over its banks, and the situation became alarming. The channel was full of driftwood; occasionally a log house floated down with chickens and turkeys on the roof. In several instances men, women, and children were seen on the tops of houses floating hither and thither and turned and twisted about by heavy logs and jams, but the people were rescued by parties in skiffs.

On June 20 the water had reached its highest point, and the next day began to fall, but the damage done seemed absolute and the ruin complete. The flood extended from bluff to bluff, generally 2 miles. There was not an acre of dry land in the river bottoms from Kansas City to the mouth of the river. The rains subsided and the river fell rapidly. A few persons moved back to their farms, in what was then a very sparsely settled region, and although it was impossible to do any farming until the latter part of July, it is reliably reported that enough corn was raised that season for the people in many places to subsist on.

Where Kansas City now stands the flood was about 3 miles wide. In what is now known as the packing house and wholesale district, where the Union Depot stands and all the switching grounds are located, the water was about 10 feet deep. The flood extended over the present site of Armourdale and Argentine, in Kansas, near the mouth of the Kaw, but there were few settlements at the junction of the Missouri and Kaw in those days. A deplorable consequence of the great flood was the season of sickness which followed, and the high rate of mortality. It is said that it was impossible to find a well person on account of the miasma resulting from the decaying animal and vegetable matter. Chills and fever prevailed in their most malignant form, followed in the winter by spinal meningitis, then called "head disease," which proved very fatal. An important fact connected with this flood was that steamboats going up the river found it as low as usual above St. Joseph, Mo. All the tributaries of the Missouri, in the State of Missouri, are believed to have overflowed their banks in 1844 very extensively, although in that early day there was scarcely anything to damage along the streams in the way of personal property.

The flood level at Kansas City was determined and marked on a pier of the Hannibal bridge, when it was being constructed, by Mr. Octave Chanute, who was supervising engineer of construction. The stage was obtained by the collation of 11 or 12 high-water marks, preserved by old settlers on both sides of the river. Mr. Chanute states that there was practical agreement in the well-authenticated marks. Some years after the completion of the bridge a few local engineers expressed some doubt as to the accuracy of the stage, claiming that it was too high, but Mr. Chanute, who was then building a bridge across the Missouri at Sibley, about 30 miles east of Kansas City, found the high-water marks at that place to correspond very closely with the established mark at Kansas City, after allowing for the slope of the river. Mr. Chanute tested all data worthy of consideration in his determination, so that there is nothing upon which to base a doubt of its accuracy.

In 1897 the Missouri crossed the danger line at Kansas City on the morning of April 15, reaching its highest, 22.8 feet, on the 19th, and fell below the danger line on the 22d. Harlem, as usual, was more or less flooded. Water leaked into a number of cellars in the commercial houses in the west bottoms, rendering pumps necessary. The flood subsided until the 27th, when the Kaw rose from 4 to 5 feet in thirty-six hours, from exceptionally heavy rains in northern Kansas, where all its tributaries are located. This caused a second overflow in the west bottoms, and the powerful current cut across the Missouri to the Harlem banks, causing higher water in that village than on the 19th. Pumps were again put in operation. In Armourdale the sewers overflowed on the streets, and some of them were plugged with rock and cement to prevent further overflow. Train service from the north was much interfered with by floods at Leaven-

worth during the high water previous to the 19th. Tracks were nearly 2 feet under water in places, and numerous lakes were formed on the Government reservation. The flood inundated the few bottoms between Kansas City and the mouth of the river and cut away the banks greatly in places between Kansas City and Lexington.

On April 5 the Grand went over its banks from heavy rains in northern Missouri and southern Iowa, and it is said to have been higher than for fourteen years. The bottoms were entirely flooded, and all creeks in that section were full and overflowing. On April 28 very heavy rains in the same section caused a second rise, overflowing the low bottoms, but subsiding rapidly. Thousands of acres of good farming land in each county were inundated; miles of fences were carried away, and the land was washed very badly; in many places small lakes were left, that had not been dried up at the date of this report. The damage is estimated at nearly $1,000 to the mile. In April the Chariton River overflowed the low bottoms, but caused no damage of importance, as most crops were planted after the high water. The prime cause of all important floods in this section is heavy rains in the central Missouri Basin. In occasional years, when a vast quantity of precipitation is stored in the region of head waters during the winter months, and protracted warm weather prevails in that section in the early spring, a decided rise is looked for, but nothing of a damaging character, unless supplemented by at least moderate rains; but with a very ordinary flow from the upper valley and heavy rains in northern Kansas, Nebraska, western Iowa, and northwest Missouri, there is sure to be a flood from Kansas City eastward.

A great number of squatters here and there along the low bottoms and on accretions of the river or neutral grounds, who indulge in farming and gardening in a small way, meet with disaster every time the least and most insignificant overflow occurs, but they do not take such lessons seriously. When the waters subside they go at it again, and if they can secure subsistence from year to year, their ambition seems to be fulfilled. The first to be damaged by high waters at Kansas City are of this class. They have to move out with a stage of about 20 feet. At a stage of 21 feet the water begins to encroach on the low bottoms. At 22 feet it flows into the low places in Harlem, and interferes with the output of a few sewers in the west bottoms. At 23 feet Harlem is pretty well flooded, and a consiberable portion of the farming lands just above the low bottoms; water leaks into cellars of commercial houses in the west bottoms; sewers become more of a menace than a utility, and in many places have to be plugged. An additional foot causes a serious situation, and floods a thousand acres of farming lands to the mile from Kansas City eastward.

The greatest damage occurs when the overflow happens late in May or in June, as it washes out all the crops, and, by the time the waters recede, it is generelly too late to replant, and the condition of the soil is such that, at best, but little can be accomplished. In a great number of instances cloudbursts cause immense damage to farm and stock interests. A cloudburst near Salina, Kans., in July, 1895, along the Smoky Hill Fork, caused the stream to inundate 5,000 acres, and the damage for 40 miles along the river was greater than that of all previous overflows in that section.

Below Boonville the Missouri did not reach the danger line this spring.

THE ARKANSAS RIVER.

103. Sources to Dodge City, Kans., reported by Mr. G. T. Todd, observer, Dodge City, Kans., April 15, 1897.—From Dodge City westward the bed of the Arkansas River has been almost dry since last July. The river was very low all through the winter and spring, and at the present time has an average width of about 10 feet, and a depth of a foot to a foot and a half. This is the usual condition of the river at this season, and there will probably be little change before the end of May.

104. Dodge City to the southern border of Kansas, reported by Mr. F. L. Johnson, observer, Wichita, Kans., June 20, 1897.—In Kansas the Arkansas River is a broad, shallow stream, swift when up, but frequently dry for months at a time. About the only time it is high is when the heavy rains of May and June and the melting snow in the mountains of Colorado cause the high water locally known as the "June rise." This usually occurs during the first decade of June, and the rise lasts

from five to ten days. It comes suddenly and subsides slowly, and is usually confined to the Arkansas River, the tributaries being exempt. Although this rise comes suddenly, it does not come unexpectedly; it requires about five days for the rise to reach Wichita from Colorado, three from Dodge City, and one from Hutchinson. It takes from ten to fourteen days for a sudden rise of water at Wichita to reach Fort Smith. Irrigating ditches in the western part of Kansas take considerable water from the river. In prolonged dry periods all the water sinks into the sandy bed of the stream before reaching Hutchinson. From Hutchinson to Wichita the river bed is, in dry times, a waste of drifting sand; but at Wichita the tributary stream, Little Arkansas River, which never goes entirely dry, adding its small contribution, makes the Arkansas River from there on a stream in fact as well as in name, except in extraordinarily prolonged drouths, when only occasional pools remain.

The bottom lands along the Arkansas River vary in width from 1 to 3 miles, and the river banks are from 6 to 10 feet high, as far south as Wichita. South of Wichita the banks are higher, on the left bank considerably higher, and the bottom lands narrower. The principal tributaries are the Pawnee at Larned, the Little Arkansas at Wichita, the Ninnescah, 35 miles south of Wichita, and the Walnut at Arkansas City, Kans. The slope of the land is east or southeast and quite marked, so that the streams are generally rapid. By reason of the almost impervious sod that covered the virgin prairie, the greater part of the heavy rains flowed at once into the streams. As more and more of the prairie sod is broken, and many little runs are dammed to make ponds, less and less water flows into the stream; so that now their beds are usually broad and deep enough to hold even the flood waters. In Sedgwick County the proportion of broken land to the whole surface is about one-third. The percentage of broken land decreases westward. The importance of this change in the land surface on the frequency of floods is scarcely appreciated. Before the land is broken the water runs off the virgin sod almost as from the roof of a house; after the sod is broken and the land cultivated for a few years the soil absorbs water with the avidity of a sponge.

There has been no flood in the Arkansas this spring; in fact, the usual June rise has failed, so far, to come. There is but one flood recorded at Wichita which deserves mention; after a heavy rain for nine hours on May 17 or 18, 1877, there followed two days of clear weather, and then about the 20th a heavy rain fell for fourteen hours. The water in the Arkansas was up and the river had been bank-full for several days. On May 21, 1877, the water of the Little Arkansas River, unable to discharge into the Arkansas, began to overflow its banks at Pine street, and ran down through the town, flooding the first floor of the Occidental Hotel at the corner of Main and Second streets. The water was highest on the 22d, and began to recede on the 23d. The flooding of the town was due to water from the Little Arkansas only. Here in town the "Big" river merely refilled to a depth of about 3 feet a low tract about 300 feet wide, that had once been a part of its channel. Three or four miles south of town, the flood spread out over the valley from 3 to 5 miles, and so continued for about 12 miles down, the overflow being almost wholly on the right bank. The damage, aside from the inconvenience, appears to have been small.

105. Southern border of Kansas to Dardanelle, Ark., reported by Mr. J. J. O'Donnell, observer, Fort Smith, Ark., June 20, 1897.—There has been no flood in the Arkansas River this year between the southern line of the State of Kansas and the mouth of the Verdigris River, 141 miles west of Fort Smith. Floods or overflows are rare in this portion of the Arkansas River and its principal tributaries in this reach, the Salt Fork and Cimarron rivers. The Salt Fork has never overflowed. The extraordinary rain and reported cloudburst in April, 1897, in the vicinity of Guthrie, and in the valley of Cottonwood Creek, resulted in floods and overflows at many places between Guthrie and the mouth of the Cimarron River. From the mouth of the Verdigris River to Fort Smith several large rivers empty into the Arkansas, and eastward to Dardanelle many creeks of considerable importance. Along this reach of the river overflows and floods are quite frequent, occasionally doing great damage to crops, railroad property, stock, and lumber. The banks have been overflowed, except between Piney and Dardanelle, on the north bank, between Pattersons Bluff and Morrisons Bluff, on the south bank, and between Redland and Wilsons Rock.

106. Dardanelle to the mouth, reported by Mr. F. H. Clarke, local forecast official, Little Rock, Ark., June 20, 1897.—The Opossum Fork levee in Desha County runs to high land on Amos Bayou

ridge, but the flood of 1897 passed over the ridge, above the levee, and there was also a small break in the levee 3 miles from the upper end. The Arkansas River levee stops at a point nearly opposite the head of the Opossum Fork levee, and leaves a space of about 10 miles which is not protected by levee, and the water backs up to a point near Watson. There was no flood in the Arkansas River during 1897, and no breaks in the levee. All the water that flooded Arkansas territory came from the Mississippi.

THE RED RIVER.

107. The Red River, reported by Mr. Charles Davis, observer, Shreveport, La., June 16, 1897.—Copious and well-distributed rains having fallen throughout the valley of the Red River, an exceptionally long period of very low water was terminated during the first days of January, 1897, and, while there were decreasing stages during February, the stream, for the most part, continued navigable until heavy rains in March gave a rapidly rising river, which, in the opinion of many, betokened a disastrous overflow. This opinion proved to have been erroneous, as the highest stage at Fulton was only 0.6 foot above the danger line (28 feet), while Shreveport's maximum reading was 5 feet below the danger line (29 feet). Although the readings in some instances were slightly above the point at which danger begins, farm work did not suffer interruption, and the spring of 1897 will be remembered as a very favorable one for those engaged in both river and agricultural pursuits along the Red River.

THE LOWER MISSISSIPPI RIVER.

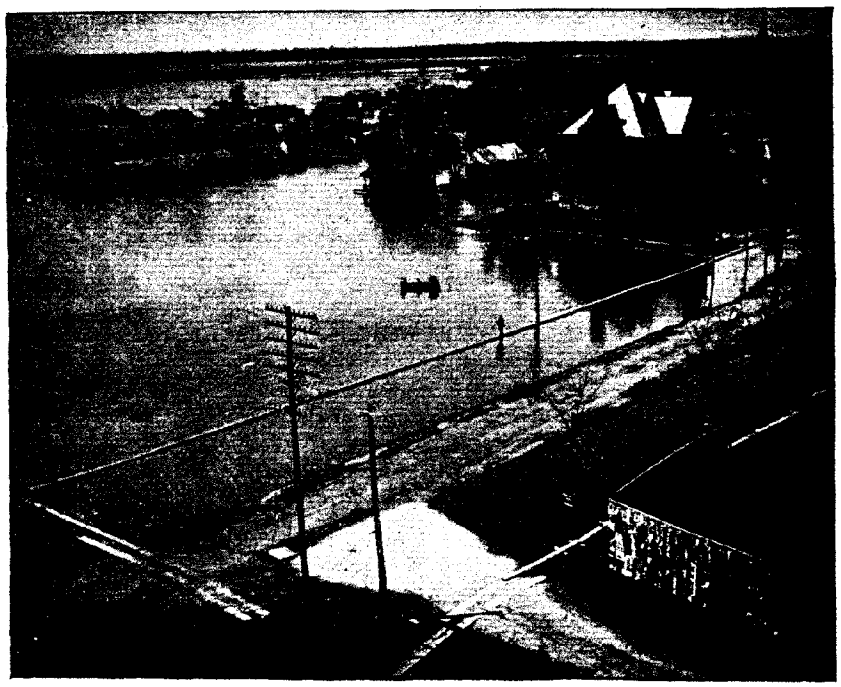
108. St. Louis, Mo., to Chester, Ill., reported by Mr. H. C. Frankenfield, local forecast official, St. Louis, Mo., May 20, 1897.—In the city of St. Louis there was no overflow and no damage was done, except a very little by seep water. In places along the levee the railroad tracks were covered, but no inconvenience resulted. Opposite the city, in Illinois, the water reached the town of West Venice, running through some of the streets on April 10, and also flooded a couple of farms. The lowlands back of East St. Louis, Ill., were also overflowed by the backwater through Cahokia Creek, and some portions of the village of East Carondelet, Ill., were submerged on April 11, but the damage was very slight. From St. Louis to Chester there was no flood worthy of mention, perhaps 1,500 acres of low bottom lands being overflowed during the first half of April.

109. Chester to New Madrid, Mo., reported by Mr. P. H. Smyth, observer, Cairo, Ill., May 29, 1897.—From Chester to Cairo, Ill., only the very lowest bottoms were flooded, and very little damage resulted. At Cairo the levees kept in good condition throughout the flood. Seep water, augmented by rains and waste water, gradually increased from about the middle of February, and by the end of March had risen to within 10 inches of the sidewalks of the graded streets. The maximum height of the seep water was reached on April 13. Nearly all of the graded streets were covered, or partly covered, and on many of the streets the sidewalks were several inches under water. Over 50 houses, located in the lower portions of the town, had to be vacated on account of water being in them, and there were as many more that were badly flooded, but were occupied. This state of affairs lasted for over a month. The authorities had put in operation two drainage pumps to relieve the city of the water, and after the pumps got to working the seep water was very materially reduced. All the ungraded portions of Cairo were flooded from the latter part of February until the middle of May, and in some of the lower bottoms the seep water remained until May 25. During the prevalence of seep water one old man and two children were drowned.

From Cairo to New Madrid, Mo., both banks of the river were submerged, except where the levees held, and even then the backwater from the breaks covered the country. At Columbus, Ky., the river lacked 4 inches of being as high as in 1883, and at Hickman, Ky., the flood of this spring was not as great as the floods of 1882, 1883, and 1884, although about the same area in Fulton County has been submerged. Washouts occurred on the Iron Mountain Railroad on March 19, causing damage to the extent of about $50,000. On the west side of the river about five-sixths of Mississippi County was submerged, and about one-half of New Madrid County. Birds Point, Mo., was completely overflowed and practically abandoned during the flood. Many thousands of acres of wheat in Mississippi County were drowned out and ruined. At Belmont, Mo., the river reached a stage one-half inch higher than ever known before.

110. New Madrid to Helena, Ark., reported by Mr. S. C. Emery, observer, Memphis, Tenn., May 13, 1897.—The beginning of the flood in this section dates from February 8. For ten days preceding that date a rapid decline had been in progress, and on February 7 the low stage of 8 feet was recorded on the Memphis gauge. A rapid rise then set in, which continued up to the 20th, when the stage was 25.1 feet. This flood wave came from the upper Ohio River, the crest passing Cincinnati on February 11, with a 44.4-foot stage, and reaching Cairo on the 17th, with a gauge reading of 34.7 feet, a rise of 20 feet in twelve days. At Memphis the wave was thirteen days in reaching its highest point, the rise amounting to 17.1 feet. The highest water was reached at Helena on the 21st, the gauge reading 33.2 feet, and the height of the flood wave was 18.7 feet, which was reached after a rise covering a period of twelve days.

It will be noted that the crest of this wave was exactly ten days in passing from Cincinnati to Helena, and, except a slight depression at Memphis, the same height was maintained throughout the entire distance, and the same number of days intervened between the first rise and the point of decline. While the flood wave noted above was in progress, a second and more extensive one



The flood of 1897 at Cairo, Ill.

was moving down the Ohio, receiving on its way heavy additions from the Cumberland and Tennessee rivers, which were raised to flood height by heavy rains throughout the region drained by them. All of the above rivers began to rise simultaneously, and with great rapidity. Meanwhile, rains throughout the valleys of the Lower Mississippi and the Ohio continued with increased frequency and volume. The last great flood wave was first felt at New Madrid on February 24, and at Memphis on February 26, after a very slight fall from the preceding one. For one week the rise over this section of the river averaged about 1 foot per day, and afterwards from 0.4 to 0.6 foot daily.

By March 6 the lowlands about Memphis were under water, and the water began to flow over the banks on the Arkansas shore. At 7 a. m., March 9, the stage at Memphis was 32.9 feet, and at 11 a. m. of that day the danger line had been reached. At this time the greatest excitement prevailed in this section; people occupying the lowlands were moving out, and large sums were being expended in the protection of property against an overflow, which now seemed imminent.

Hundreds of men were set to work on the levees, as upon their stability depended the fate of the entire St. Francis Basin. On March 12 the town of Hopefield, Ark., opposite Memphis, was submerged, and most property was removed to places of safety. The 13th of March was an eventful day in this section. On that day Marion, the county seat of Crittenden County, Ark., and the adjacent land for 3 miles from the river was flooded. There were in Marion 500 people who resided there, and as many more who had been driven there by the high water in the bottoms. This place was formerly a city of refuge for people in that section, on account of the dike around it, which had withstood all previous floods, and was built several inches above the previous high-water mark, but at about 8 p. m. on the 13th the water began to pour over the lower places in the dike, and in a short time there were from 4 to 6 feet of water over the entire town. On the first floor of the court-house the water stood 18 inches deep, and there was scarcely a habitable house in town. On the same day, about 7 p. m., 300 feet of the old State levee at Butler's plantation, 4 miles north of Nodena, Ark., gave way. The break was 15 feet deep, and in a very short time the whole country about Nodena was covered to such an extent that the people were obliged to abandon their homes and seek safety on the embankments, or whatever elevations could be found. In many instances it was found impossible to save even the stock, which was left to perish.

By March 16 the entire territory between Memphis and Crowleys Ridge, which is 40 miles west of the river, was under water, and the work of rescuing the people was going on day and night. From every direction came reports of unexpected and unprecedented disaster. Localities that were expected up to the last moment to withstand the overflow were at last under water, and the people found themselves hemmed in, with no means of escape, and all they could do was to await, frequently on the roofs of their dwellings, the coming of the rescuing boats. At Marion 400 people were found lined up on the railroad embankment, over which an occasional wave swept, and along the railroad lines as far as the relief boats could penetrate the same condition of affairs existed. Men, women, and children, and stock were found, chilled by the cold, and standing in water ranging from foot to neck deep.

On March 17 a break occurred in the levee at Caruthersville, Mo., which soon became 700 feet wide, and sent a vast body of water down toward Mississippi County, Ark. Another break occurred 18 miles south of Caruthersville. The town of Osceola, Ark., 100 miles north of Memphis, was covered to a depth of about 3 feet, and opposite, in Tennessee, the water extended 15 miles inland. The town of Golddust had from 3 to 4 feet of water in its streets. Ashport was also badly flooded.

By March 18 the situation was extremely critical; the river at New Madrid was then nearly 1 foot above the highest known stage; at Memphis it had reached a point 3.8 feet above danger line, the gauge on that day reading 36.8 feet, a rise of 9.5 feet since March 1. Five breaks had occurred in the levee near Nodena; in fact, about 2½ miles of the old levee at that place had been swept away. The most serious break was the one at Sans Souci, which occurred during the afternoon of the 19th. For two weeks the citizens of Sans Souci had been working day and night to keep the water outside the levee, a break in which meant the devastation of the country below. The strain on the levee finally became too great, and a break occurred, through which the water rushed with tremendous velocity, and, though every effort was made to close up the crevasse, it steadily widened, and the whole country back of Sans Souci was soon flooded.

This break, and the general downfall of the old State levee near Nodena, caused the river at Memphis to come to a stand at 37.1 feet on the morning of March 19. On the same day the gauge at Memphis was carried away by the flood, and it was found necessary to use the old gauge, located about a half mile north of the one destroyed. This old gauge was found to read 0.6 foot higher than the one formerly used, and, in order to make the readings harmonize with those previously taken, this amount was deducted from the actual readings from and after the 19th. This stage continued at Memphis for three days, when the river began to decline, but so slowly that after thirty-three days the decrease only amounted to 2 feet. Had the levees above remained whole it is likely that at least another foot would have been added to the Memphis record, as the rise continued at New Madrid up to the 29th, or ten days after the maximum height had been reached at Memphis.

At the beginning of the flood the current in the river was very rapid, estimated at 8 to 10 miles per hour, but, as the country below became filled, the velocity of the current decreased to

half as much. The water which left the main river through the numerous crevasses and passed through the St. Francis returned at Helena, which accounts for the continued rise at that place after the fall had set in at Memphis. From March 19 to 25 the St. Francis bottom and the lowlands along the Tennessee shore filled rapidly, and the maximum height of the water over the flooded territory was reached by the 25th. On the Tennessee side the water extended farther inland than it was ever known to do during any previous overflow; in Dyer County the water covered a large tract of rich farm land which heretofore had been considered above the possibility of an overflow.

By March 31 the flood had completed its work of destruction over all the territory from Memphis northward, and the waters were slowly receding. South of Memphis, in the vicinity of Helena, the situation was still extremely critical, and every possible effort was made to meet the impending crisis. On Sunday, April 4, the first break in the Yazoo levee system occurred at Flower Lake, opposite the mouth of the St. Francis River and on the farm of Mr. F. M. Norfleet. The break occurred at 7.30 a. m., and by 11 a. m. it had grown from a few feet to 500 feet in width, and two days later the crevasse was 2,000 feet wide. Through this gap a mighty river was emptying itself onto some of the richest cotton lands in the State, and soon the southeast portion of Tunica County was flooded. This crevasse completed the destruction in this section, and the river at Helena fell from that time on.

The Mississippi in flood near Greenville, Miss.

The money value of the property destroyed can not be estimated at this time, but it will amount to a very large sum. The heaviest sufferers from the overflow are those engaged in farming, and owners of farm lands upon which small tenants, occupying frail dwellings, had been established. These dwellings have in many cases been washed away, and a large number of those remaining are beyond repair. Fences are washed away, farm implements and seed destroyed, and live stock drowned in great numbers. Those who could do so, drove their stock to mounds and ridges, where such were available, and others built rafts upon which cattle and hogs were kept until the water subsided, or they were removed to places of safety. In many places, however, the flood came so suddenly and unexpectedly that there was no time to save anything but human life, and cattle were left to drown. Many of the cattle and horses, collected on mounds and other high places, were killed by the dreaded buffalo gnats, which are one of the usual results of an overflow in this section. Another item of damage to farm property is the deposit of sand, which

in some cases is several feet deep, and renders the land unfit for cultivation. The damage to railroad property throughout the St. Francis Basin and the Delta country is very great. Several railroads leading out of Memphis were kept in operation by building a false structure, from 1 to 2 feet high, above the track, and placing rails upon this for the passage of trains.

Of the previous overflows, that of 1882 is considered, in this section, to have been the greatest, and all comparisons are made with that flood. In that year the water extended over a greater area in the northern portion of the St. Francis Basin, and to a greater depth, than during the present overflow, as the levees kept out a great amount of water this year from that section. The opposite side of the river, in Tennessee, throughout the counties of Obion, Lake, and Dyer, which had no levee protection, received the water which formerly went into the St. Francis, and, as a consequence, those sections were flooded many miles farther inland than ever before. That portion of Arkansas extending from Mississippi County south was covered to a greater depth than in 1882, or any previous year, and the depth increased as one traveled southward, until the high ground near Helena was reached. A farther spreading westward was prevented by Crowleys Ridge. That portion of the St. Francis Basin where the inundation was practically complete is comprised within the following area: The whole of Crittenden and Mississippi counties, about half of St. Francis and Poinsett, and nearly all of Lee counties. This section was flooded to a depth of from 3 to 7 feet. The population of the five counties named is 45,000, of which 25,000 are blacks. Over 200,000 acres of land are tilled in this area, of which 90,000 are devoted to cotton, the remainder being about equally divided between corn and potatoes. Crittenden and Mississippi counties have 40,000 acres of cotton land, and produce about 30,000 bales of cotton annually.

111. Effect of the St. Francis Levee.—Before comparisons can be made between the present flood and those which have occurred in former years, it is necessary to take into account the changed conditions which have resulted from the construction of the Arkansas levees. Since 1890 there has been built a line of levee along the west bank of the Mississippi River, extending from Point Pleasant, Mo., south to Pecan Point, a distance of 125 miles. The purpose of the levee is to protect the St. Francis bottom, the greater portion of which was formerly subject to an annual overflow. Of this bottom much is not under cultivation, considerable areas being covered by a succession of swamps and lakes having a heavy growth of gum, sycamore, and cypress trees. In former years the bottom had been flooded more or less whenever the Mississippi, at Cairo, reached a 41 or 42 foot stage. The water, after leaving the main river, passed into the St. Francis Basin, through which runs the Little and St. Francis rivers; through these channels it again found its way to the Mississippi at a point about 12 miles north of Helena, Ark. The effect of leveeing the west bank of the Mississippi, in front of the St. Francis bottom, is to compel the water to pass down the Mississippi, from Cairo to Helena.

In the following table a comparison is made of several earlier floods with that of this year. The floods occurring from 1882 to 1886 reached about the same stage at Cairo as the flood of this year. The maximum stages at Cairo, Fulton, Memphis, and Helena, during the floods of 1882–1886, together with their mean, and the corresponding stages of this year's flood, are presented:

Year.	Cairo, Ill.	Fulton, Mo.		Memphis, Tenn.		Helena, Ark.	
	Maximum stage.	Maximum stage.	Below stage at Cairo.	Maximum stage.	Below stage at Cairo.	Maximum stage.	Below stage at Cairo.
1882	51.8	36.7	15.1	35.0	16.8	47.2	4.6
1883	52.2	36.3	15.9	34.8	17.4	46.9	5.3
1884	51.8	35.7	16.1	34.2	17.6	47.0	4.8
1886	51.0	35.4	15.6	34.8	16.2	48.1	2.9
Mean	51.7	36.0	15.7	34.7	17.0	47.3	4.4
1897	51.6	37.4	14.2	37.1	14.5	51.5	0.1

The average difference in stage in the earlier floods between Cairo and Fulton was 15.7 feet; between Cairo and Memphis, 17.0 feet; and between Cairo and Helena, 4.4 feet. The building of the levee has caused a decrease in the difference between those points; that is, it has raised the stage at Memphis about 2.5 feet above what it would have been had the water been left to flow over the lowlands of Arkansas. So, instead of a difference of 17.0 feet between the Cairo and Memphis stages, we now have about 14.5 feet, and, had it not been for the breaking of the levee, it is probable that this difference would have been lessened at least an additional foot. In other words, the levees, if kept intact, would result in some 3 feet more water at Memphis than under former conditions. At Helena the change is still more marked and the former difference of 4 feet has entirely disappeared, and had it not been for the great crevasse at Flower Lake the Helena flood crest would probably have been considerably above that at Cairo.

112. Helena to Vicksburg, Miss., reported by Mr. R. J. Hyatt, local forecast official, Vicksburg, Miss., July 2, 1897.—At all points in this section the Mississippi was below the danger line on March 1, but the high water above Memphis and the high stage of the Ohio were viewed with concern by the people along the Lower Mississippi. Timely warnings that the river would reach danger-line stages and above were promptly issued and widely circulated, in order that due preparation might be made for the coming flood waters. These warnings were heeded by many, and no complaint in regard to them has been heard on any side. The planters, cattle raisers, levee boards, railroads, river men, and other interested parties went to work in earnest to arrange for the high water in sight and for a probable overflow of the lowlands in this section. These warnings were kept up during the month, and were supplemented by warnings from the Washington office, with good effect.

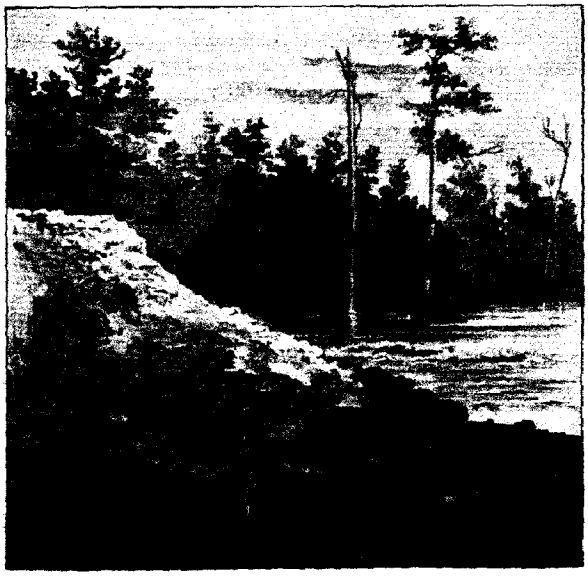
The flood proved to be the most disastrous on record. The people commenced early to move their stock and other movable property to places of safety. Some, however, waited until the last minute before moving, depending on the stability of the levees, and, consequently, much valuable stock and other property were lost, which might have been saved had the warnings been heeded earlier. The crops, of course, were ruined by the overflow, but nearly all of the land was replanted as the water receded. Railroad communication was interrupted, and many points were only accessible by boat. Happily no lives were lost, although there were many narrow escapes from drowning, and much personal inconvenience and suffering were experienced by all. The greater portion of the levees remained intact, and a number of mounds and scattered strips of land were not overflowed. Upon these the people took refuge, with their stock and household effects, while a large number of people were quartered in the cities and towns not overflowed, living in tents furnished by the Government, and forming camps, where they were supplied with food and clothing until the land was uncovered. The deposit left by the flood has enriched the land, and cotton and corn, planted as the water subsided, have done well.

113. Vicksburg to the mouth, reported by Mr. R. E. Kerkam, local forecast official, New Orleans, La., June 18, 1897.—The rapid rise to past the danger line at Cairo, early in March, combined with the heavy rains that fell over the Central Valley during the middle of March, was a premonition of the coming high waters. Warnings were issued during the middle of March to threatened districts in northern Louisiana, and the press of the State was served with special warnings and bulletins, proclaiming the coming of a disastrous flood wave. All methods of dissemination of the warnings were utilized, the telegraph and telephone lines, the mails, and the press, and it is a safe assertion that there was no intelligent person in the threatened district who was not fully alive to the existing danger. The fact that the levees had been strengthened and raised some 3 feet above the highest previous known waters gave a certain confidence to many who could scarce credit the extent of the coming flood, but the reiteration of the warnings of the Weather Bureau, day by day, resulted in general work on the levees, strengthening and raising them to hold the stage forecast.

The first crevasse of the season occurred on Bayou La Fourche, near Raceland, on March 30, but the damage was only local. On April 2 a second crevasse occurred on Bayou La Fourche, 4 miles below Lockport, entailing some loss to the plantations in the vicinity, but no damage of serious consequence, owing to the fact that no great area in that section was in cultivation. The third and most serious break on Bayou La Fourche occurred April 16, 1 mile below La Fourche

Crossing, flooding more cultivable land than either of the other two. The waters from the crevasses overflowed a considerable area of triangular shape extending from Thibodeaux southward, over adjoining portions of Terre Bonne and La Fourche parishes to the Gulf.

The first break along the Mississippi, below Vicksburg, occurred in the private levee surrounding Davis Island. The island has an area of 5,000 acres, and a population of nearly 2,500, mostly negroes. The entire island was submerged, but all stock was removed, and there was little loss of property and no lives. At 10 p. m., April 16, a break occurred in the Biggs levee on the Louisiana side, 4 miles below Delta. This was the first break in the Louisiana line on the Mississippi. It widened with such great rapidity that all attempt at closing it was out of the question, and in four hours it was 1,000 feet wide and cutting very fast. The engineer's measurement of this crevasse, on April 23, gave the width as 2,200 feet, a depth averaging 16 feet, and a current of 5 miles per hour.



The Biggs crevasse, 4 miles below Delta, La.

On April 19, a break occurred in the Reid levee, 1½ miles below the Biggs. This crevasse widened to about 600 feet, with a depth of 16 feet. The Glasscock levee, 20 miles below Natchez, on the Louisiana side, also broke on the same day. On the next day this break had reached a width of 1,000 feet, after which but little cutting occurred. These breaks flooded nearly all of Madison, Tensas, and Concordia parishes, and by the last of April had filled the basin at the head of the Atchafalaya, and threatened the portions of the State lying to the southward. A small break occurred at Paulin J. Coco's place on Bayou des Glaizes on April 29, but was soon closed.

From April 24 to May 12 a series of breaks occurred in the levee at Burton's sawmill in the lower portion of Baton Rouge. The first break, on April 24, was 20 feet wide. Material and men being right at hand, the break was soon closed, and the damage was confined to the yard of the mill. On May 8 another break occurred in the same stretch of levee, but was soon repaired, before doing serious damage. On the 10th, the third break, 60 feet wide and 4 feet deep, occurred at 1 a. m., but the ends were secured. This was followed on the 11th by another break. Work was begun on a box levee around the whole stretch, and the water was confined by the night of the 11th. On the 12th, the fifth and last break occurred, under the dry kiln of the mill, which stood across the line. This proved to be the most serious of all, and was not closed until the mud box was completed on the 20th. During the time of these breaks the lower portion of the city of Baton Rouge, known as Catfish Town, was flooded with water to a depth varying from a few inches to

several feet; but little damage was done to the surrounding plantations, as the water readily found its way to Bayou Manchac and was carried off.

Another series of breaks, three in number, occurred below the city of New Orleans on April 26, 27, and 29. The first, on Melrose plantation on the west bank of the Mississippi 9 miles below Scola's canal and 49 miles below New Orleans, occurred at 10.30 p. m. of April 26; its width was 35 feet, and depth 4 feet. At 1 a. m. of the 27th, a break 50 feet wide and 6 feet deep occurred on the Gueanard place, near Nairn. Both breaks were closed on the 27th. On April 29 the third break occurred on the place of Mr. Charles Bally, near Home Place, and was closed at a late hour that night. The damage from these breaks was only local, and confined mostly to submerged truck farms in their immediate vicinity.

On May 2 a break occurred in the private levee surrounding the Angola plantation of 6,000 acres, opposite the mouth of Red River. The overflow was confined to this plantation, which was completely submerged. Little loss occurred, however, as all stock that was not needed in working the levee had been removed, and there was little difficulty in taking off in safety what was left on the plantation.

On May 9 four breaks occurred on Bayou des Glaizes, in what is known as the Ten-Mile levee, at Longmire's, 2 miles above Hamburg. It opened to a width of 100 feet and a depth of 5 feet. An attempt was made on the next day to close it, and, by May 12, the cribbing was all in and the break confined to 80 feet; it was then abandoned on acount of the dirt being under water, and the labor too great to bring it from a long distance by boat. The second break occurred at Paulin J. Coco's, 3 miles above Hamburg; the width was 600 feet and the depth 2 to 3 feet. Two breaks, both small, occurred at Mrs. Bruilty's, 4 miles above Hamburg. Owing to lack of material no effective attempt could be made to close them, and the breaks merged into one crevasse, aggregating 2,800 feet in length on May 23.

The banks of Bayou des Glaizes, being high, were not leveed until recently, when the encroaching waters, inclosed by levees elsewhere, reached unprecedented heights and the residents constructed small levees to withhold the water as it rose. The general opinion is that these breaks overflowed a great area of country. In reality, the engineer detailed to report the amount of ground covered, ascertained that the water from these crevasses flooded the large loop of the bayou, and the western bank of Bayou des Glaizes and the Atchafalaya River down to about Melville, and extended inland from a few hundred feet to a mile or so. While a large portion of this section was under water, it did not come from the breaks, but was backwater from the numerous small bayous and creeks, which always overflow when it rains. Rain fell intermittently, but in considerable amounts, in this vicinity, from May 8 to 13, softening the levees; and the rain, with the windstorm of the 9th, was the direct cause of the breaks just described.

The last crevasse of the flood occurred on May 30 at Conrad Point, 8 miles by river below the city of Baton Rouge. This break opened to a width of 240 feet and a depth ranging from 13 to 17 feet. The water flooded the portion of East Baton Rouge Parish between the river and the hills, from 5 miles above the crevasse to Bayou Manchac below. Owing to the high velocity of the current and the narrow batture in front of the break the chances of closing it were slight, but by hard work a well-organized force succeeded in building a crib around the entire opening and closing it by the night of June 7.

In point of area overflowed and damage done the flood of 1897 will not compare with that of 1882 or 1890. The area this year is similar to that of 1892, except that no breaks occurred along the east bank from Ascension Parish to below New Orleans, while the lower portion of the La Fourche Basin was overflowed this year, but was not in 1892. The area is greater than that of 1893.

The loss of stock was comparatively small, as the planters had timely warning and made preparations for saving their stock when overflow became imminent. The loss of poultry, considerable quantities of feed, farming implements, and hogs was perhaps greater than that of other properties. Many planters had seed in the ground, while others delayed planting as much as possible, fearing loss of their seed and labor by overflow. The losses of first planting were considerable, but the rapid decline in the river and backwater permitted considerable replanting early in June, and the loss of staple crops, cotton and corn, will be reduced to the minimum by

the favorable growing weather for the late-seeded crops. In the Bayou La Fourche district the few plantations situated immediately on the banks of that stream suffered almost complete destruction of cane plantings and stubble. Loss of life was reported in many cases, but further investigations proved the rumors to be without foundation, and no case is at present known of loss of life due to the overflow.

In order to better study the flood and follow its crest, special river-gauge readings were received from Natchez, Miss., Bayou Sara, La., and Donaldsonville, La., from March 25 to June 15. These readings show that the river passed the danger line at Natchez on March 26, reaching the highest record of 49.8 feet on March 29, at which point it remained until May 3. The decline then began, the water receding below the danger line on June 4. At Bayou Sara the river was above the established danger line of 28 feet during the entire time reports were received. The highest stage at that point was 43.8 feet on May 14 and 15. Donaldsonville reported stages above the danger line from the first report, on March 25, to June 12; the highest stage was 32.8 feet on May 13 to 17.

At New Orleans readings were taken at 8 a. m. and 8 p. m. during the dangerous stages. The danger line of 16 feet was reached March 27, with a steady rise to May 8, when the stage at 8 p. m. was 19.6 feet. Slight fluctuations occurred on the succeeding three days, and 19.6 feet was again recorded at the evening observations on the 9th and 11th. On the 13th, the highest morning reading, 19.5 feet, was recorded, and it could not be said that the river showed an actual decline until after this date, as it is probable that its stages were slightly influenced by wind and tide, causing slightly higher readings, as a rule, in the evening. The river again fell to the danger line June 9.

Blank page retained for pagination

Plate IV.

Drainage Basin of the Mississippi River.

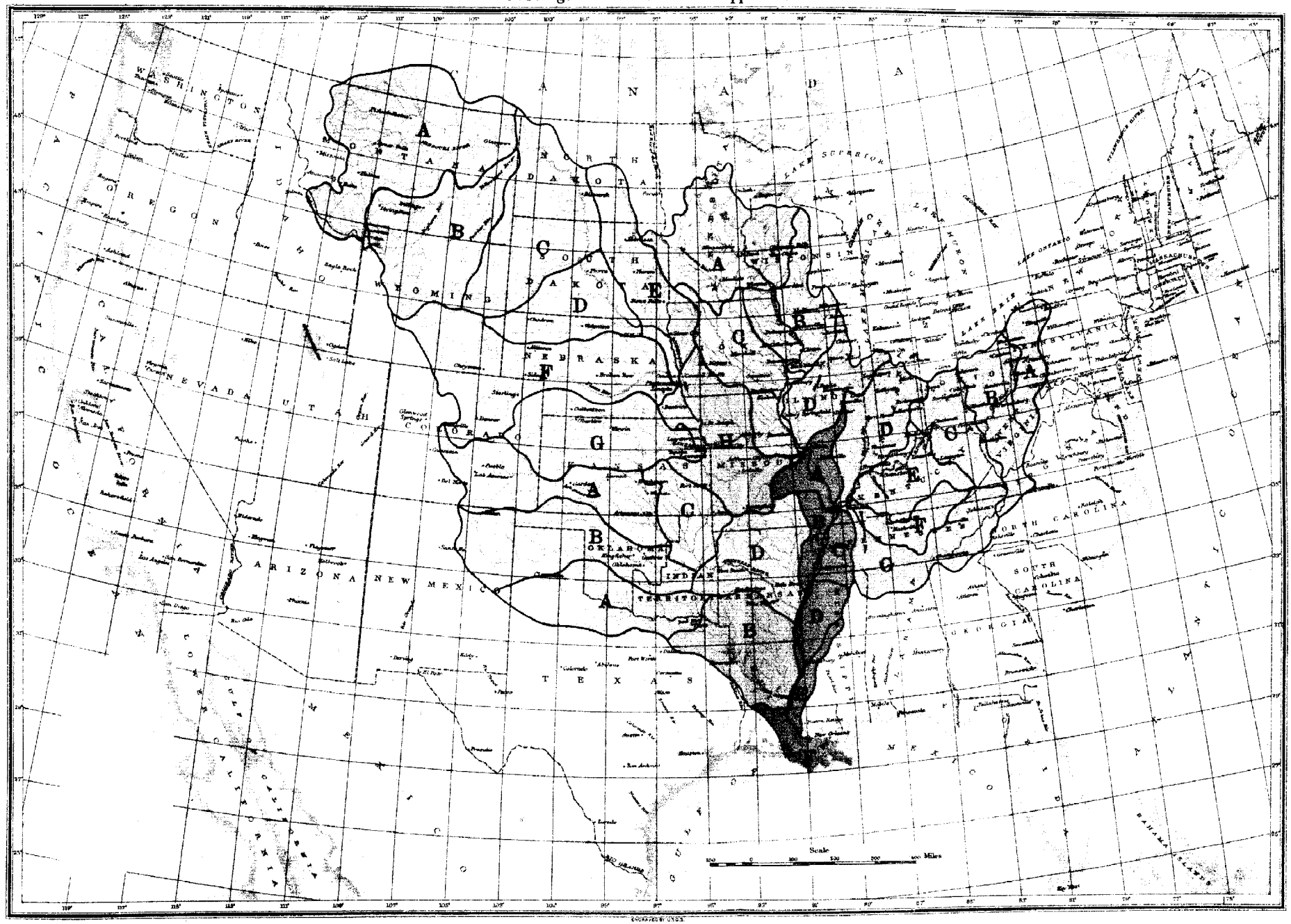
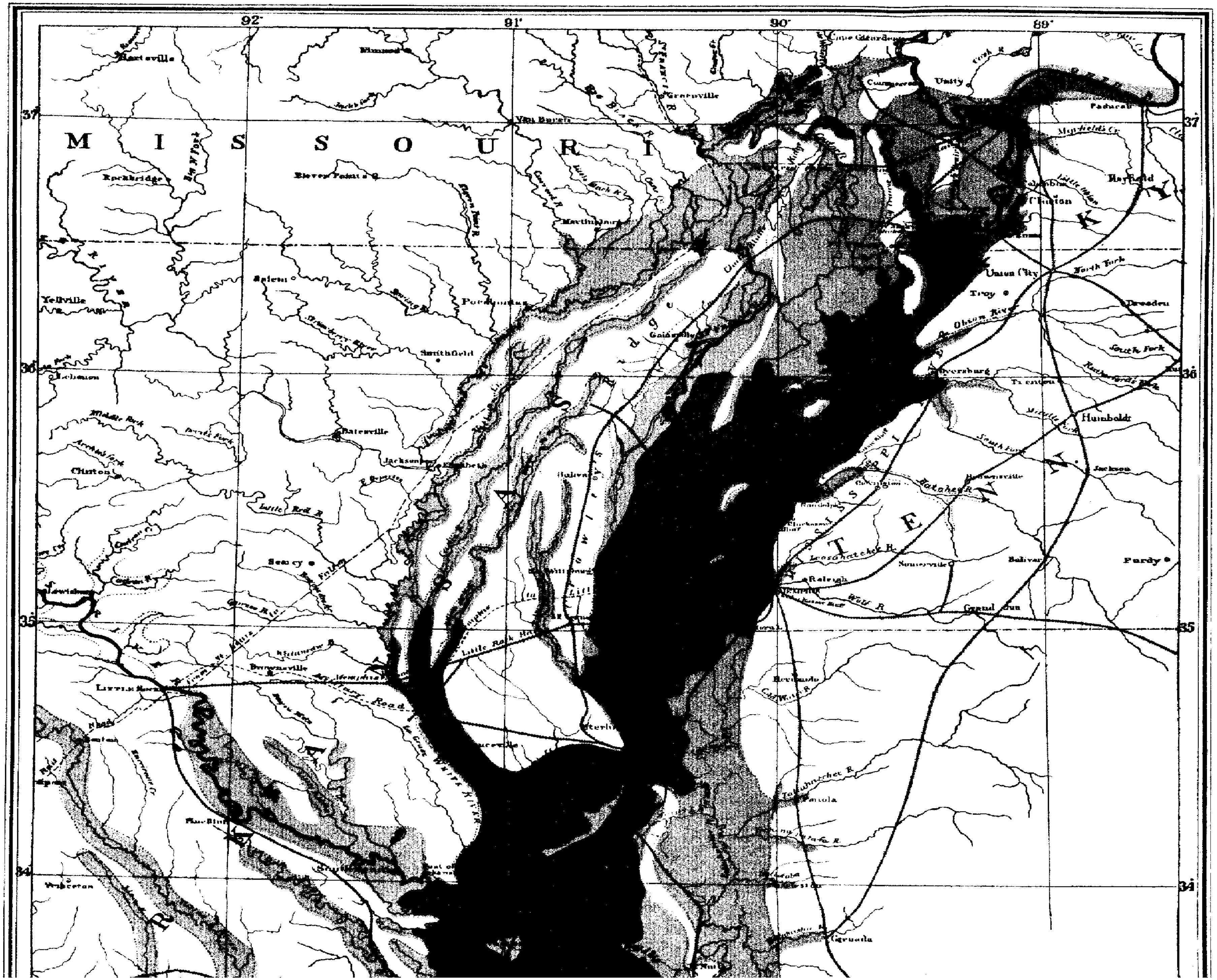
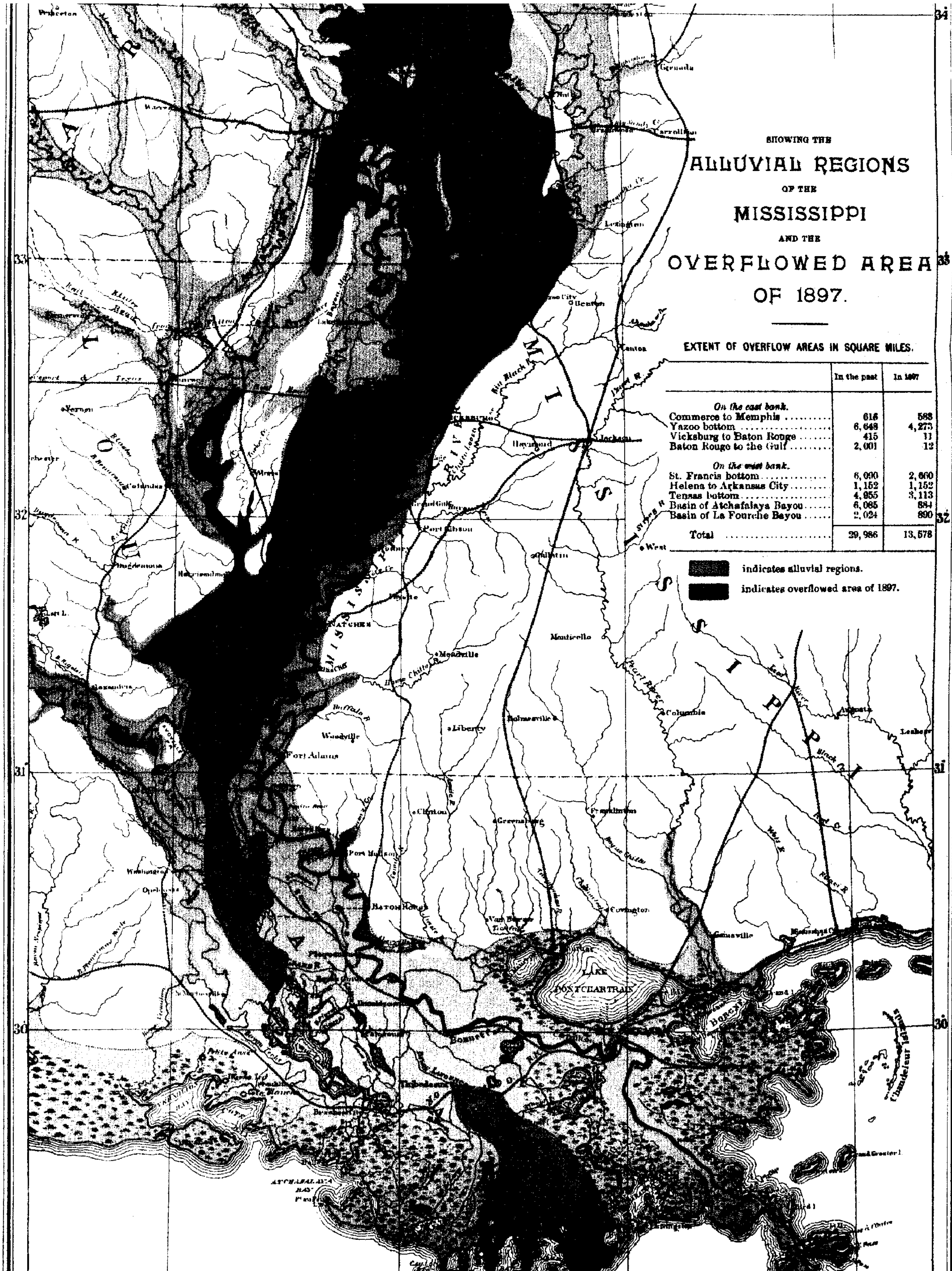


Plate V.


MISSOURI
TENN.
KY.
92°
91°
90°
89°
37°
36°
35°
34°
Batesville
Jacksonport
Smithfield
Pocahontas
Salem
Yellville
Rockbridge
Van Buren
Greenville
Cape Girardeau
Unity
Paducah
Clinton
Hickman
Union City
Troy
Dresden
Humboldt
Jackson
Bolivar
Purdy
Somerville
Raleigh
Grand Jun
Searcy
Lewisburg
Little Rock
Little Red R.
White River
Dyersburg
Covington
Hatchee R.
Wolf R.
Mayfield Cr.
Obion River
South Fork
North Fork
Big N Fork
Eleven Points R.
Tallahatchee R.
Loosahatchee R.
Pine Bluff
Granada
Coldwater R.
Gainsville
Middle Fork
Clinton
Lebanon



	In the past	In 1897
On the east bank.		
Commerce to Memphis	616	583
Yazoo bottom	6,648	4,273
Vicksburg to Baton Rouge	415	11
Baton Rouge to the Gulf	2,001	12
On the west bank.		
St. Francis bottom	6,090	2,660
Helena to Arkansas City	1,152	1,152
Tensas bottom	4,955	3,113
Basin of Atchafalaya Bayou	6,085	884
Basin of La Fourche Bayou	2,024	890
Total	29,986	13,578

Plate VI.

Normal Hydrographs for the Year. (Stages Referred to the Plane of Lowest Water.)

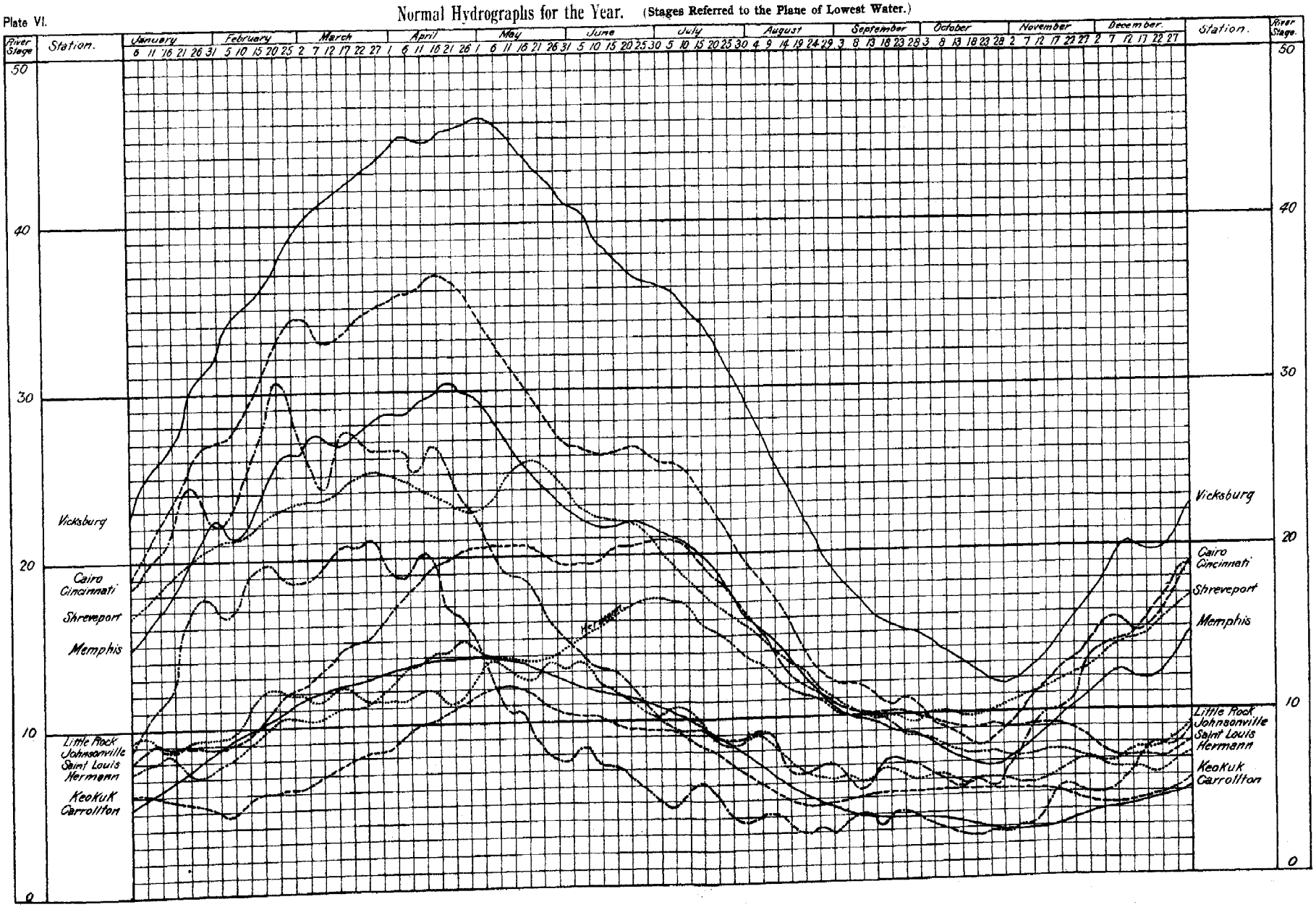


Plate VII.

Normal Annual Precipitation.

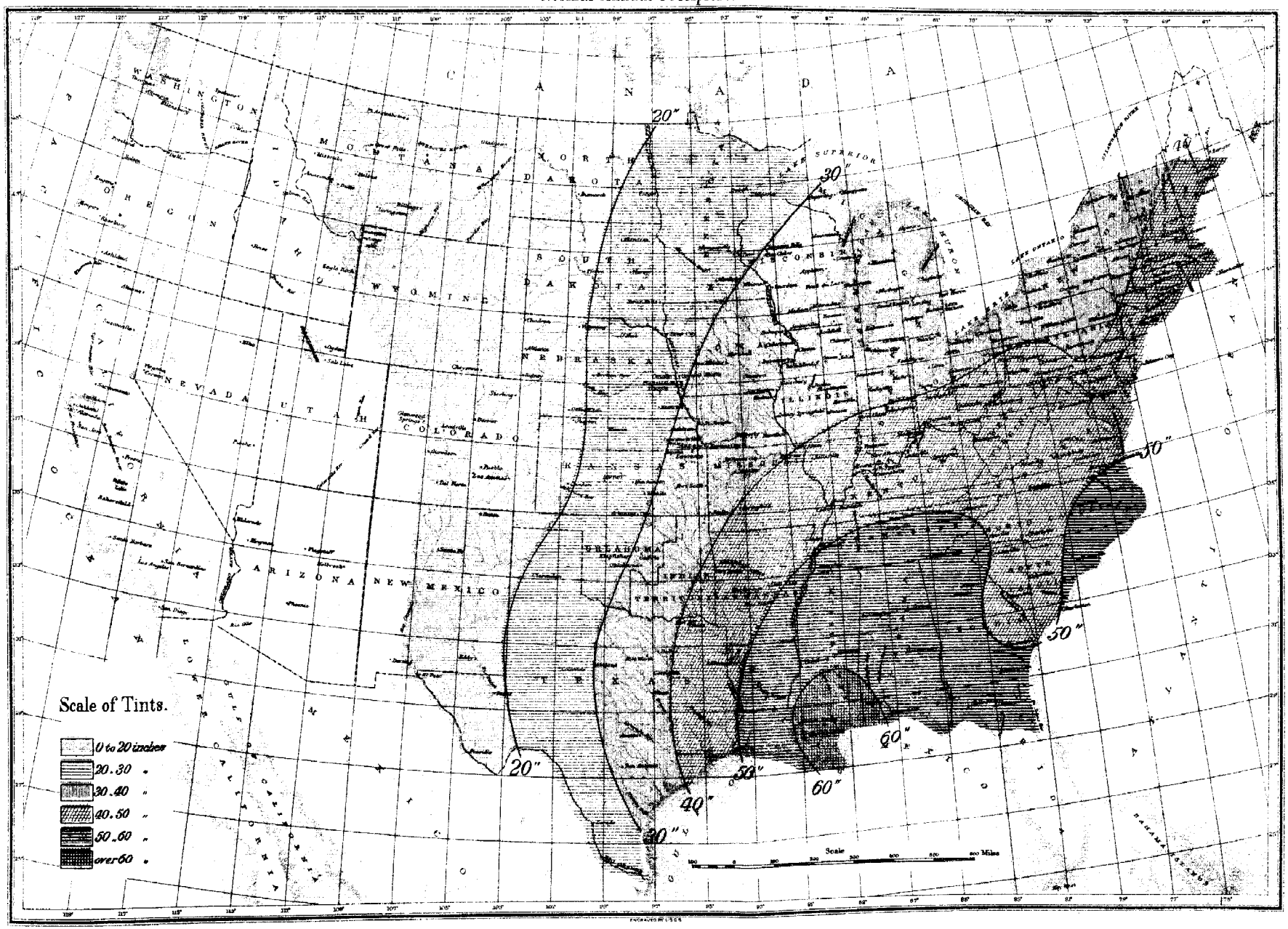


Plate VIII.

Normal Precipitation for January.

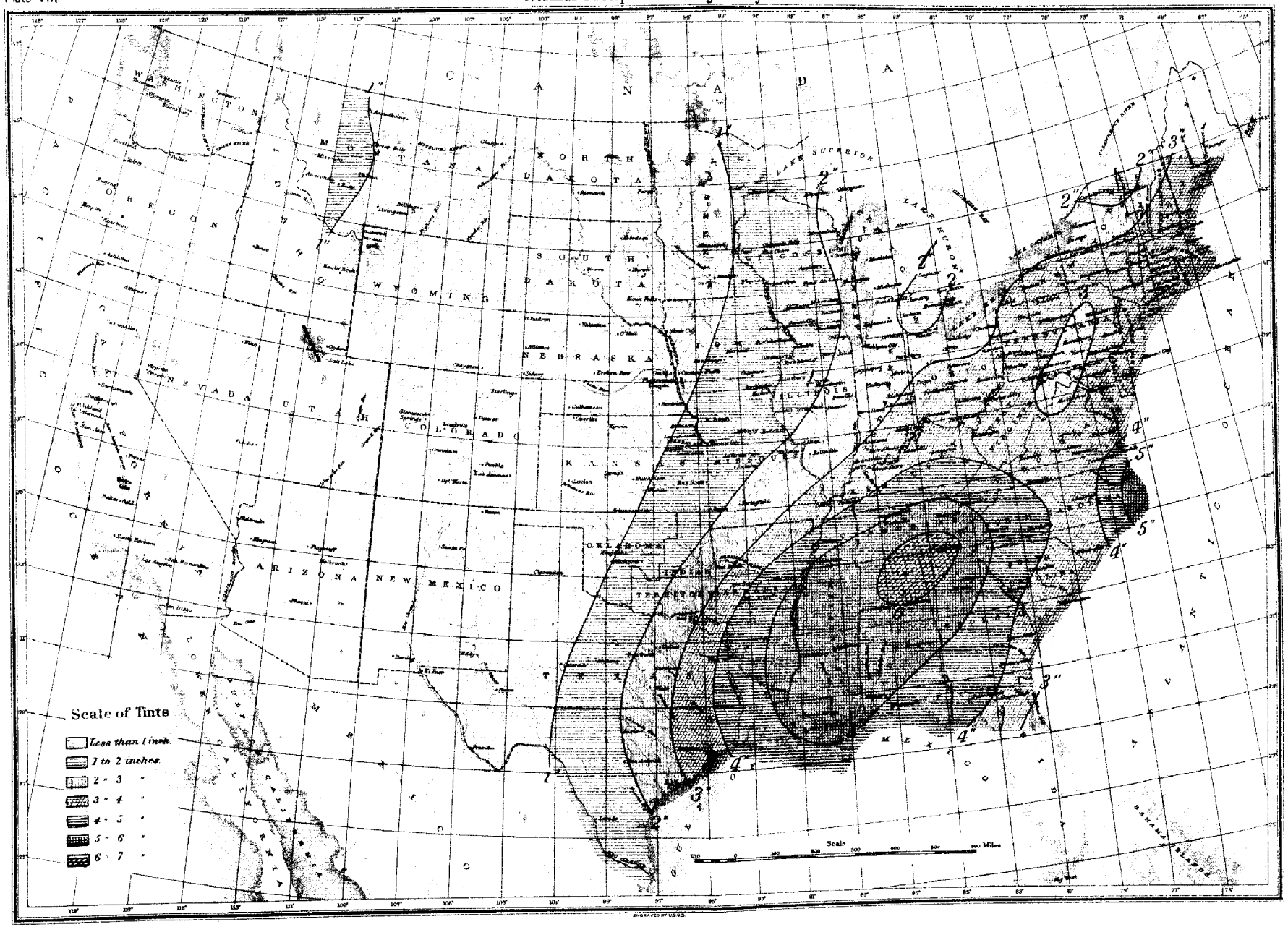


Plate IX.

Normal Precipitation for February.

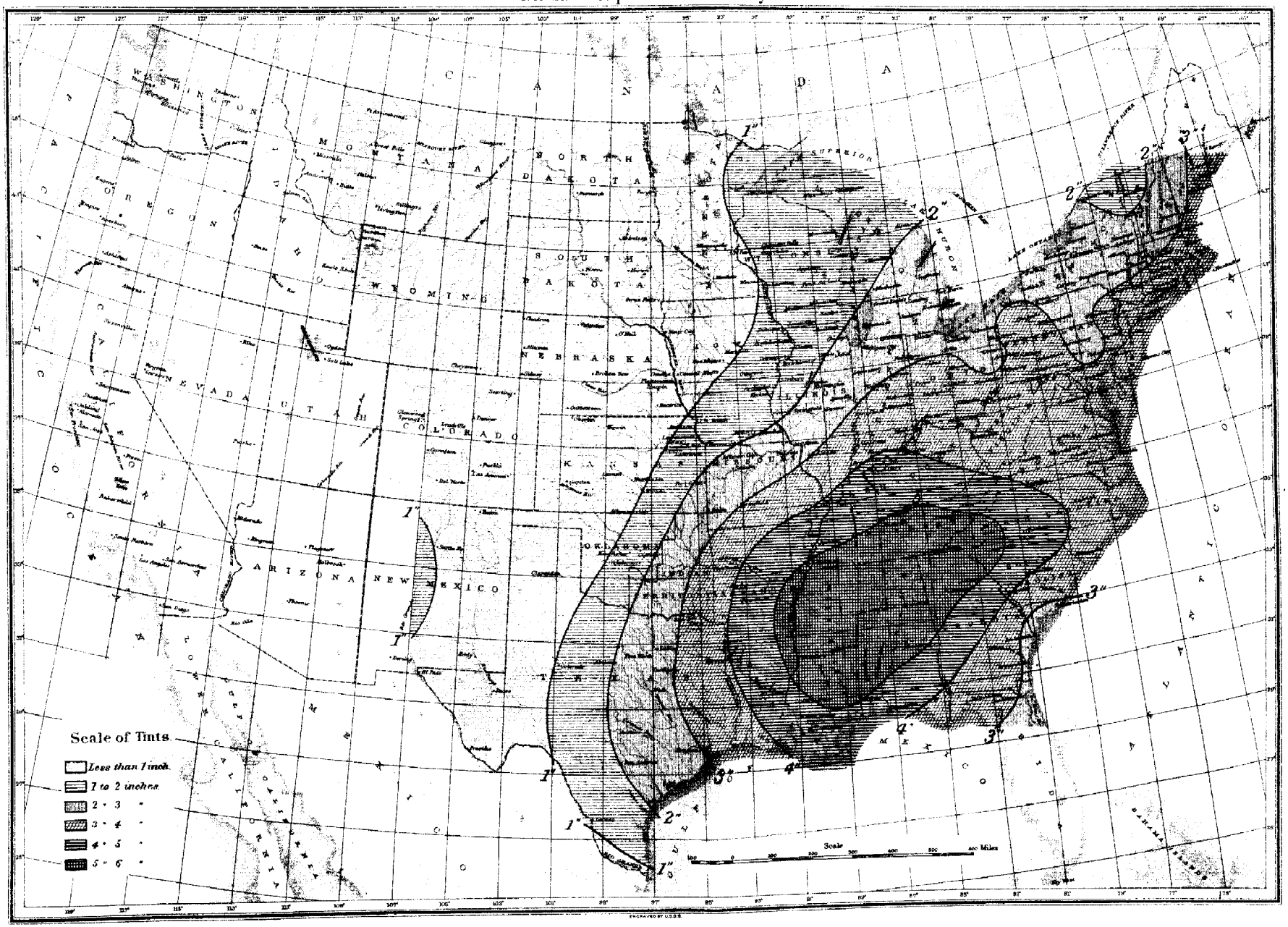


Plate X.

Normal Precipitation for March.

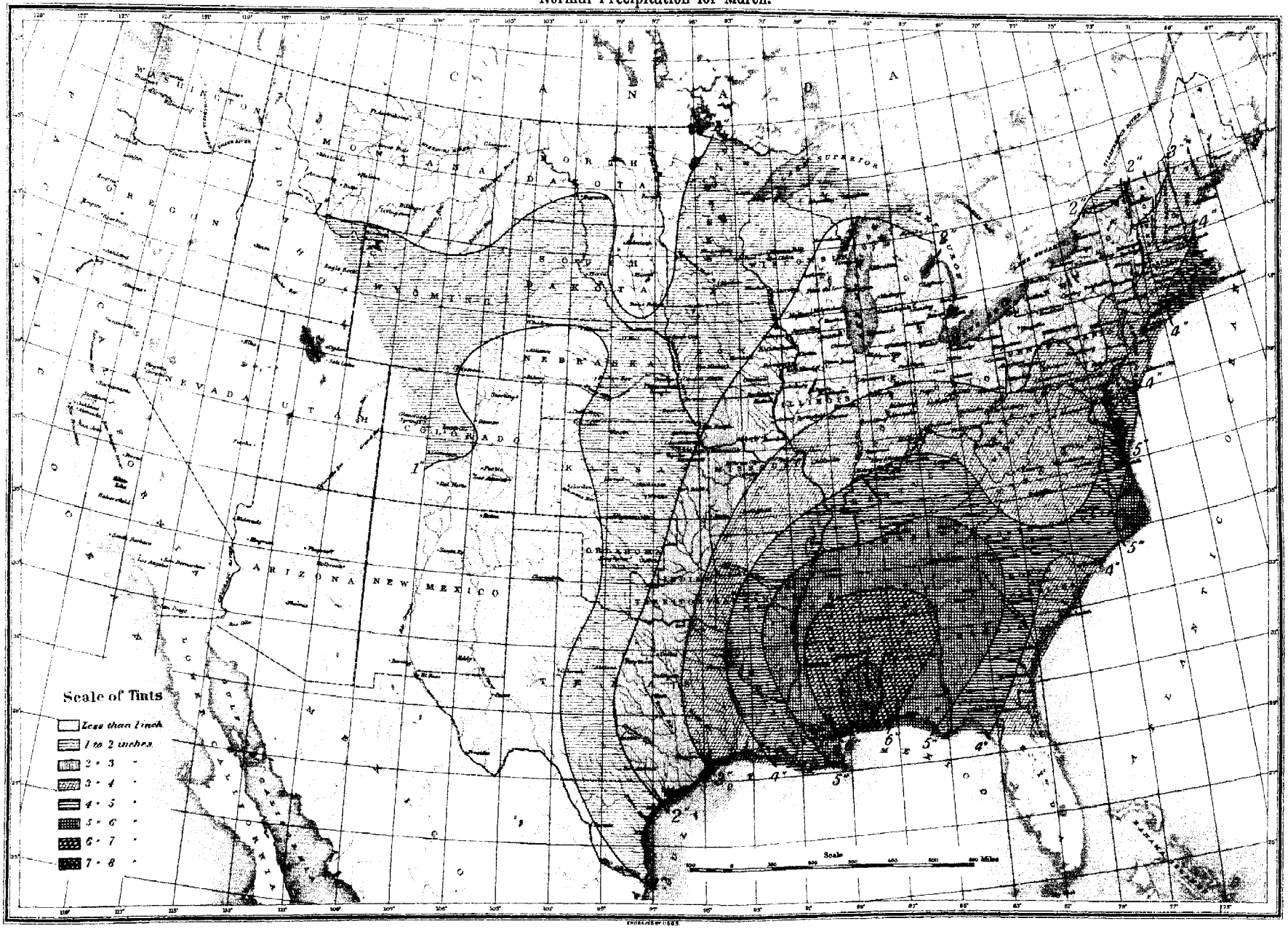


Plate XI.

Normal Precipitation for April.

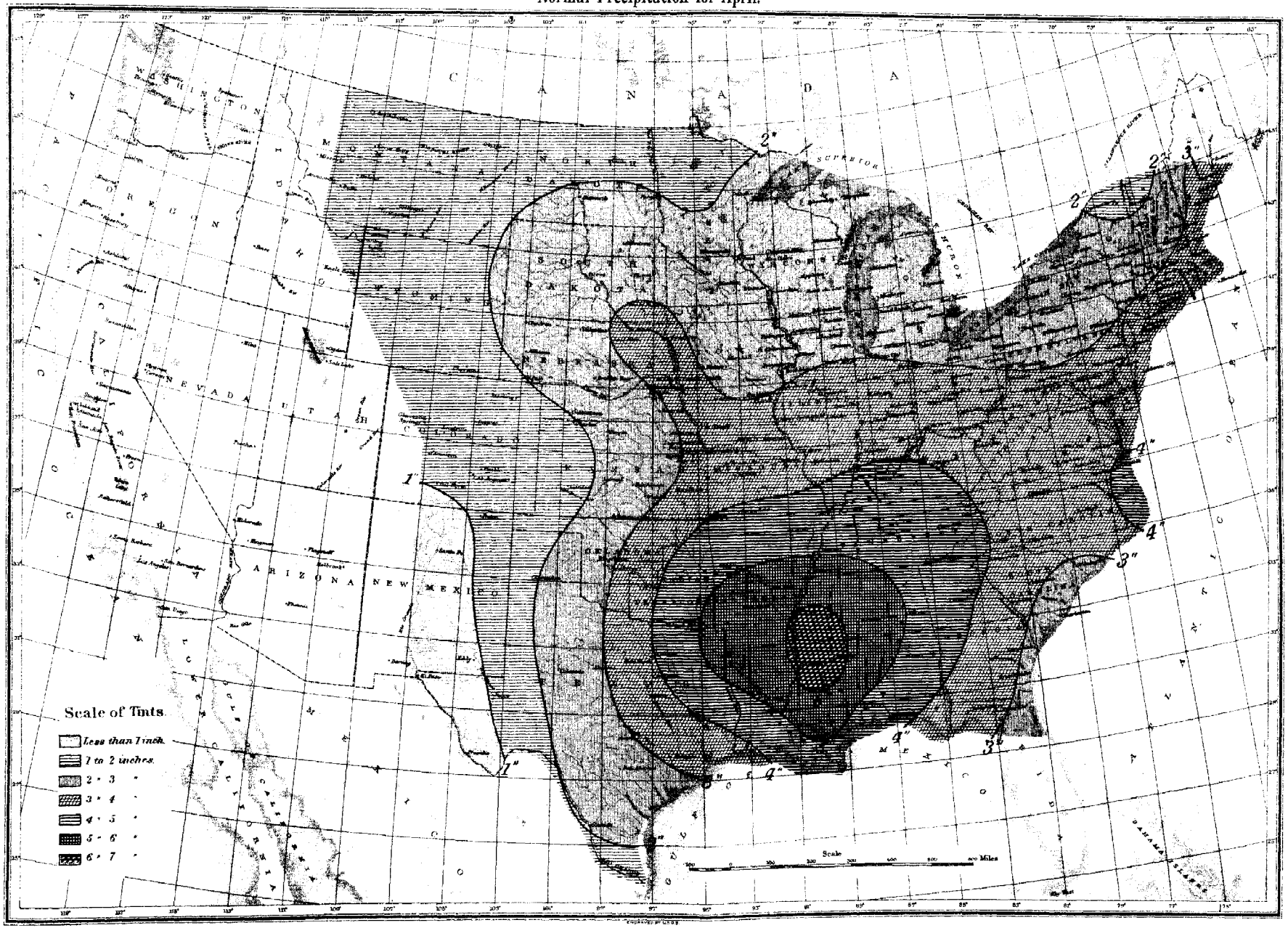


Plate XII.

Normal Precipitation for May.

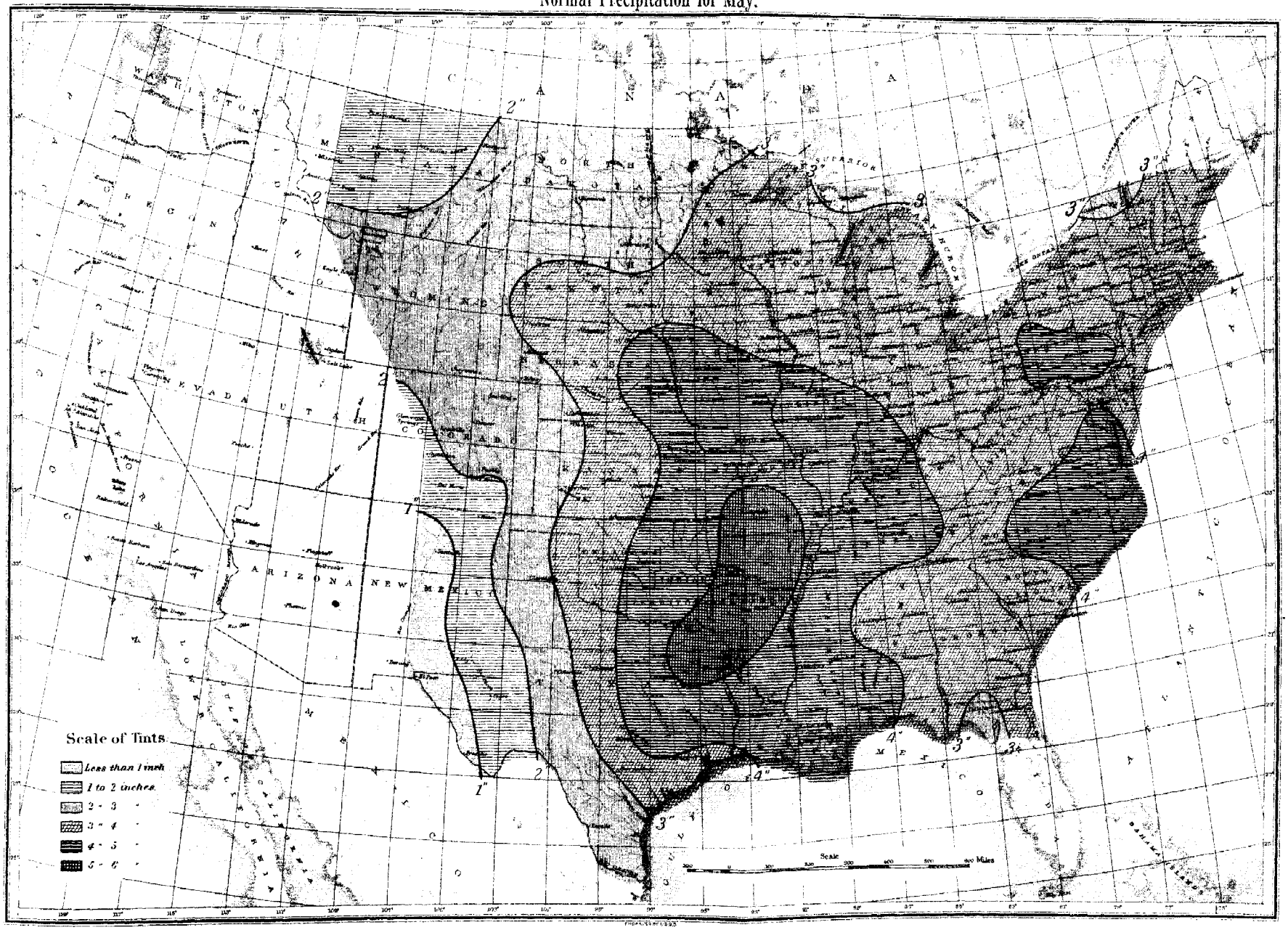


Plate XIII.

Normal Precipitation for June.

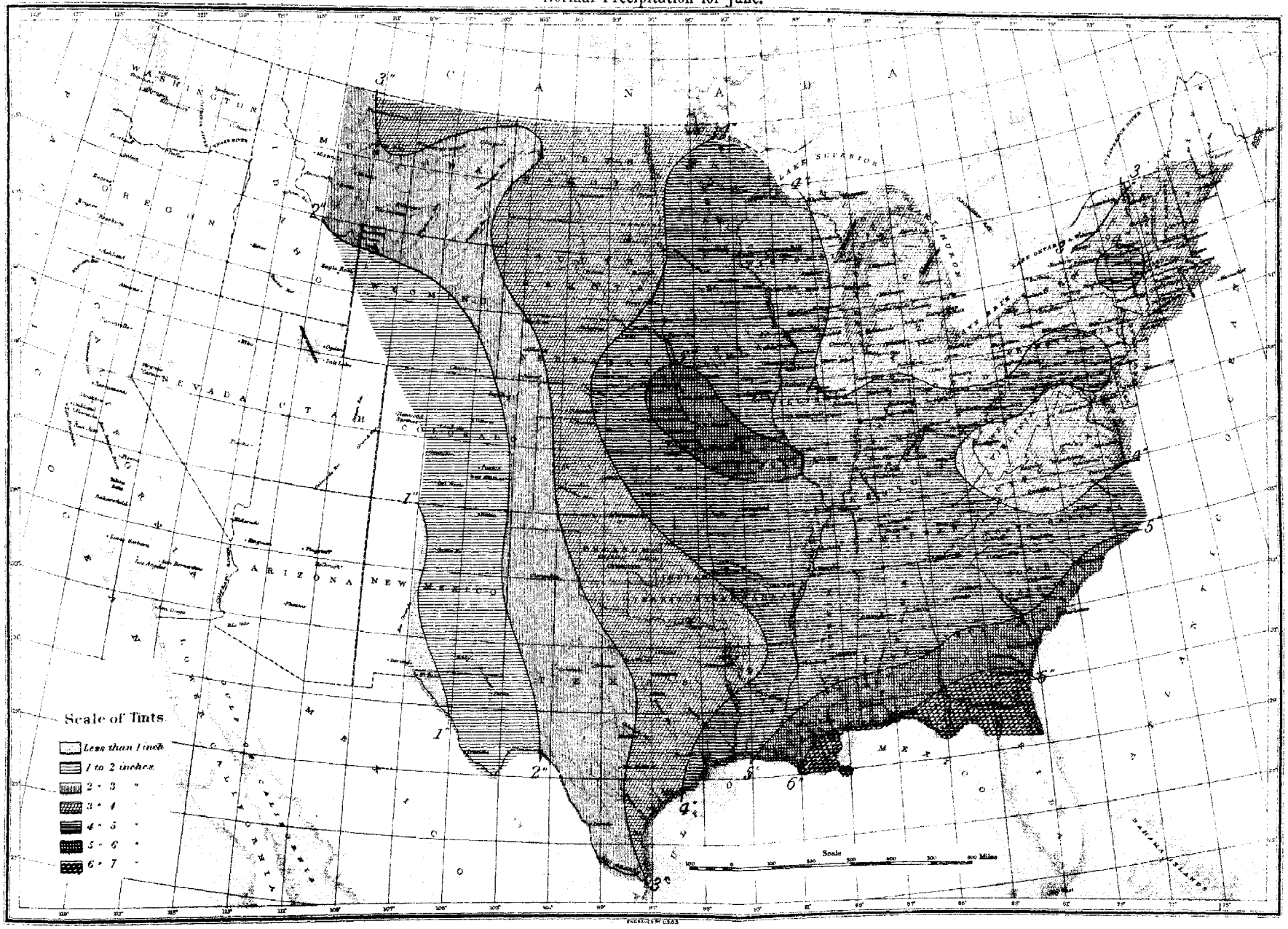


Plate XIV.

Normal Precipitation for July.

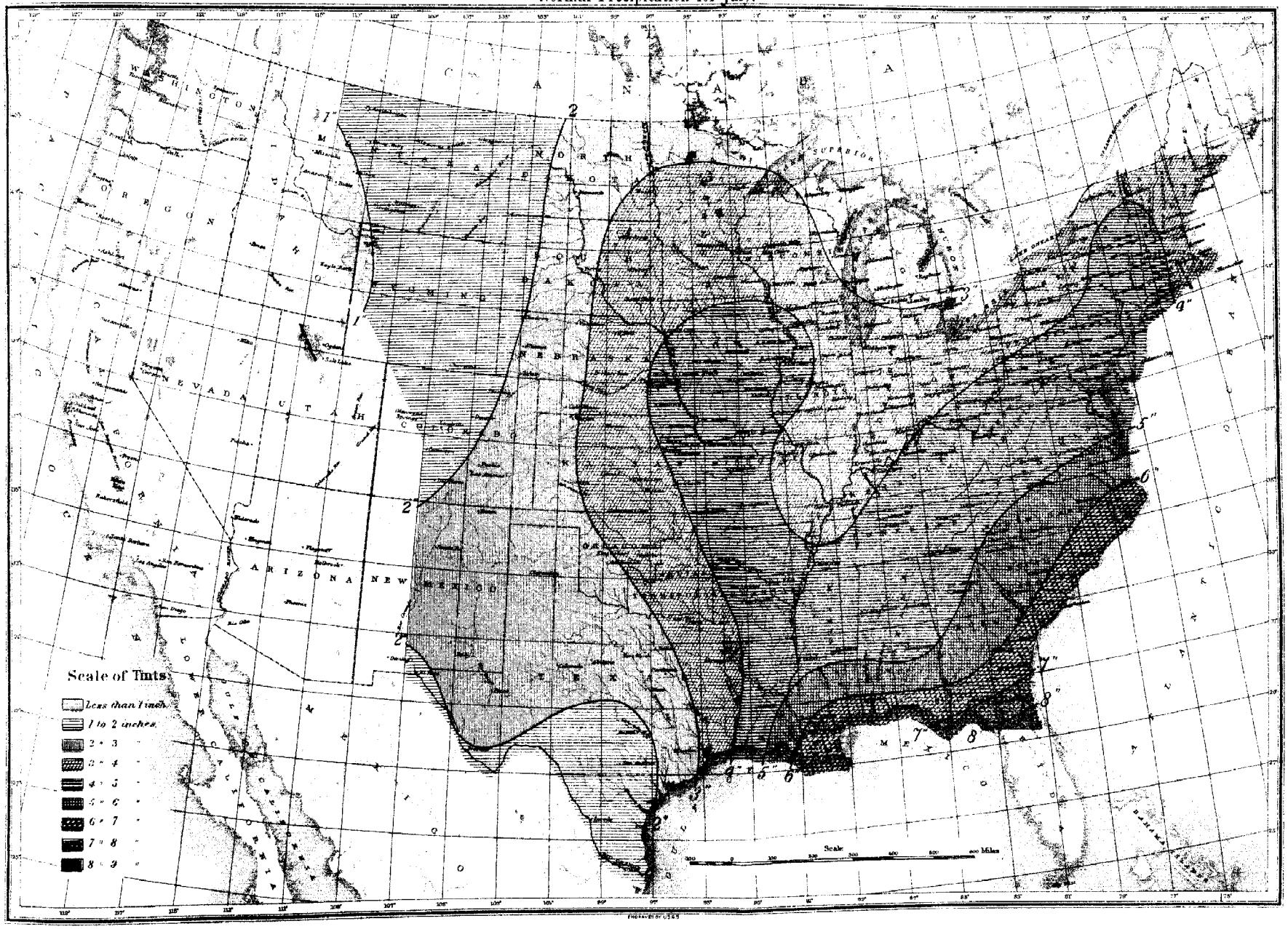


Plate XV.

Normal Precipitation for August.

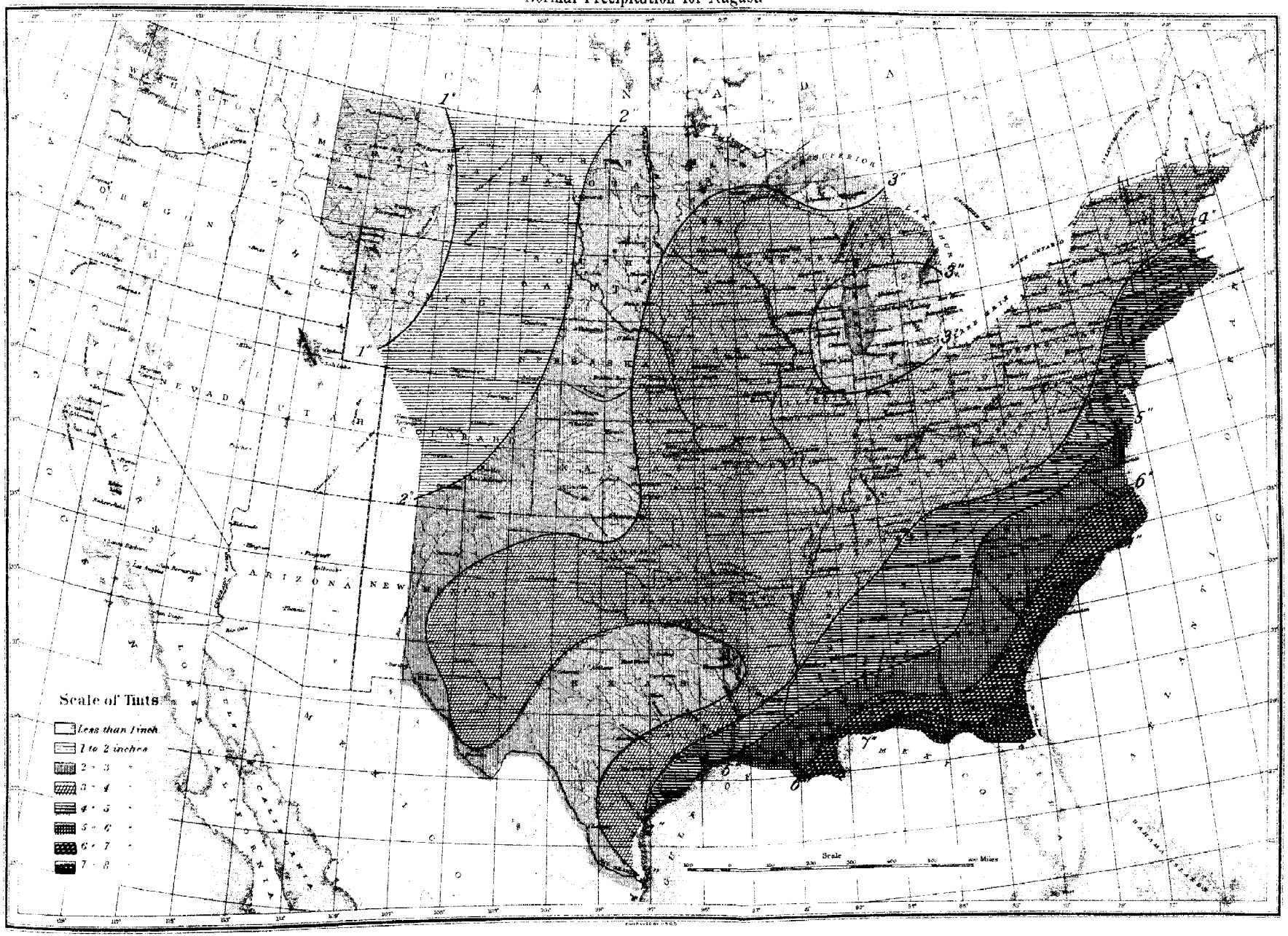


Plate XVI.

Normal Precipitation for September.

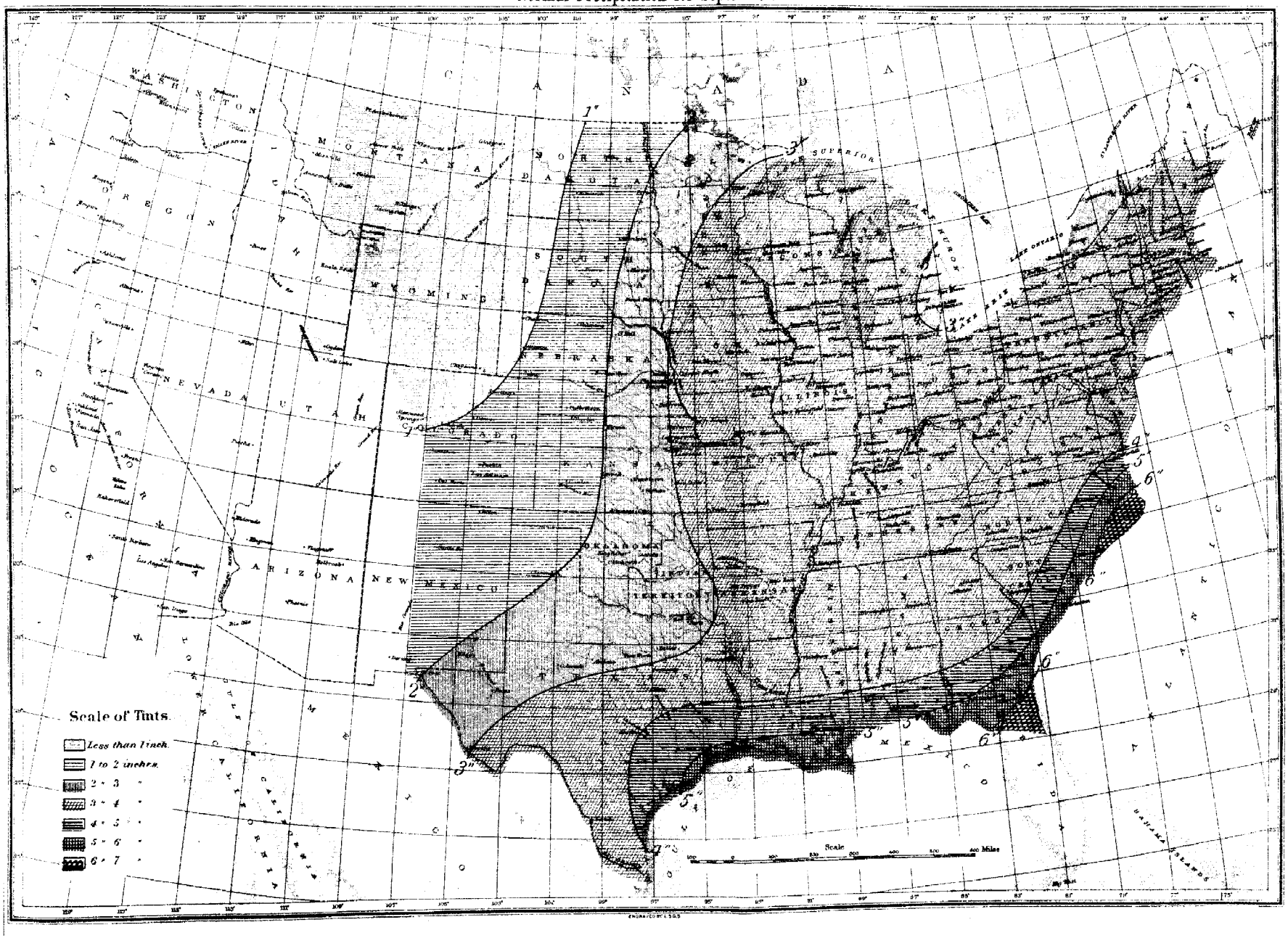


Plate XVII.

Normal Precipitation for October.

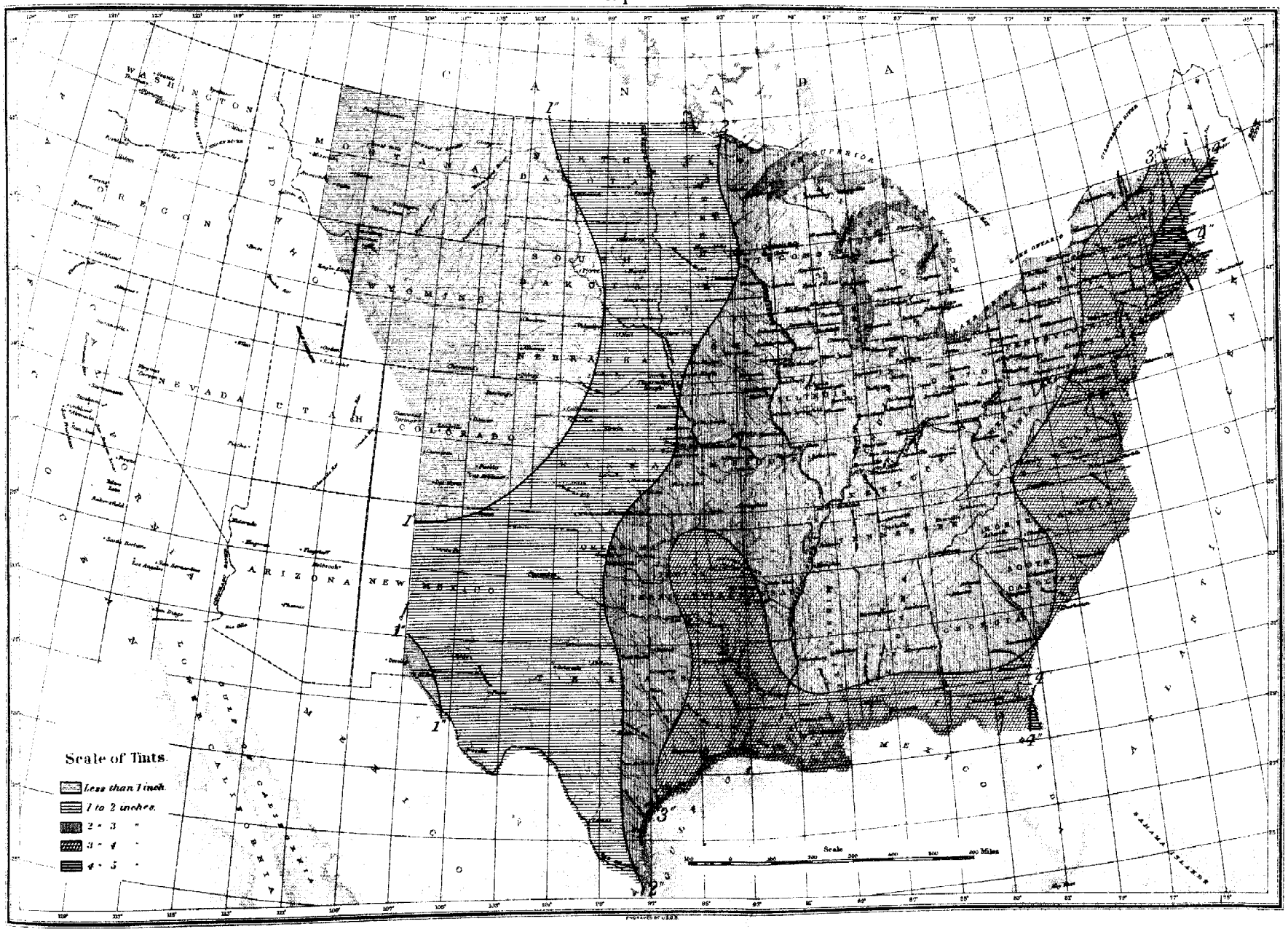


Plate XVIII.

Normal Precipitation for November.

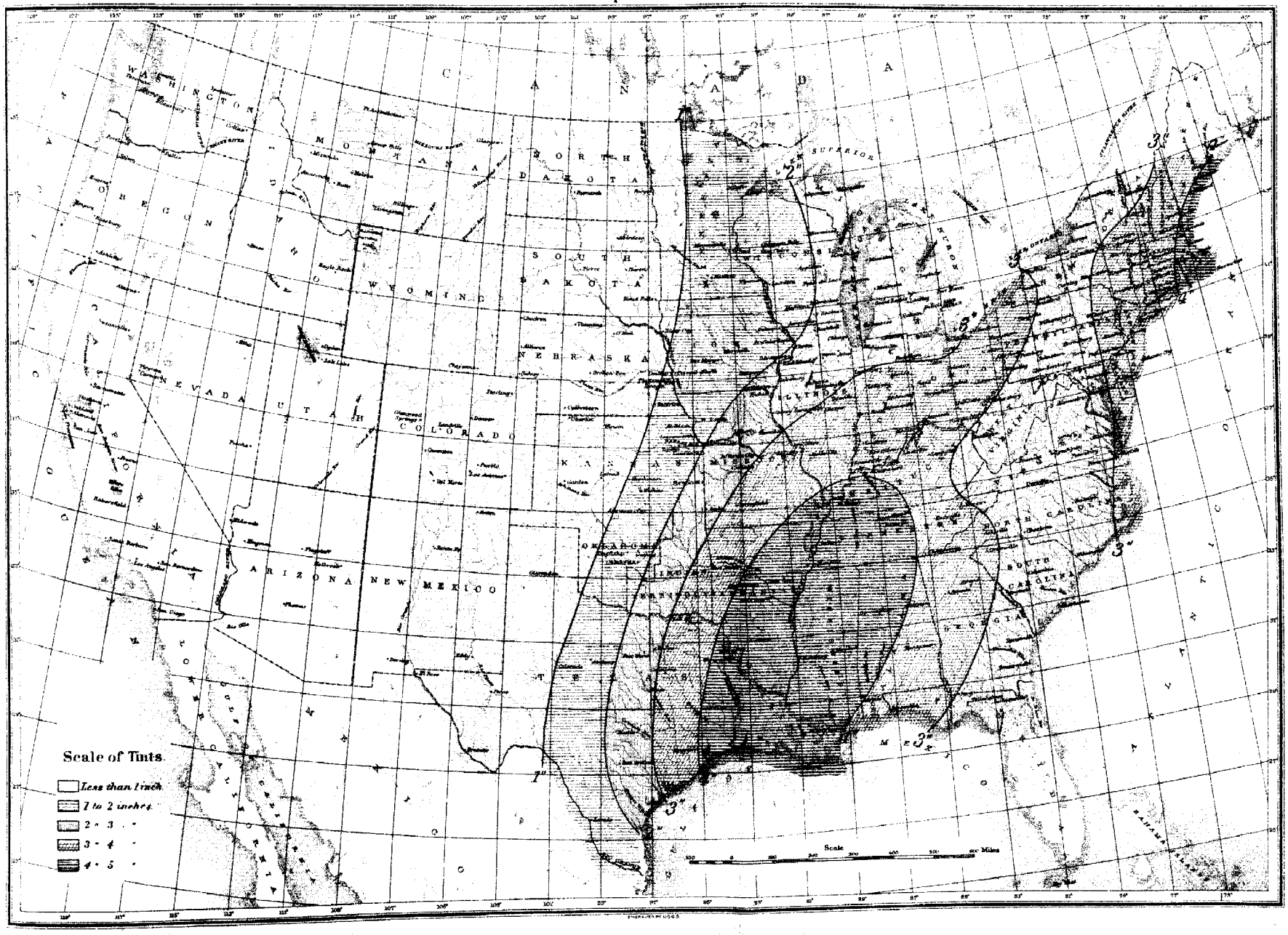


Plate XIX.

Normal Precipitation for December.

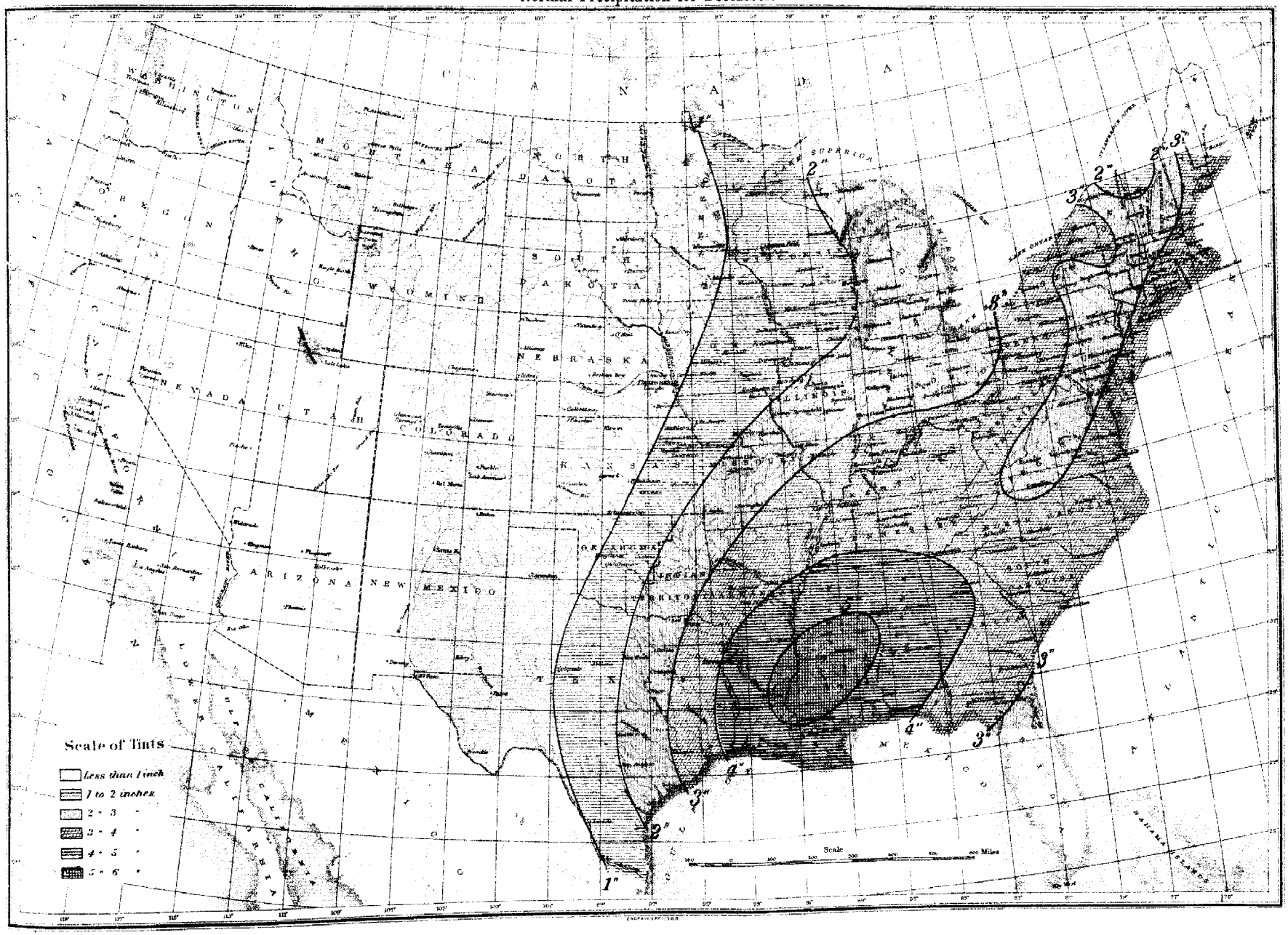


Plate XX.

Precipitation, January, 1882.

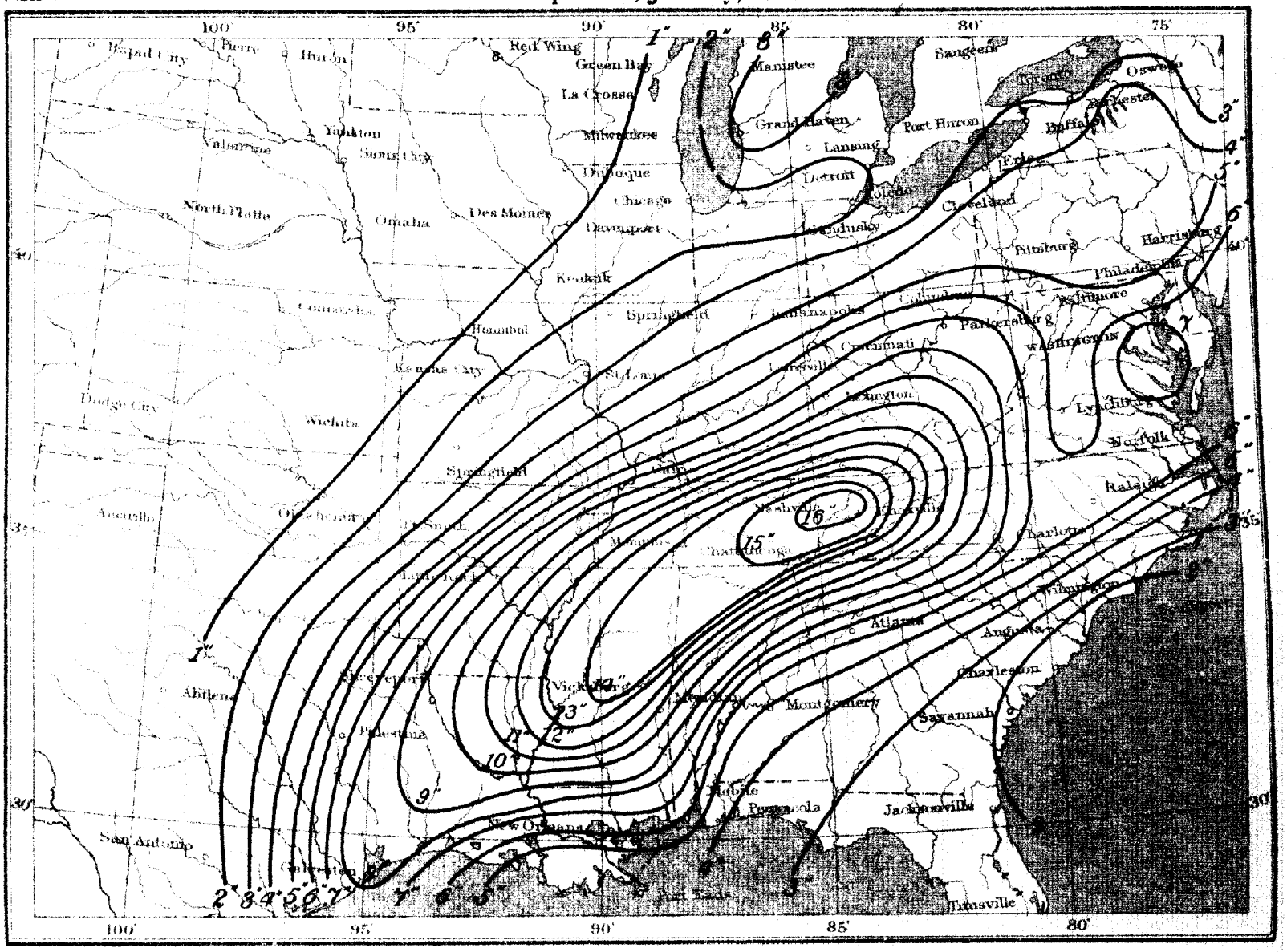


Plate XXI.

Precipitation, February, 1882.

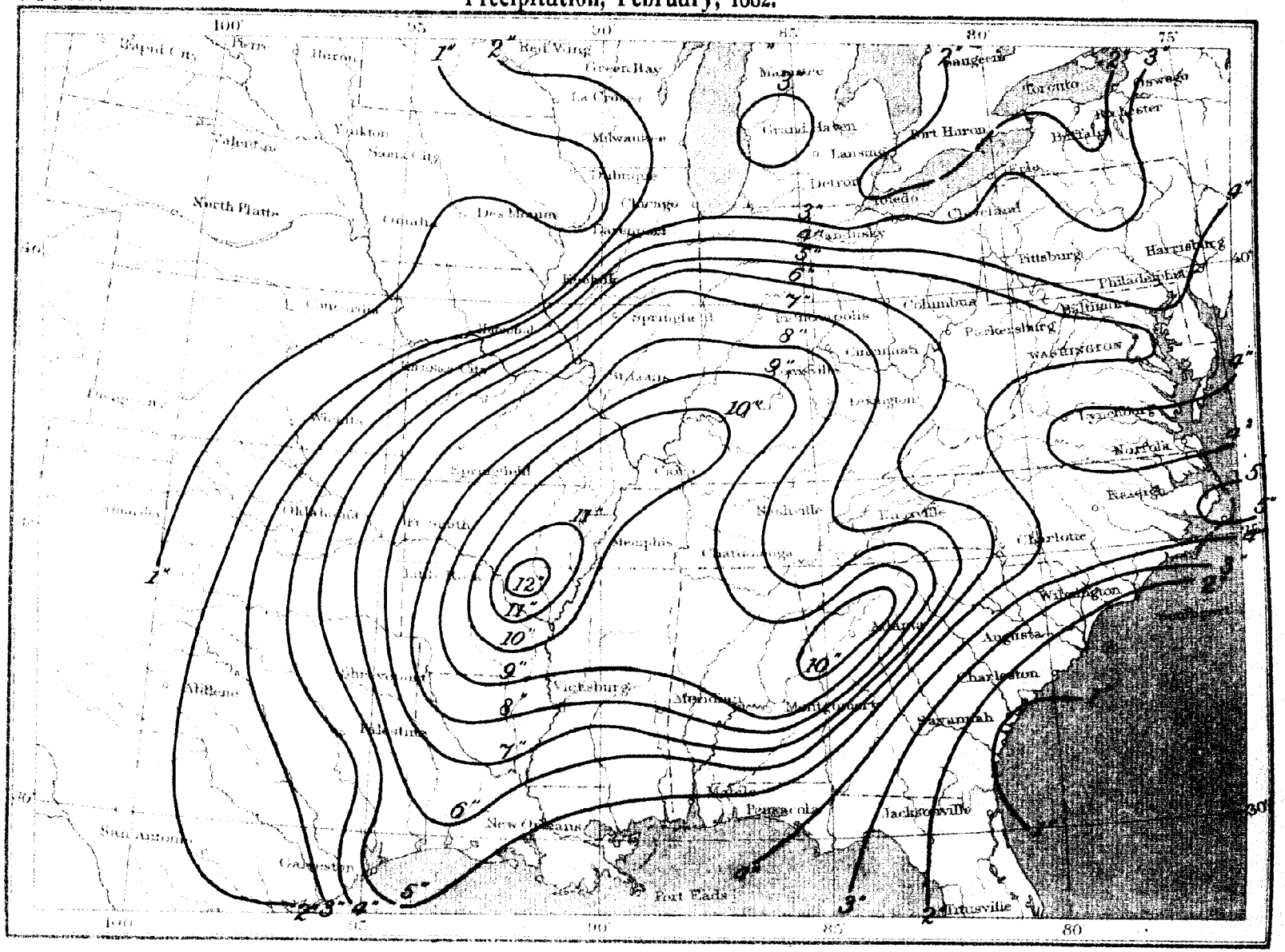


Plate XXII.

Precipitation, March, 1882.

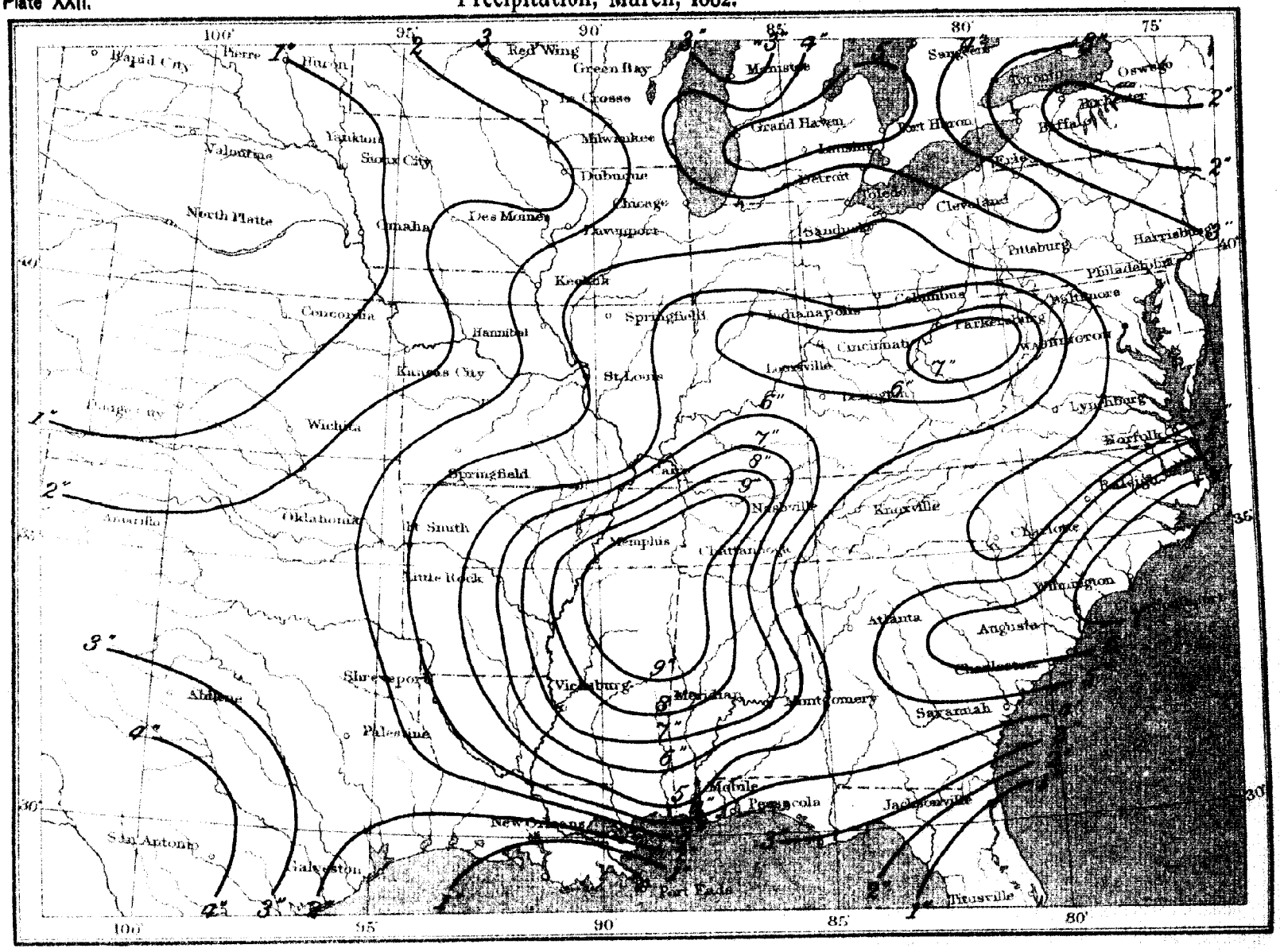


Plate XXIII.

Departure from Normal Precipitation, January, 1882.

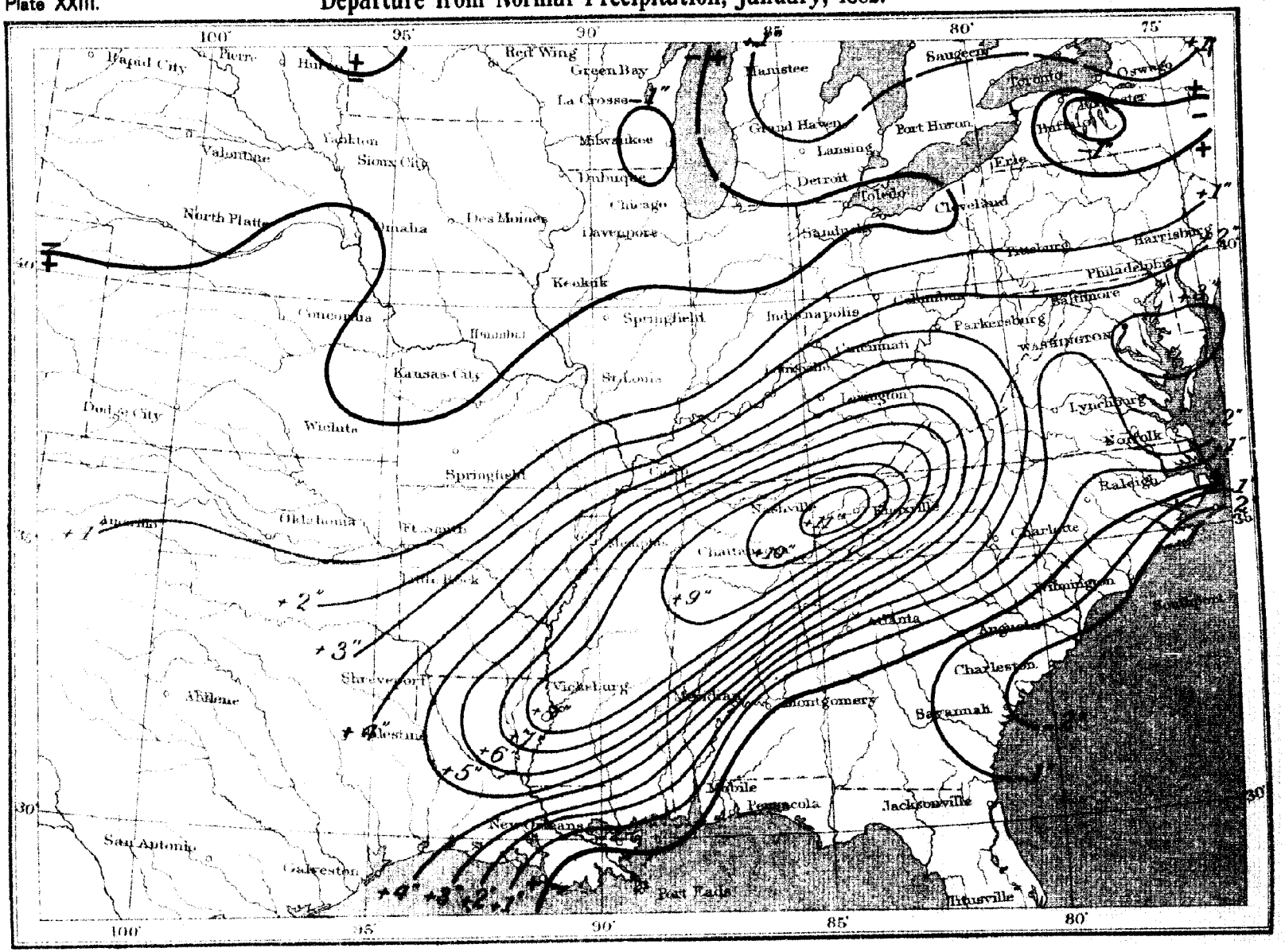


Plate XXIV.

Departure from Normal Precipitation, February, 1882.

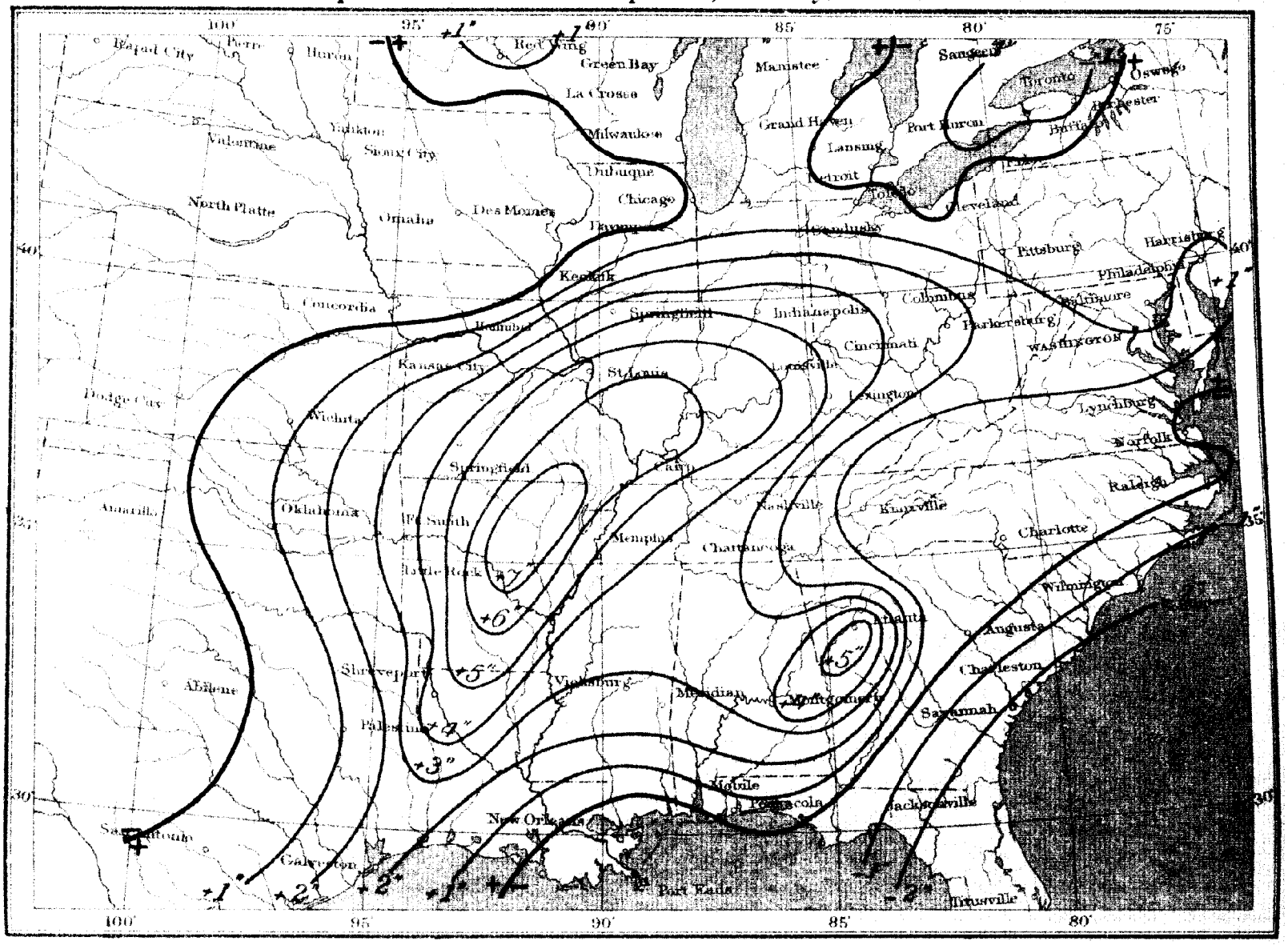


Plate XXV.

Departure from Normal Precipitation, January 1 to February 28, 1882.

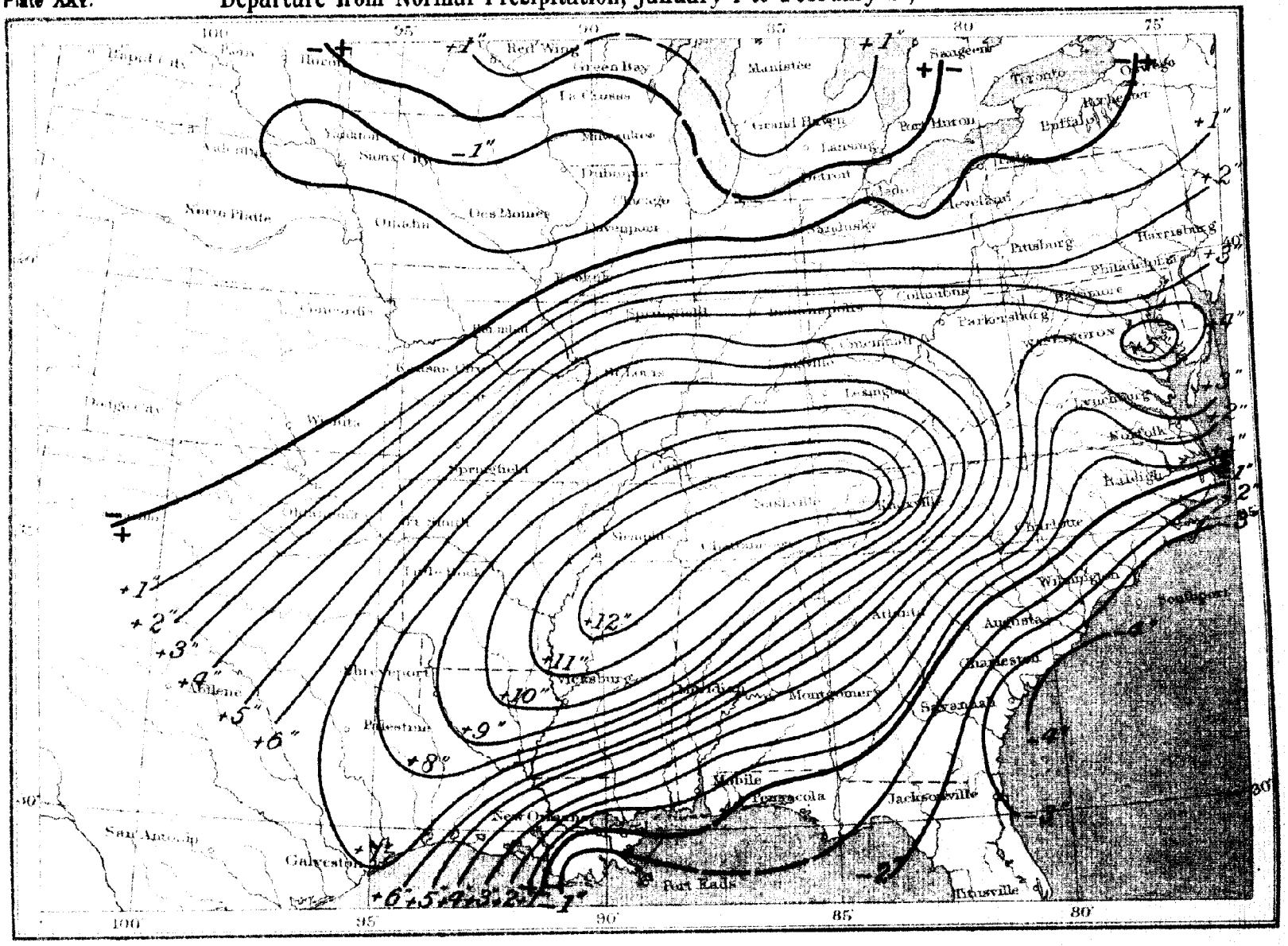


Plate XXVI.

Hydrographs for Flood of 1882.

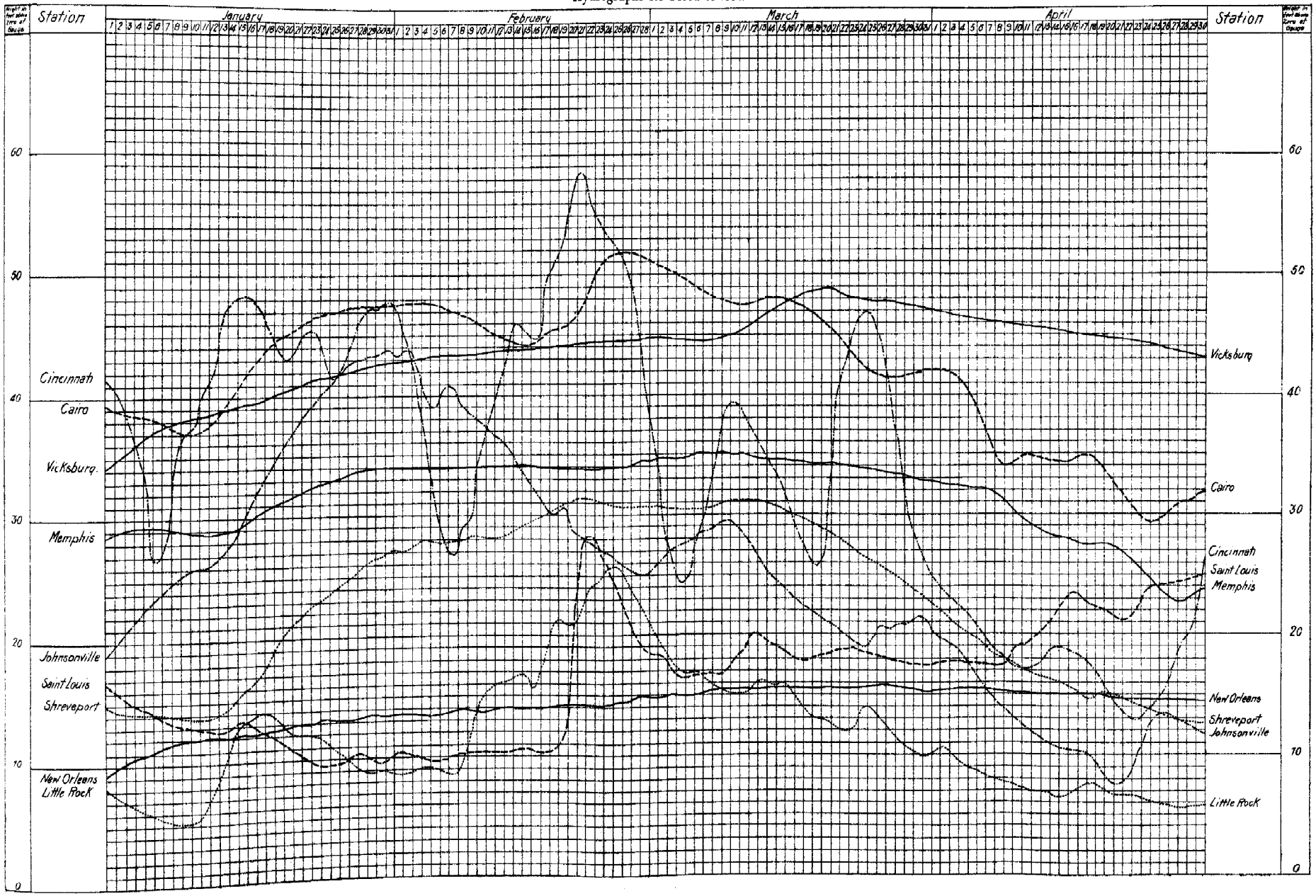


Plate XXVII.

Precipitation, January, 1883.

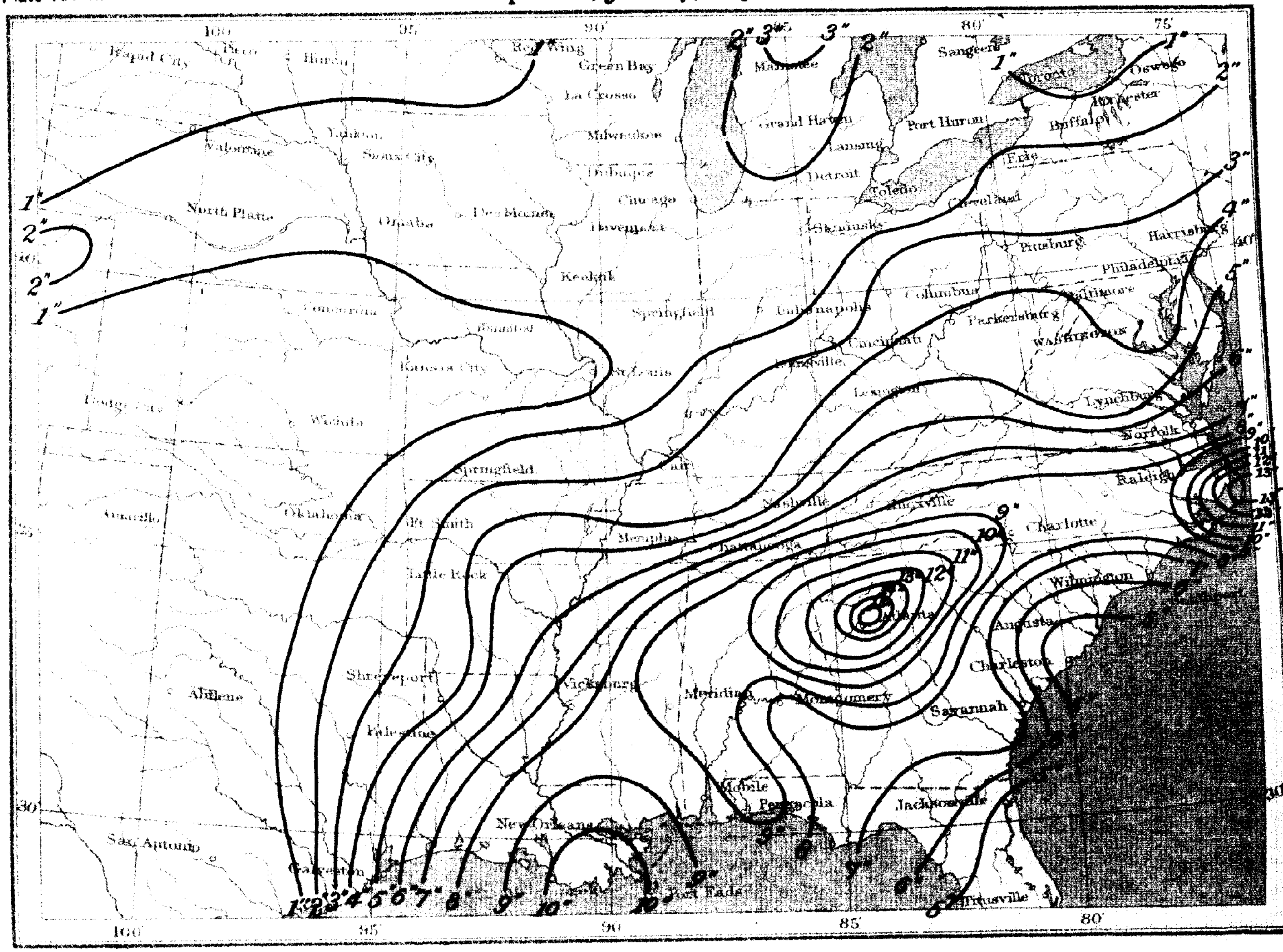


Plate XXVIII.

Precipitation, February, 1883.

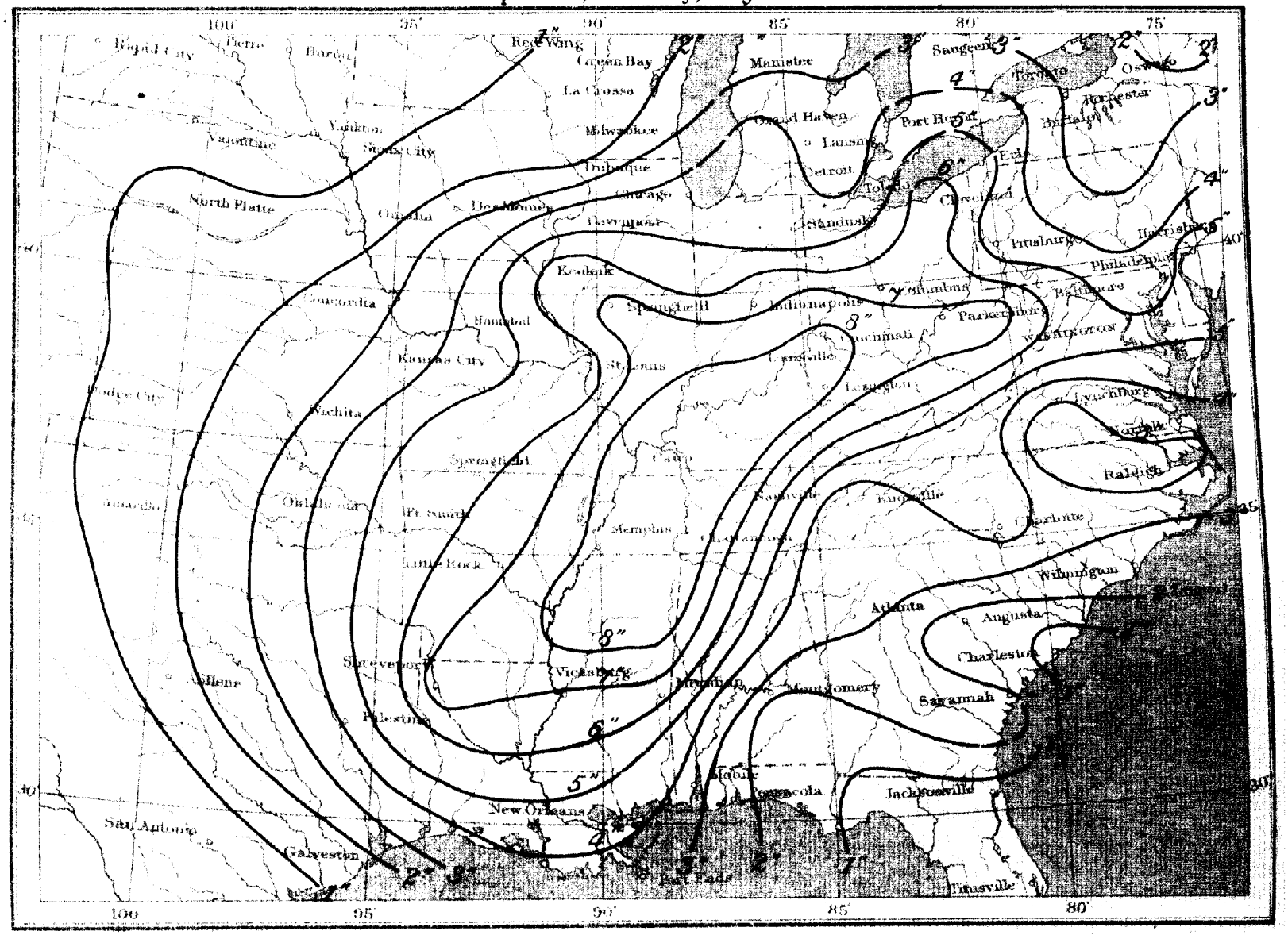


Plate XXIX.

Precipitation, March, 1883.

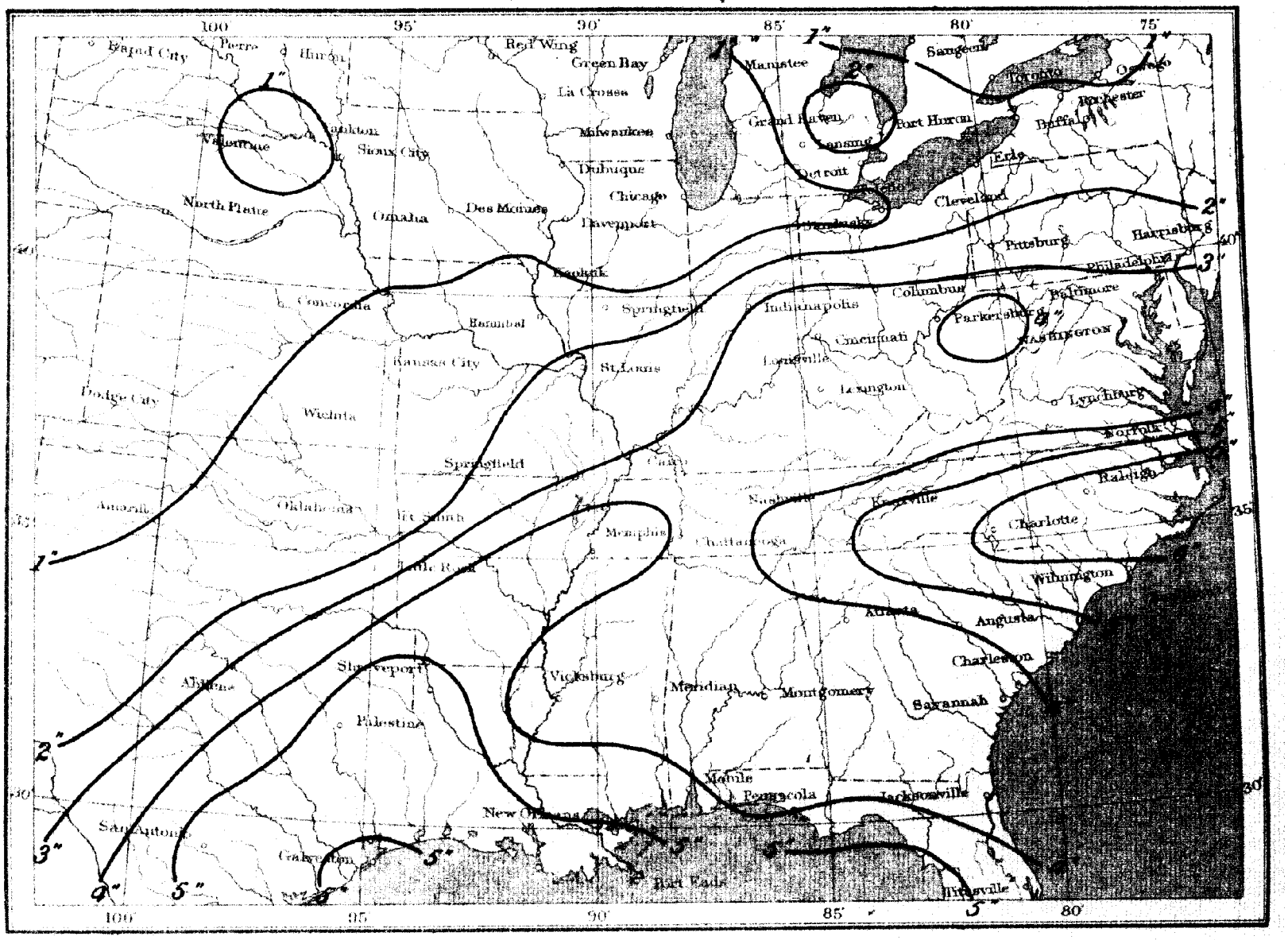


Plate XXX.

Departure from Normal Precipitation, January, 1883.

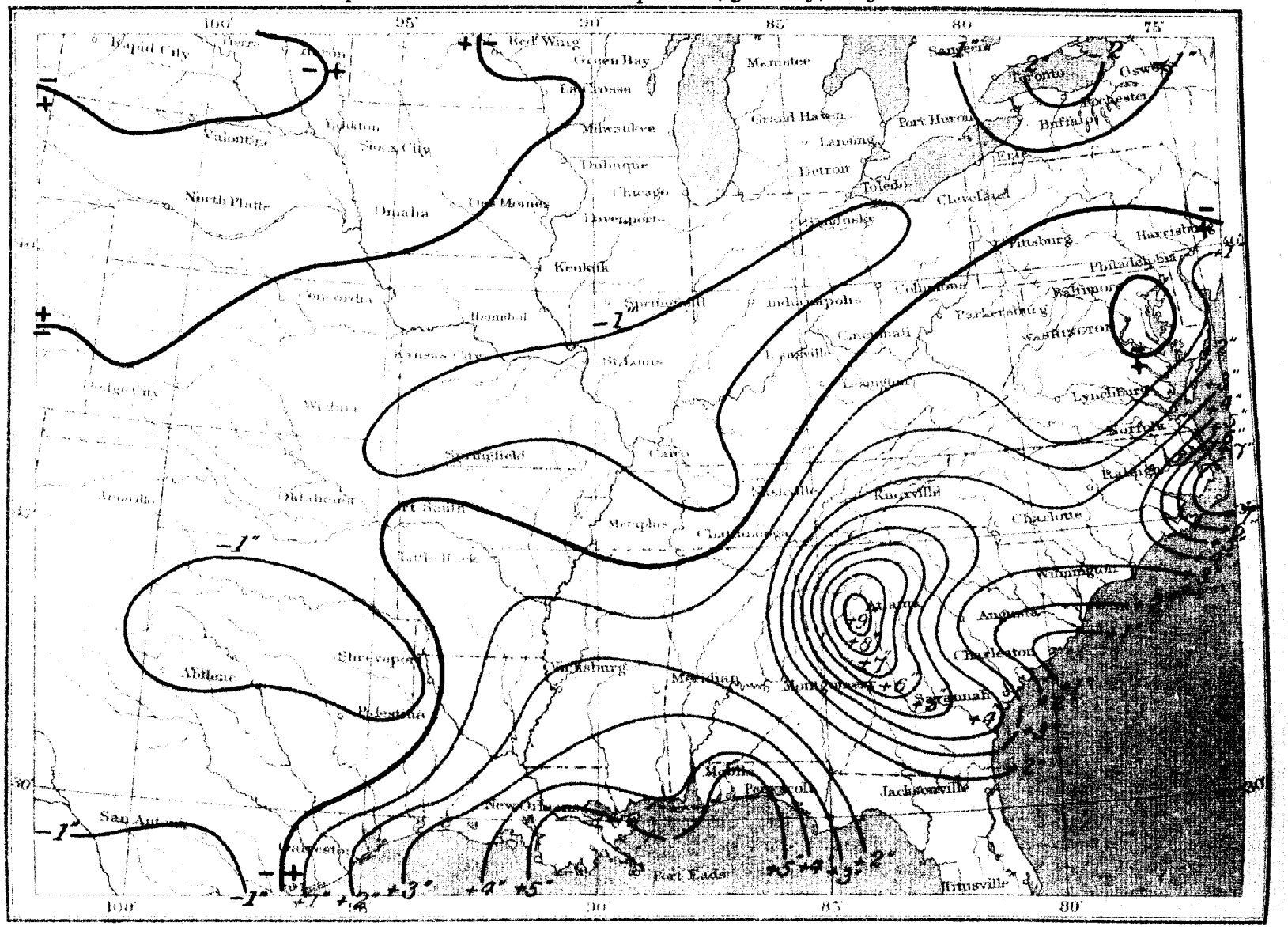


Plate XXXI.

Departure from Normal Precipitation, February, 1883.

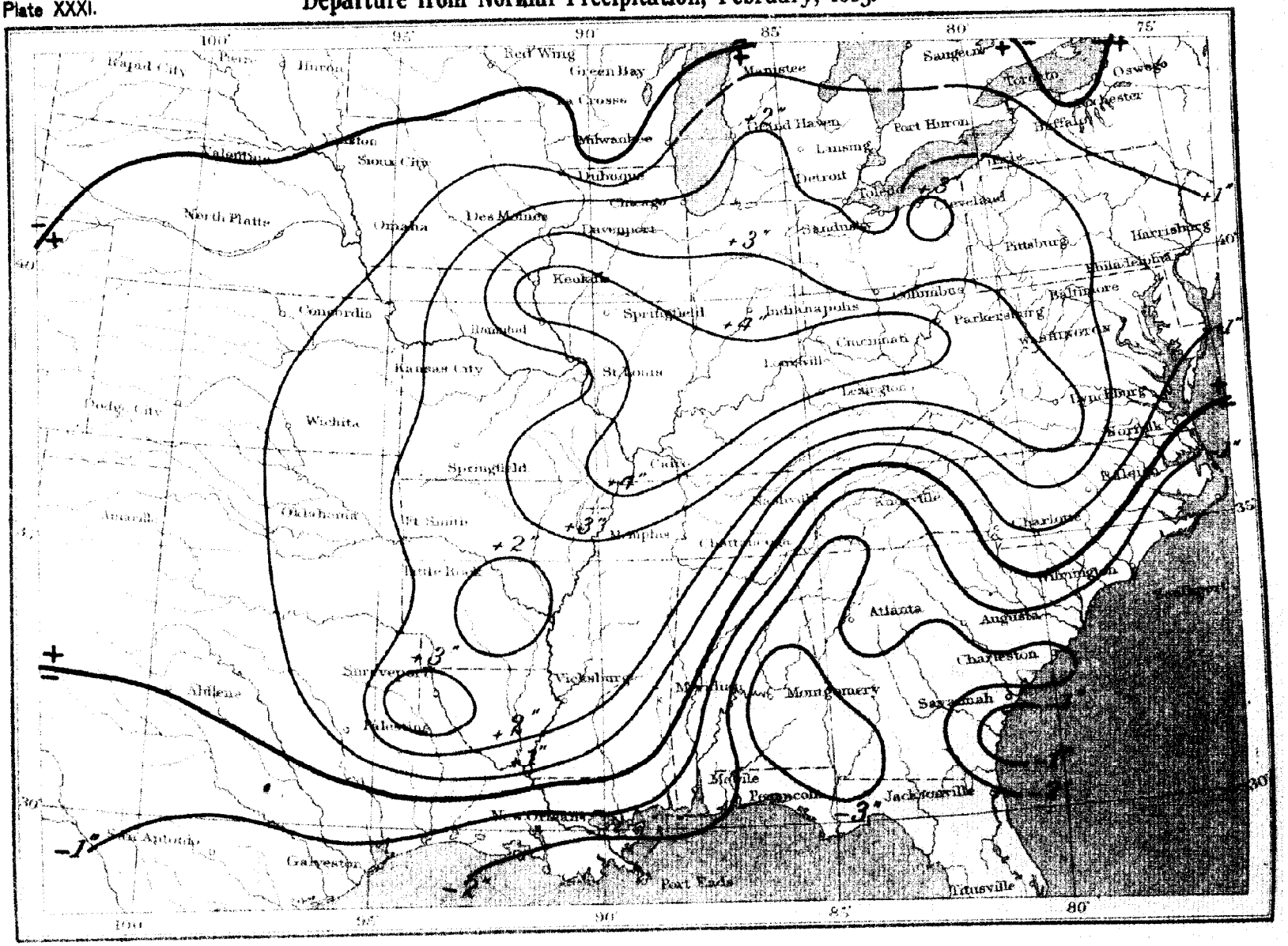


Plate XXXII. **Departure from Normal Precipitation, January 1 to February 28, 1883.**

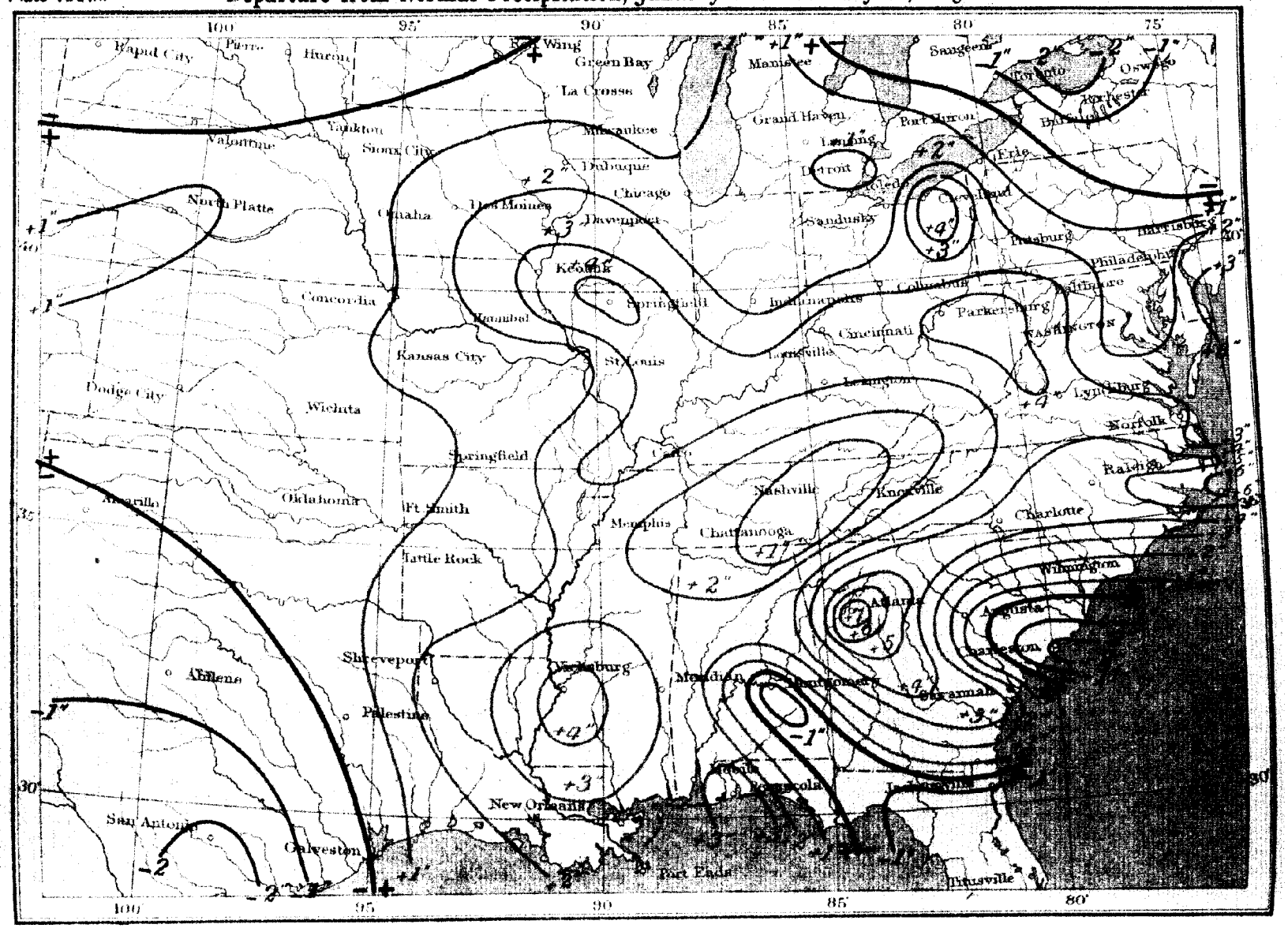


Plate XXXIII.

Hydrographs for Flood of 1883.

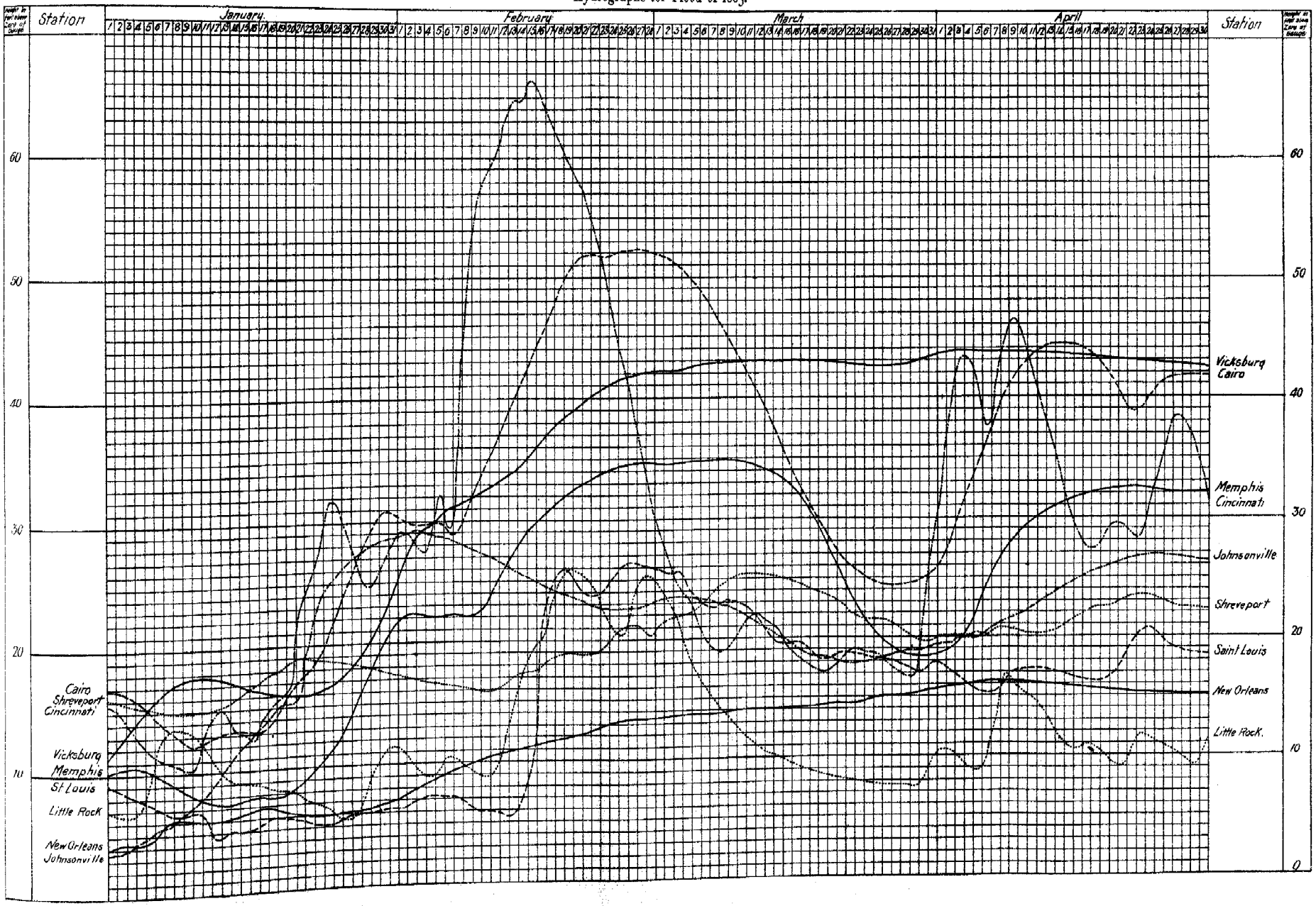


Plate XXXIV.

Precipitation, January, 1884.

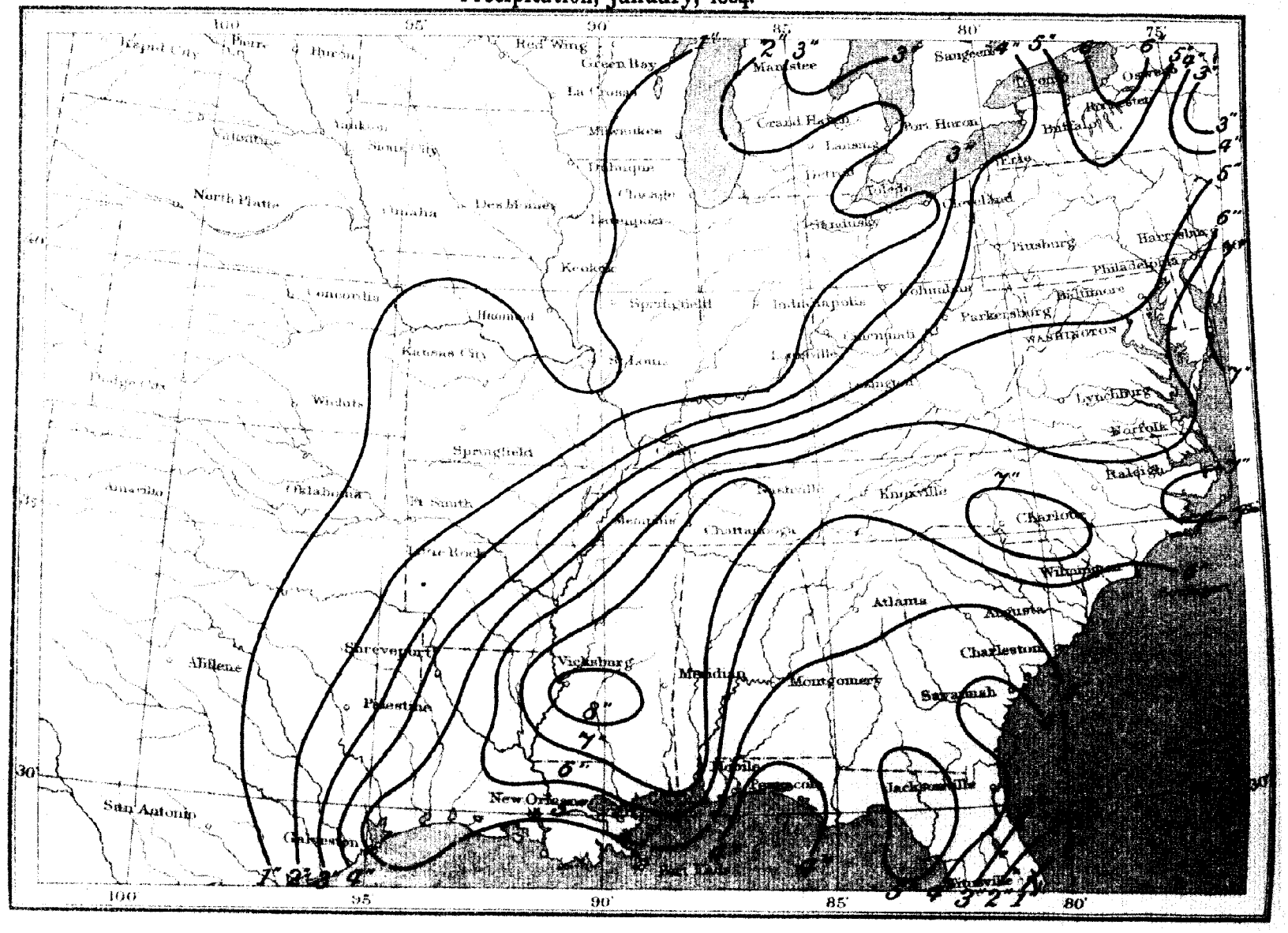


Plate XXXV.

Precipitation, February, 1884.

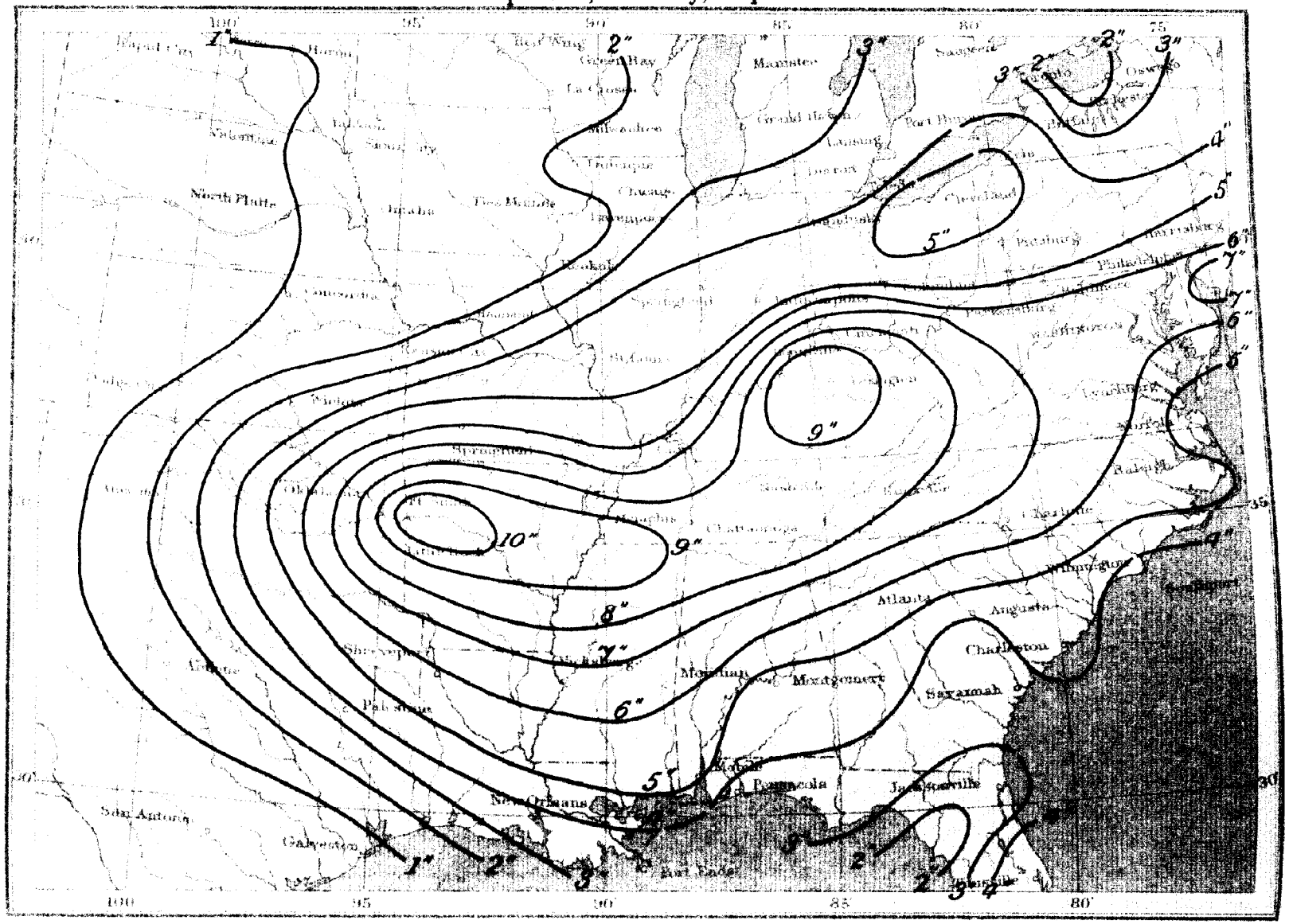


Plate XXXVI.

Precipitation, March, 1884.

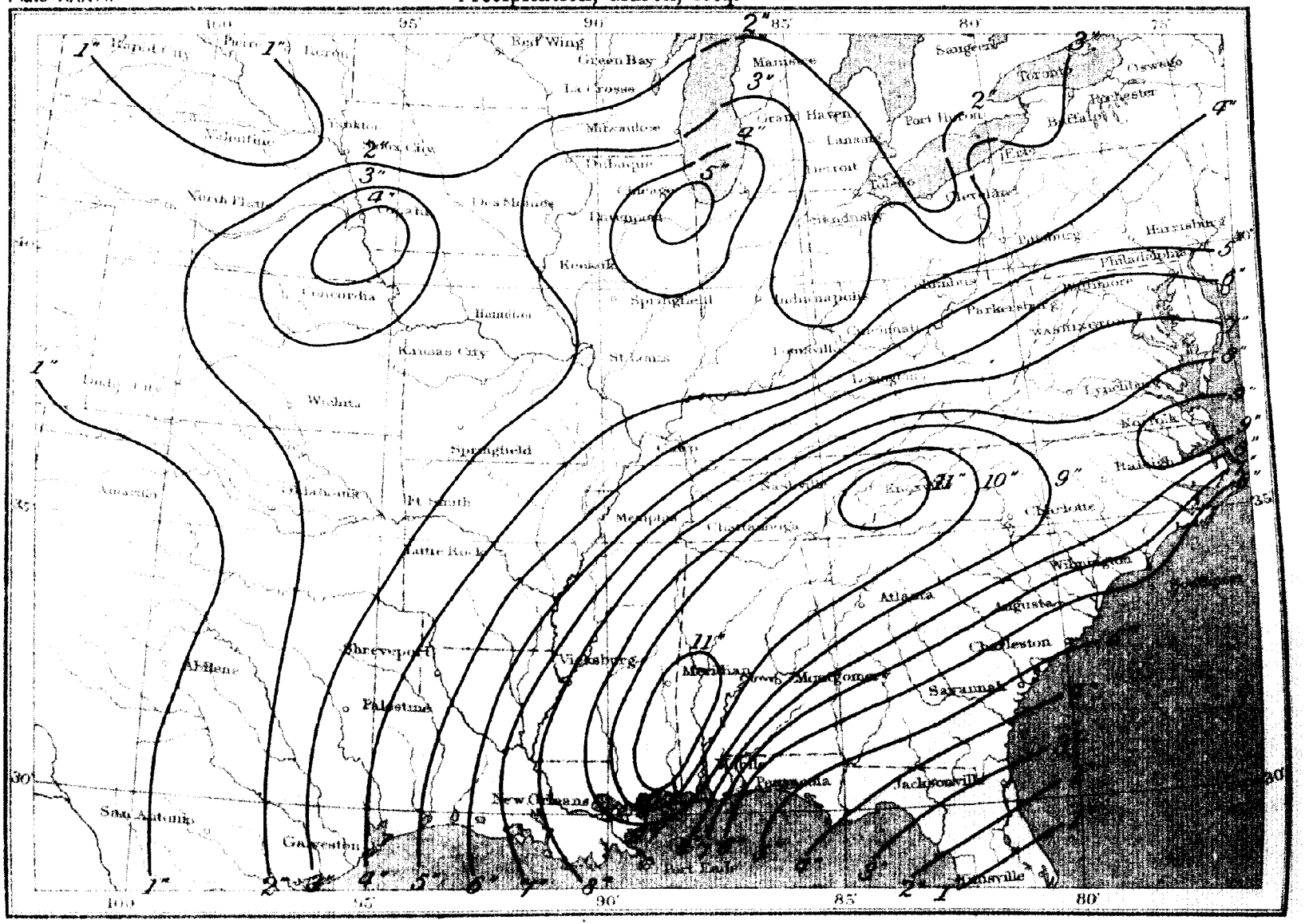


Plate XXXVII.

Departure from Normal Precipitation, January, 1884.

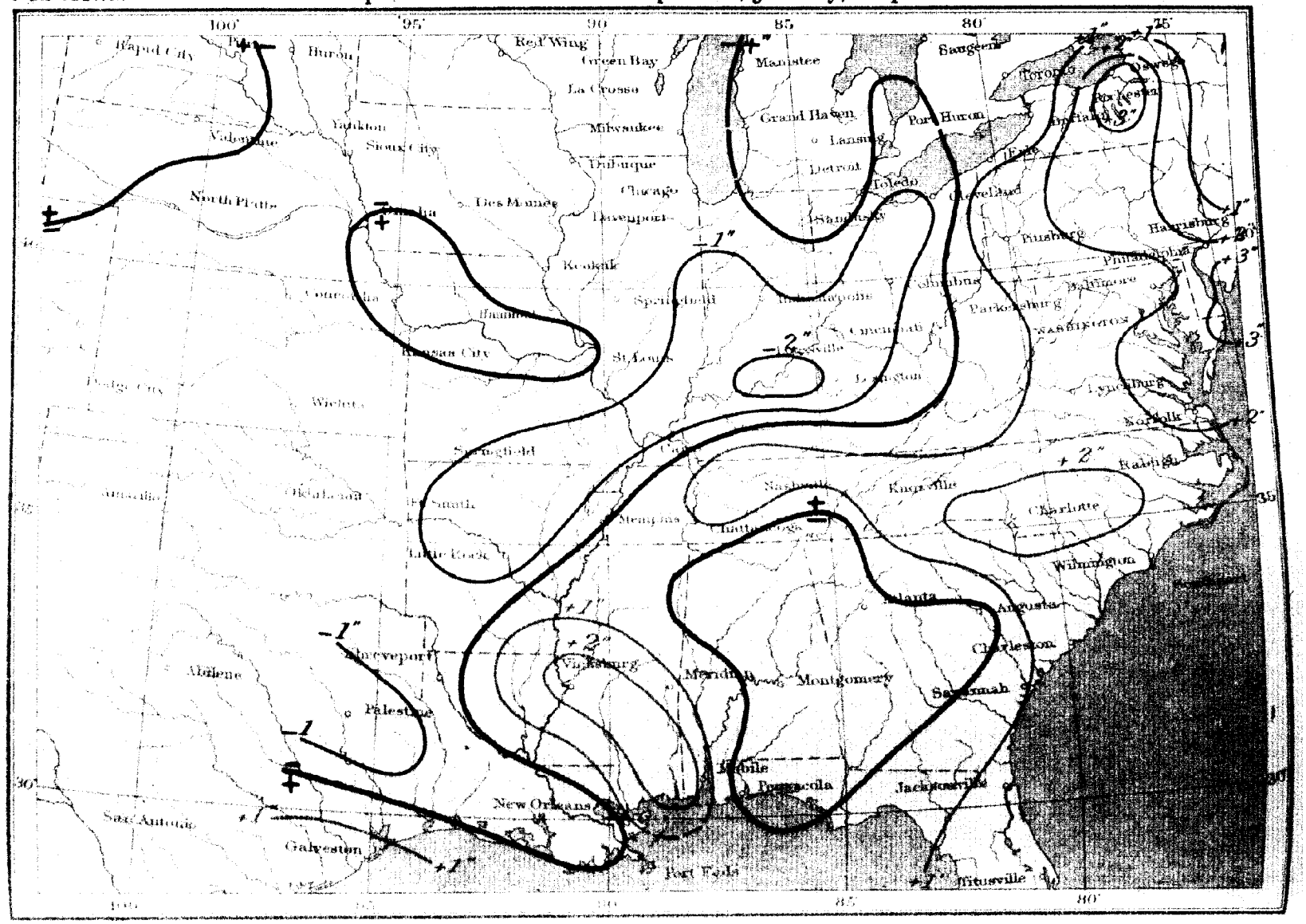


Plate XXXVIII.

Departure from Normal Precipitation, February, 1884.

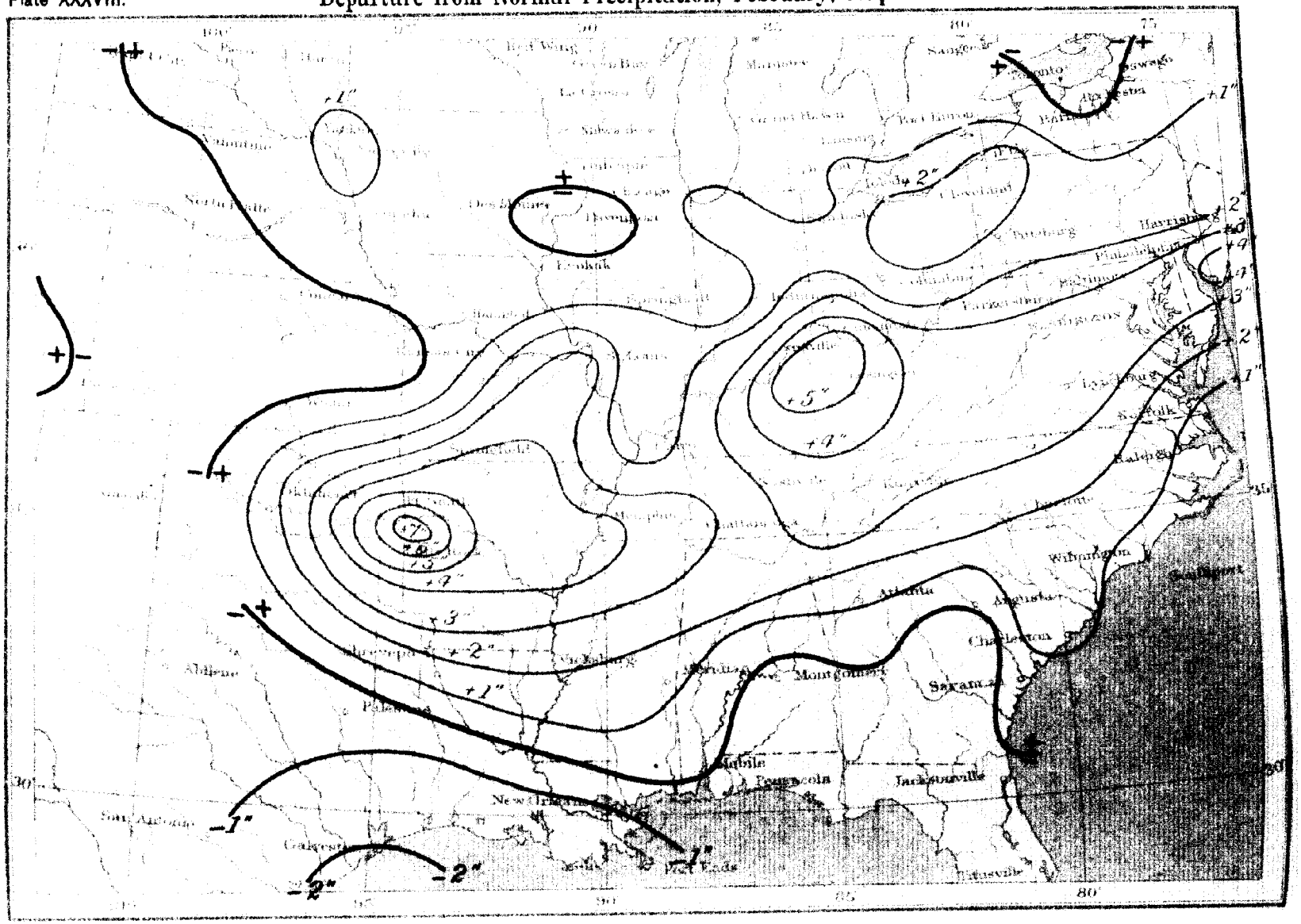


Plate XXXIX. Departure from Normal Precipitation, January 1 to February 29, 1884.

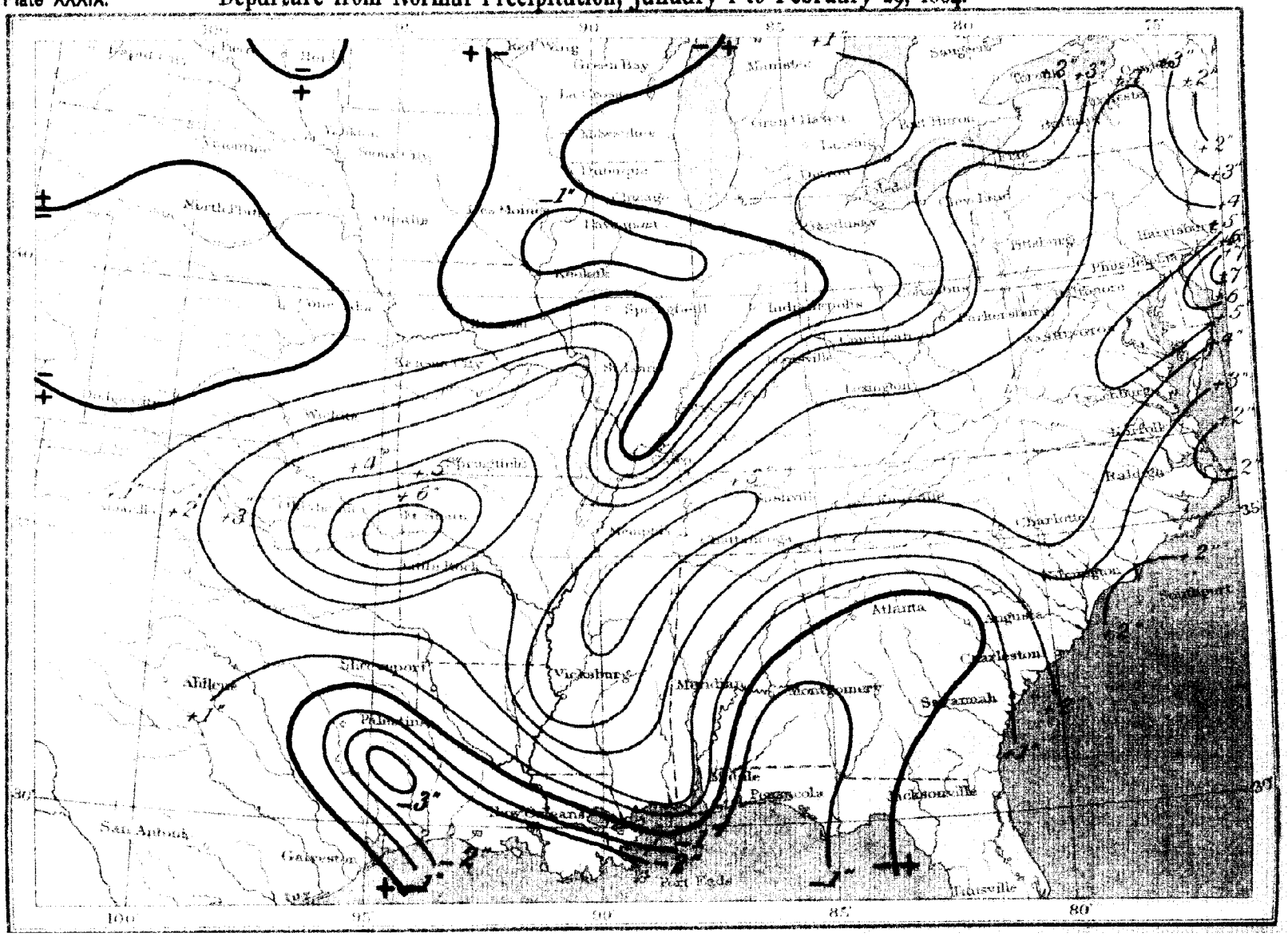


Plate XL.

Hydrographs for Flood of 1884.

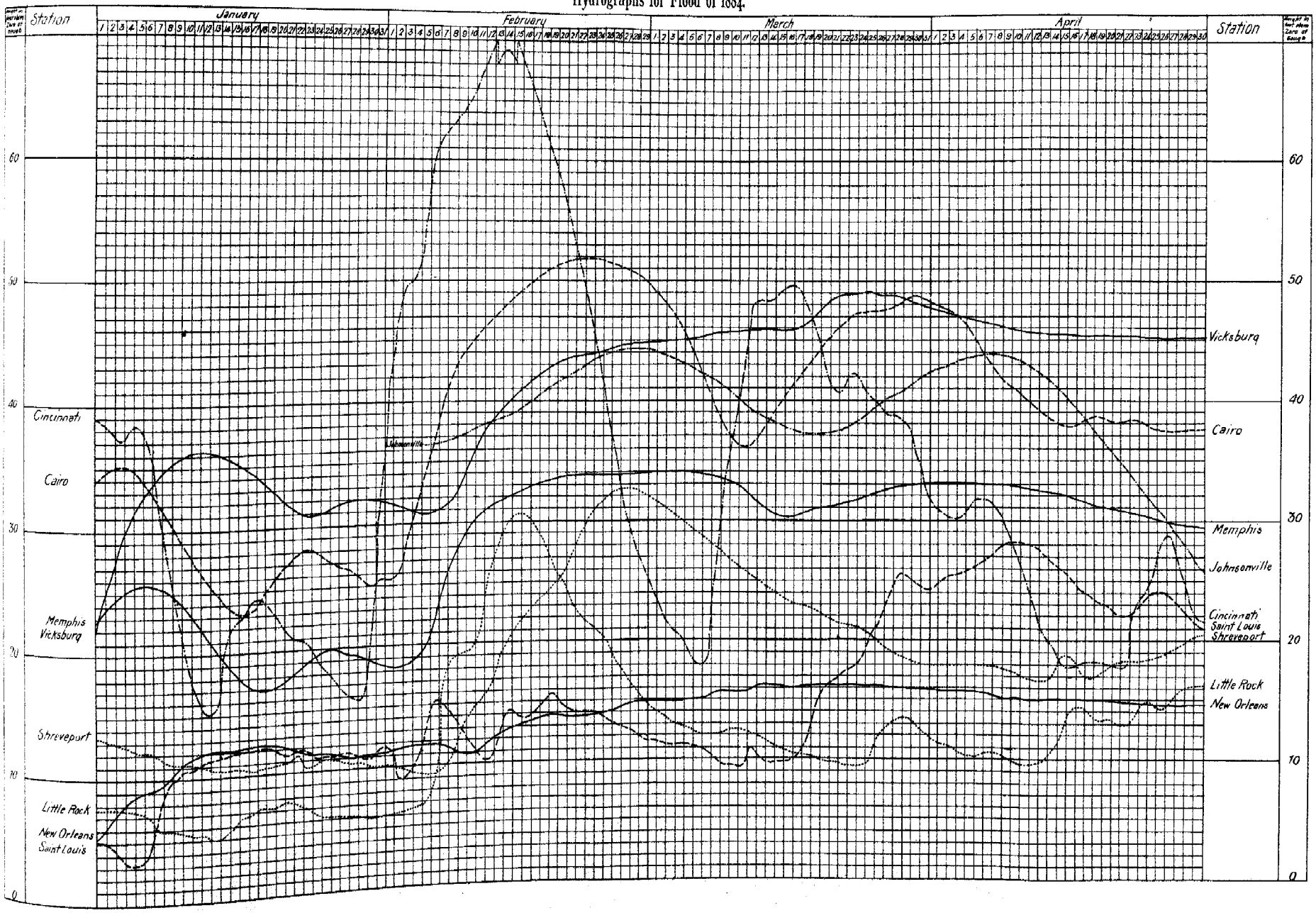


Plate XLI.

Precipitation, January, 1890.

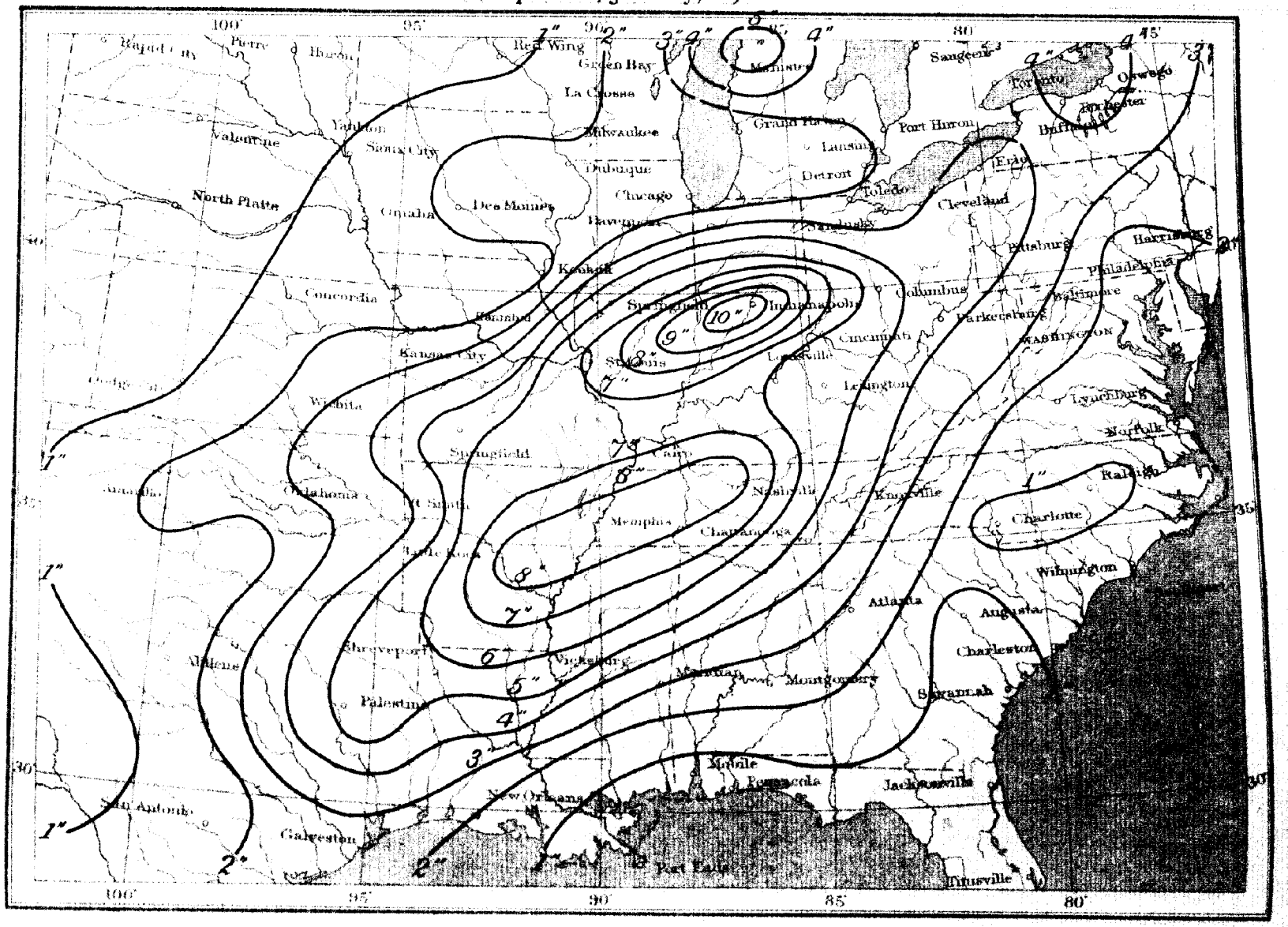


Plate XLII.

Precipitation, February, 1890.

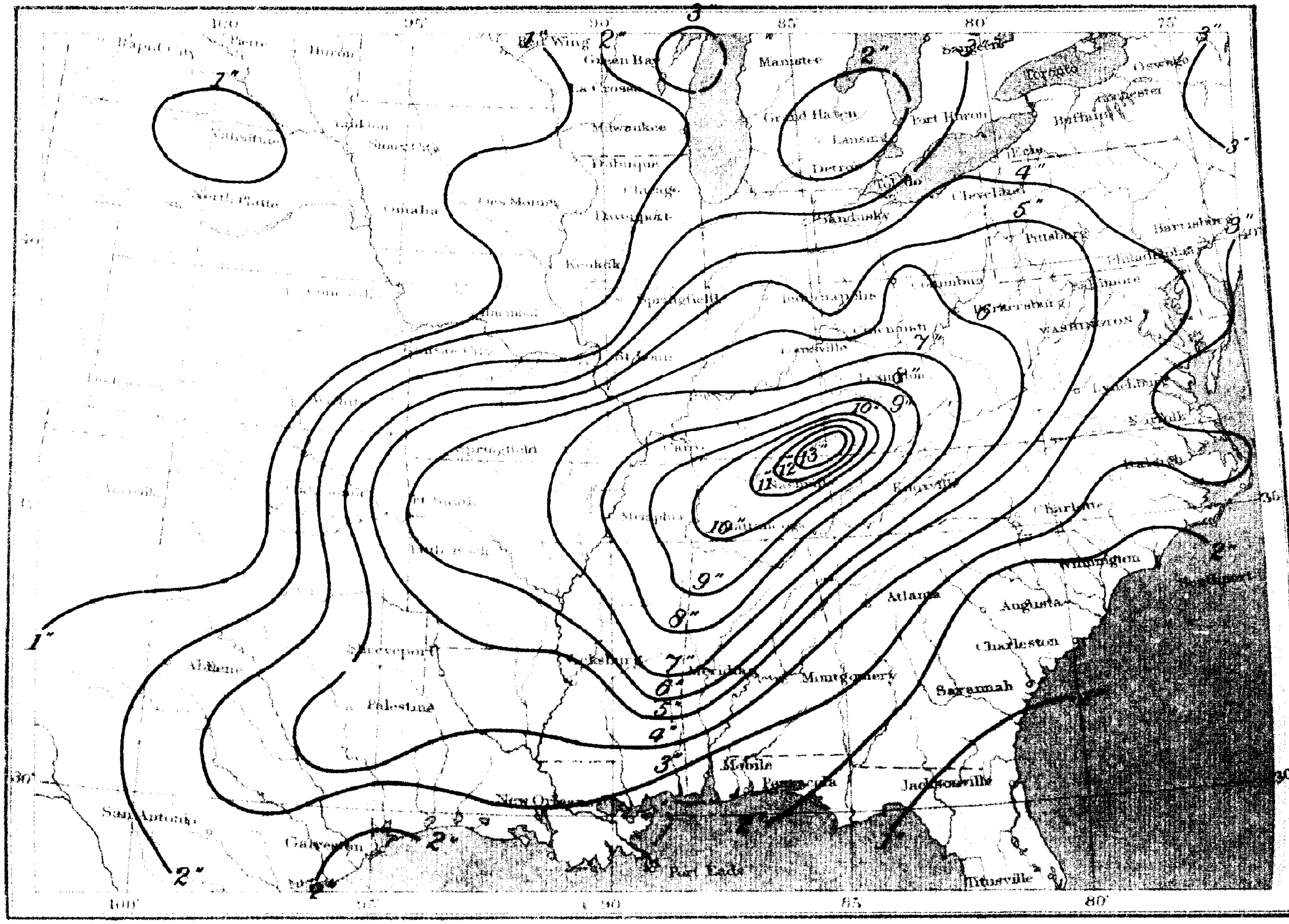


Plate XLIII.

Precipitation, March, 1890.

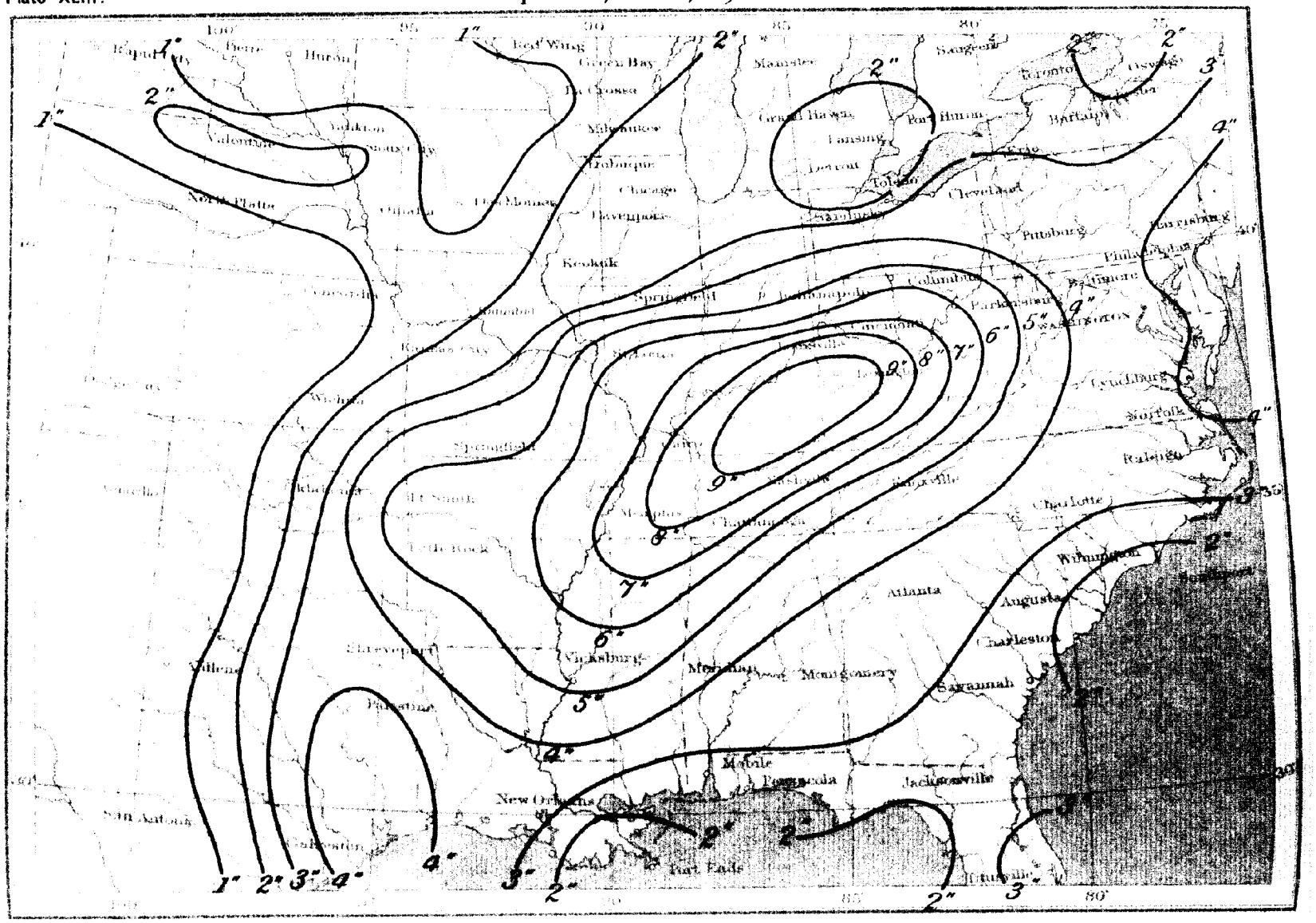


Plate XLIV.

Departure from Normal Precipitation, February, 1890.

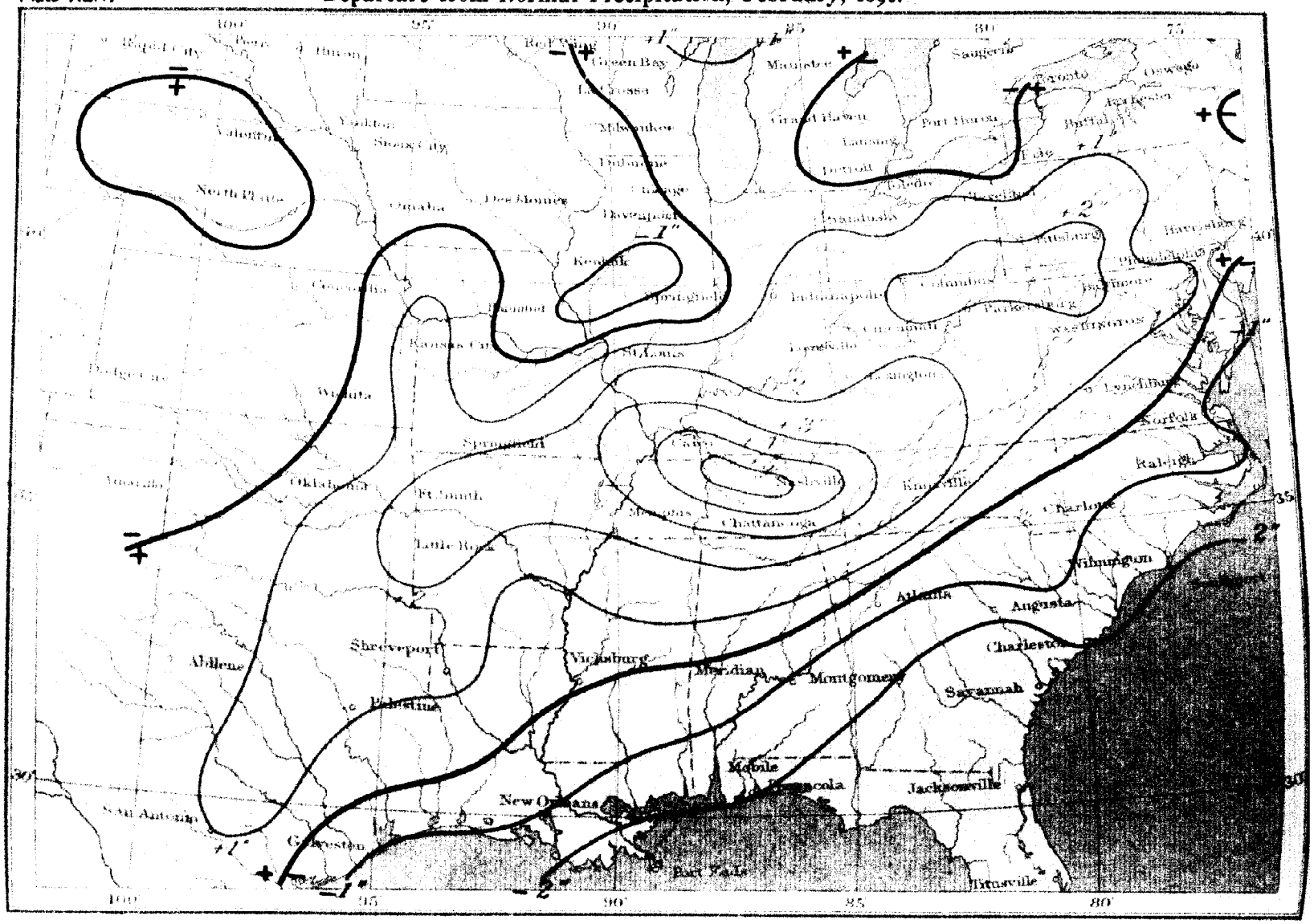


Plate XLV.

Departure from Normal Precipitation, March, 1890.

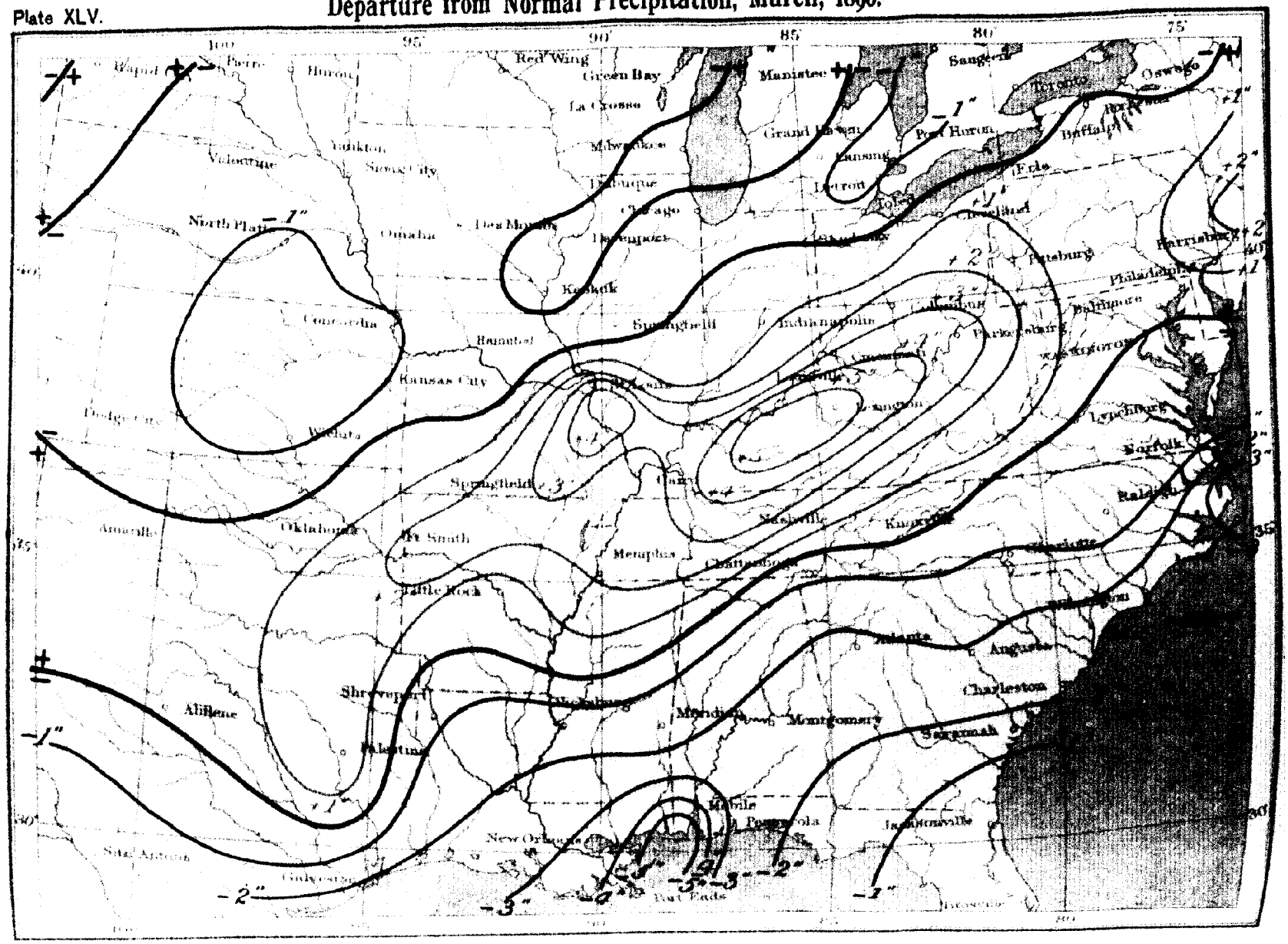


Plate XLVI.

Departure from Normal Precipitation, February 1 to March 31, 1890.

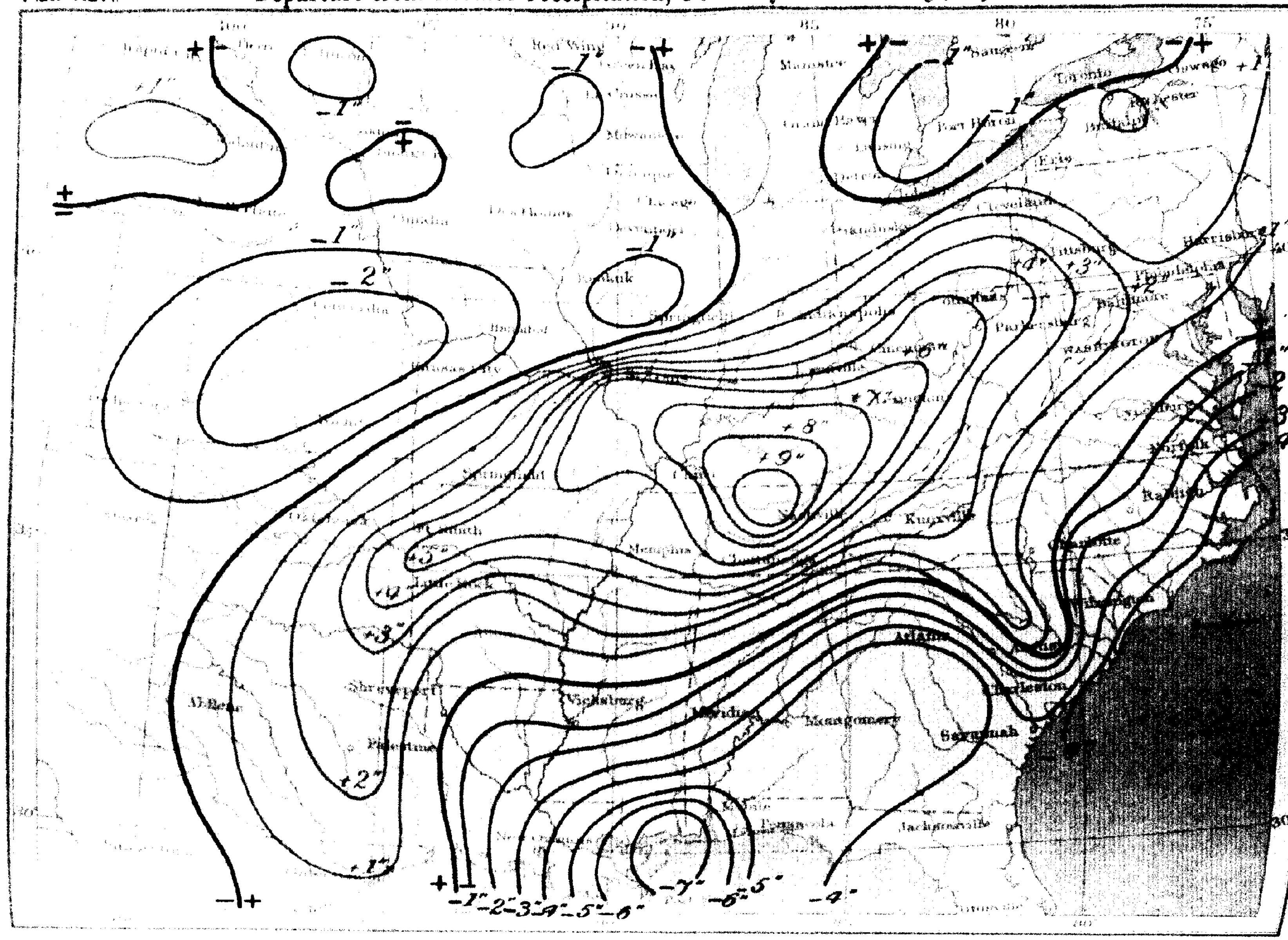


Plate XLVII.

Hydrographs for Flood of 1890.

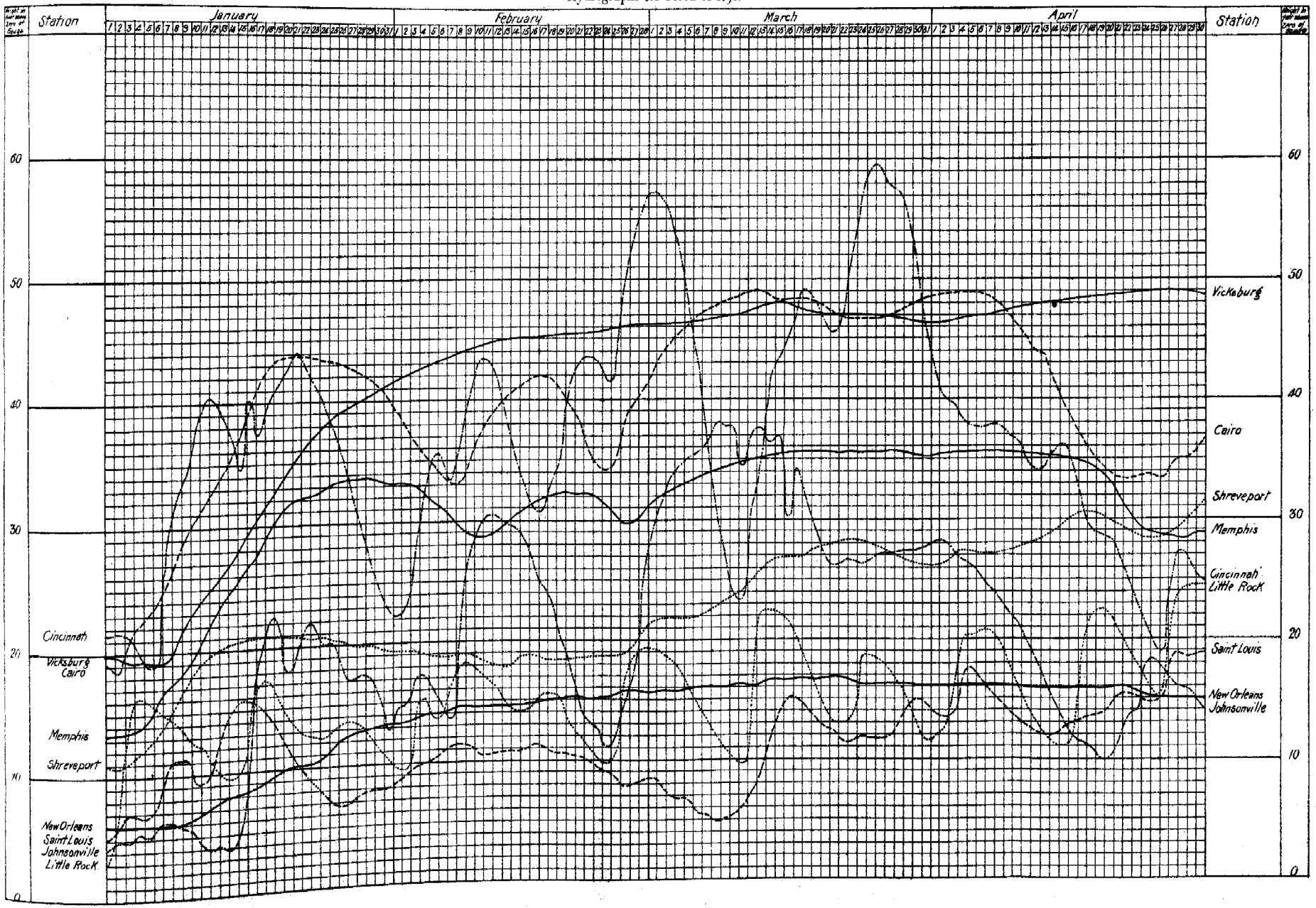


Plate XLVIII.

Precipitation, April, 1893.

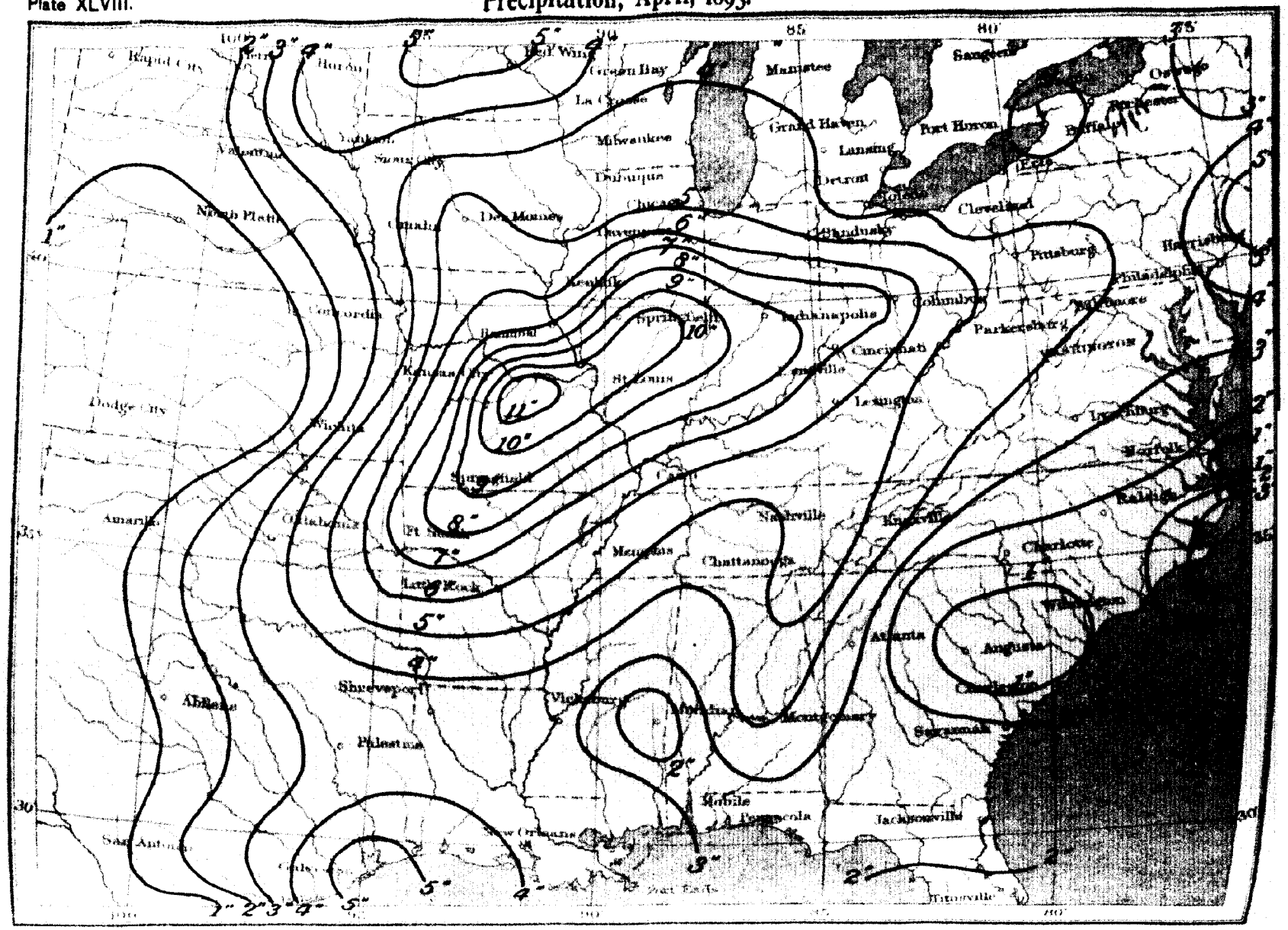


Plate XLIX.

Precipitation, May, 1893.

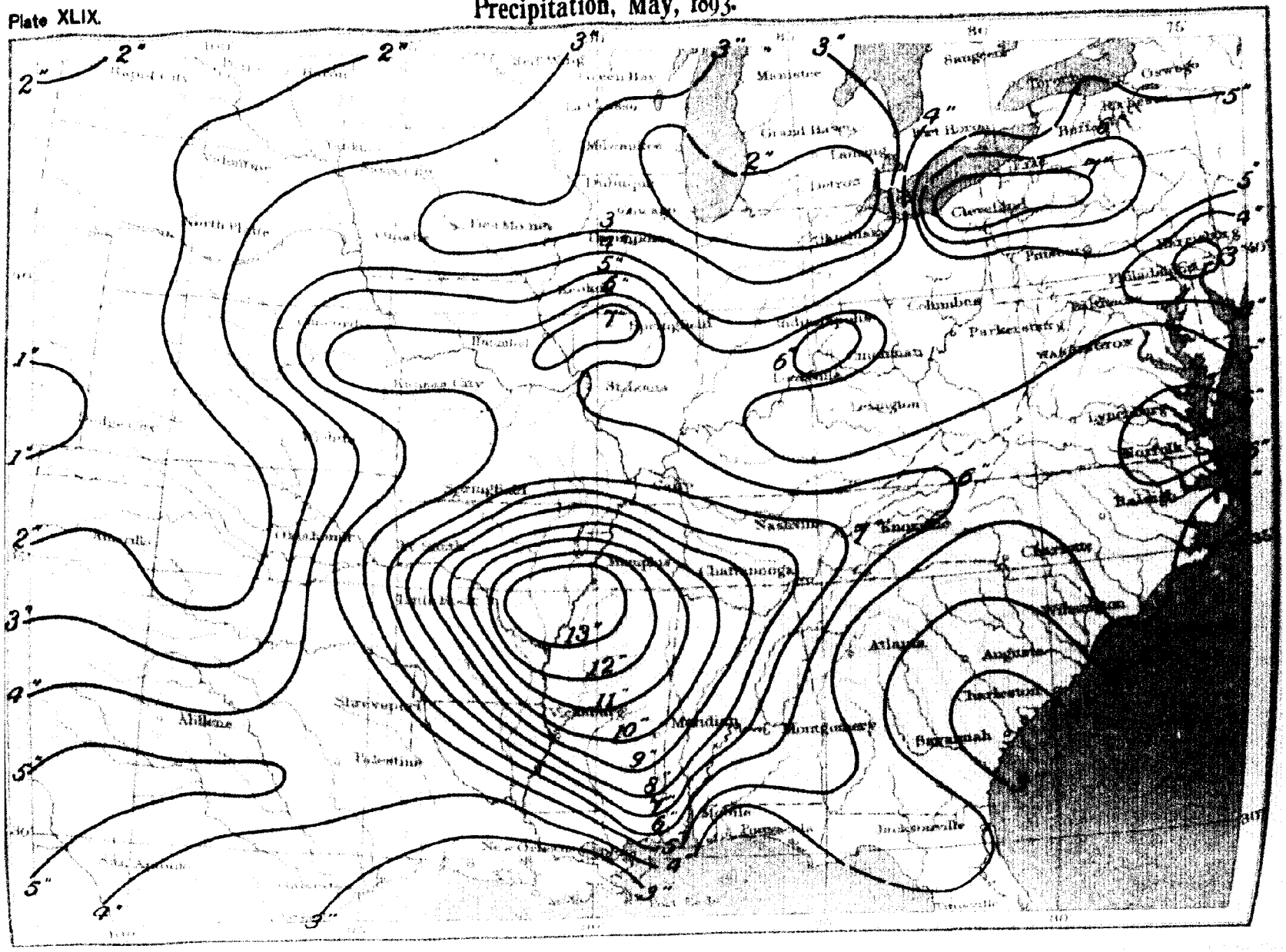


Plate L.

Precipitation, June, 1893.

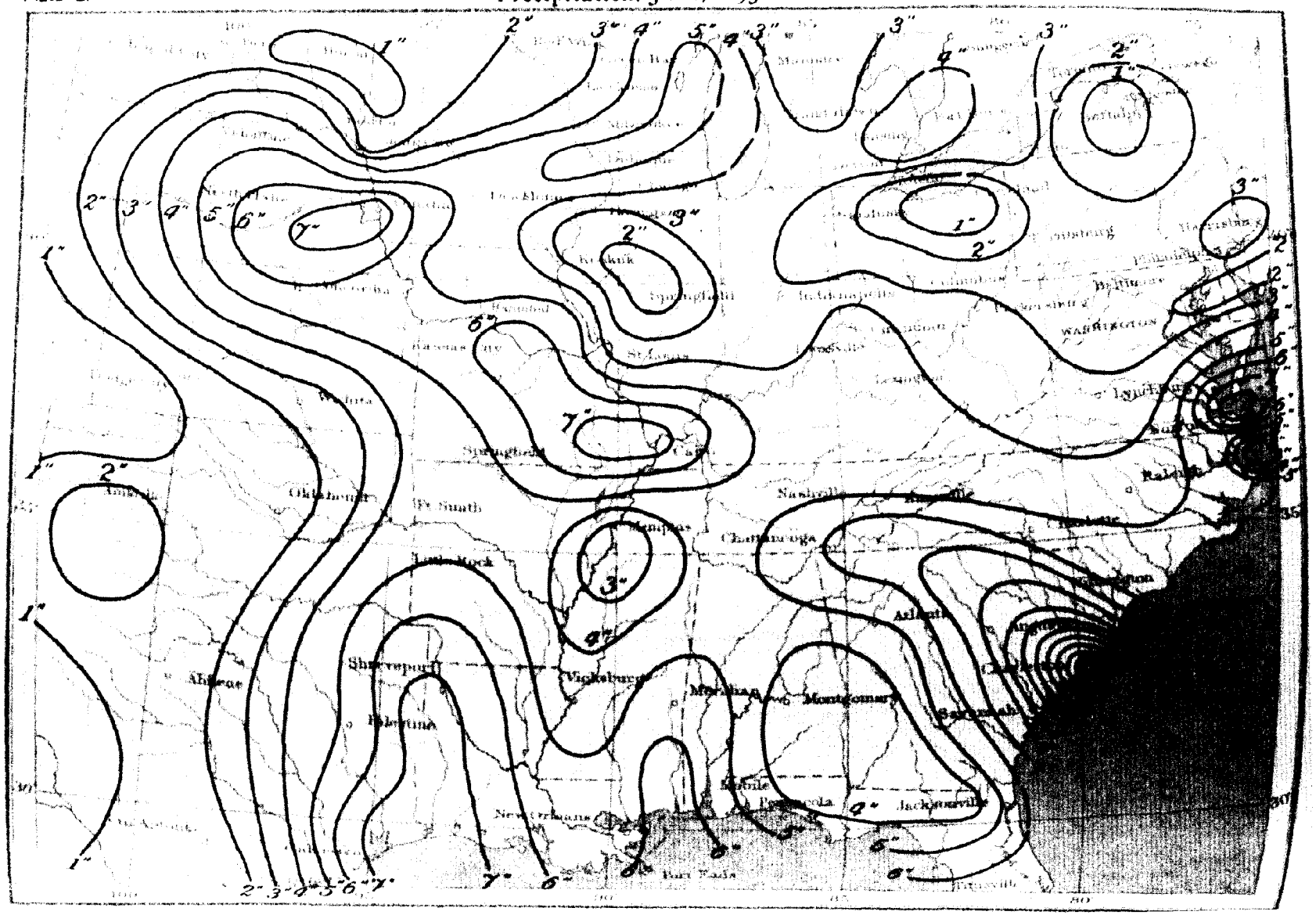


Plate LI.

Departure from Normal Precipitation, April, 1893.

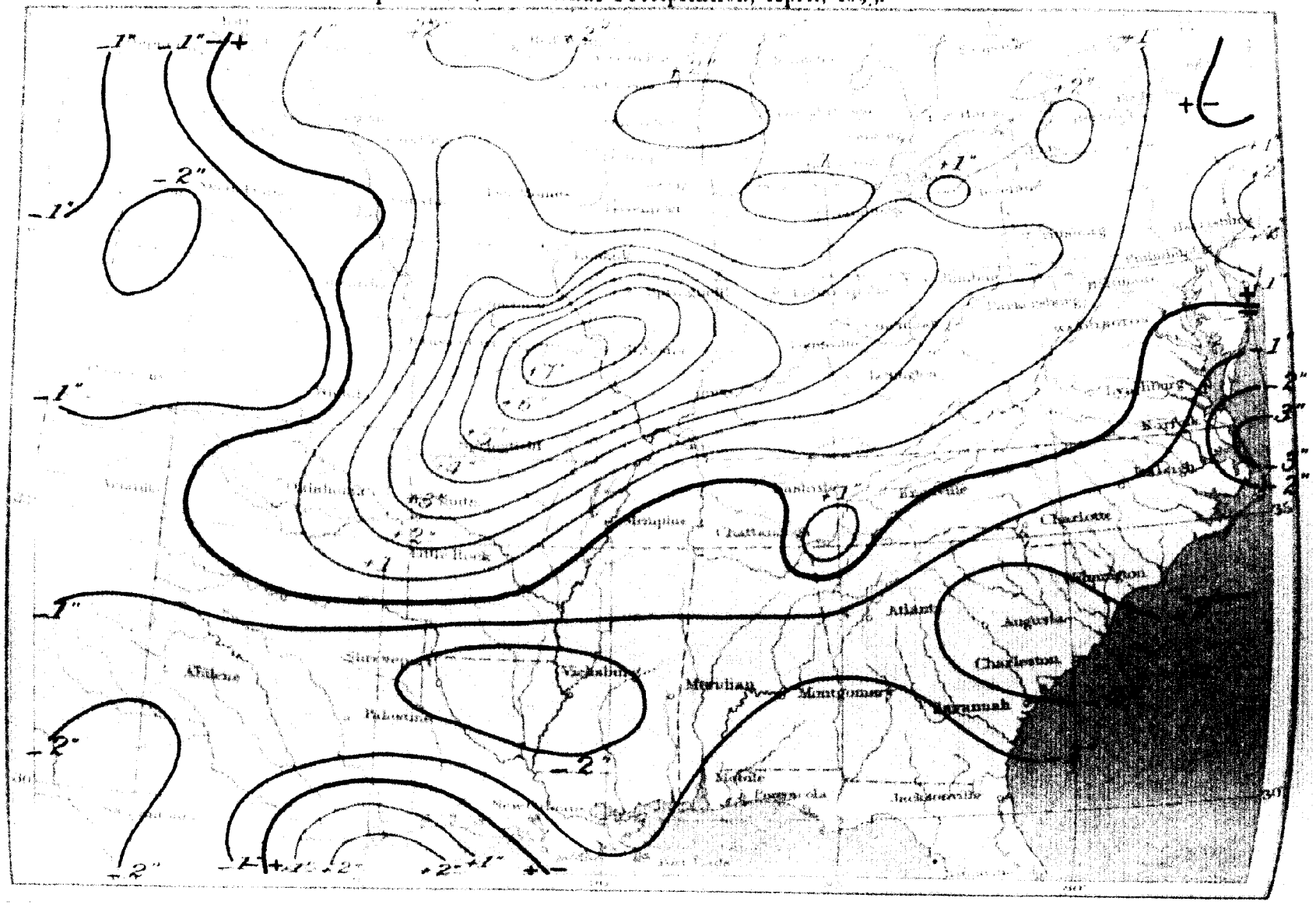


Plate LII.

Departure from Normal Precipitation, May, 1893.

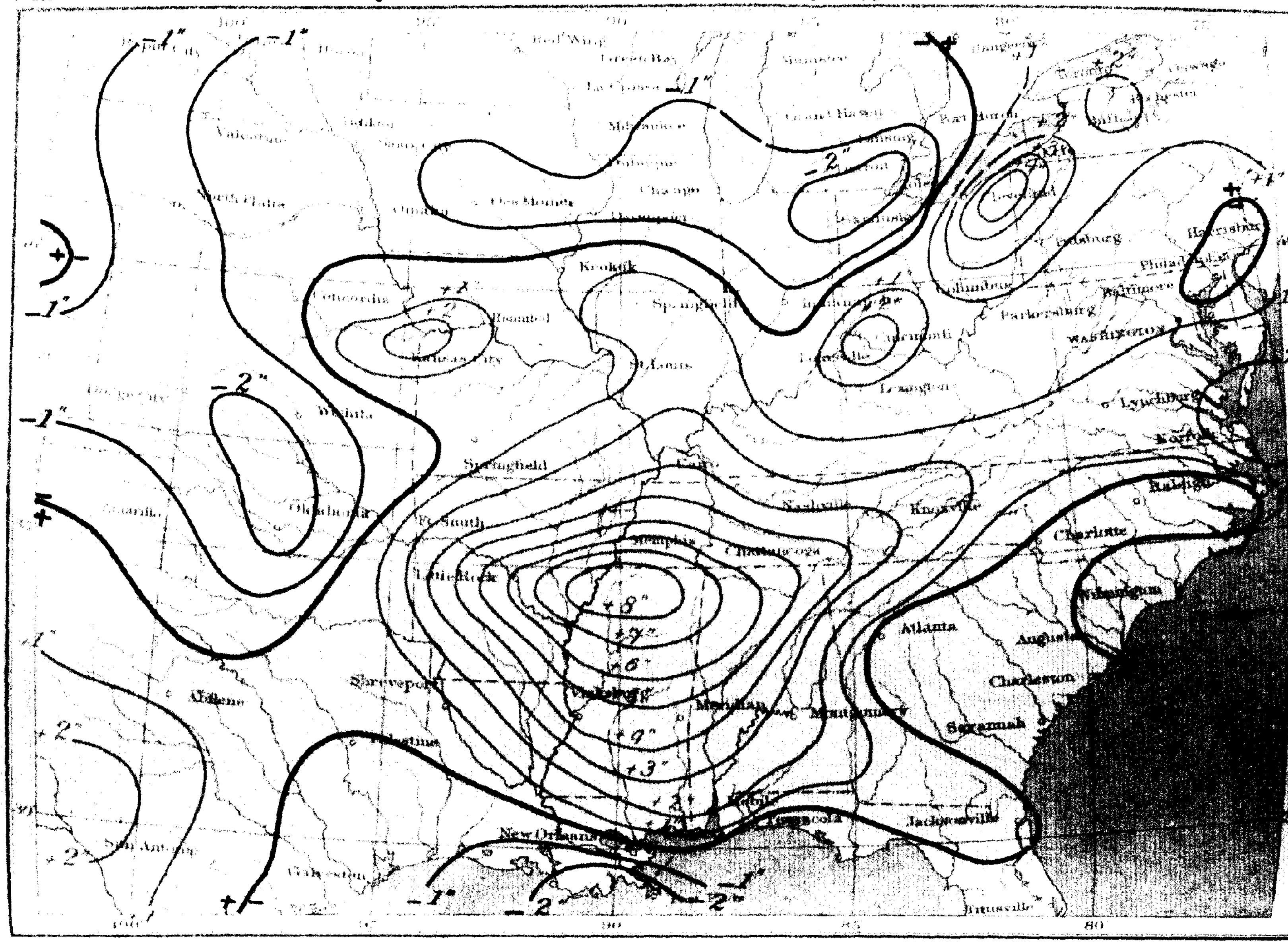


Plate LIII.

Departure from Normal Precipitation, April 1 to May 31, 1893.

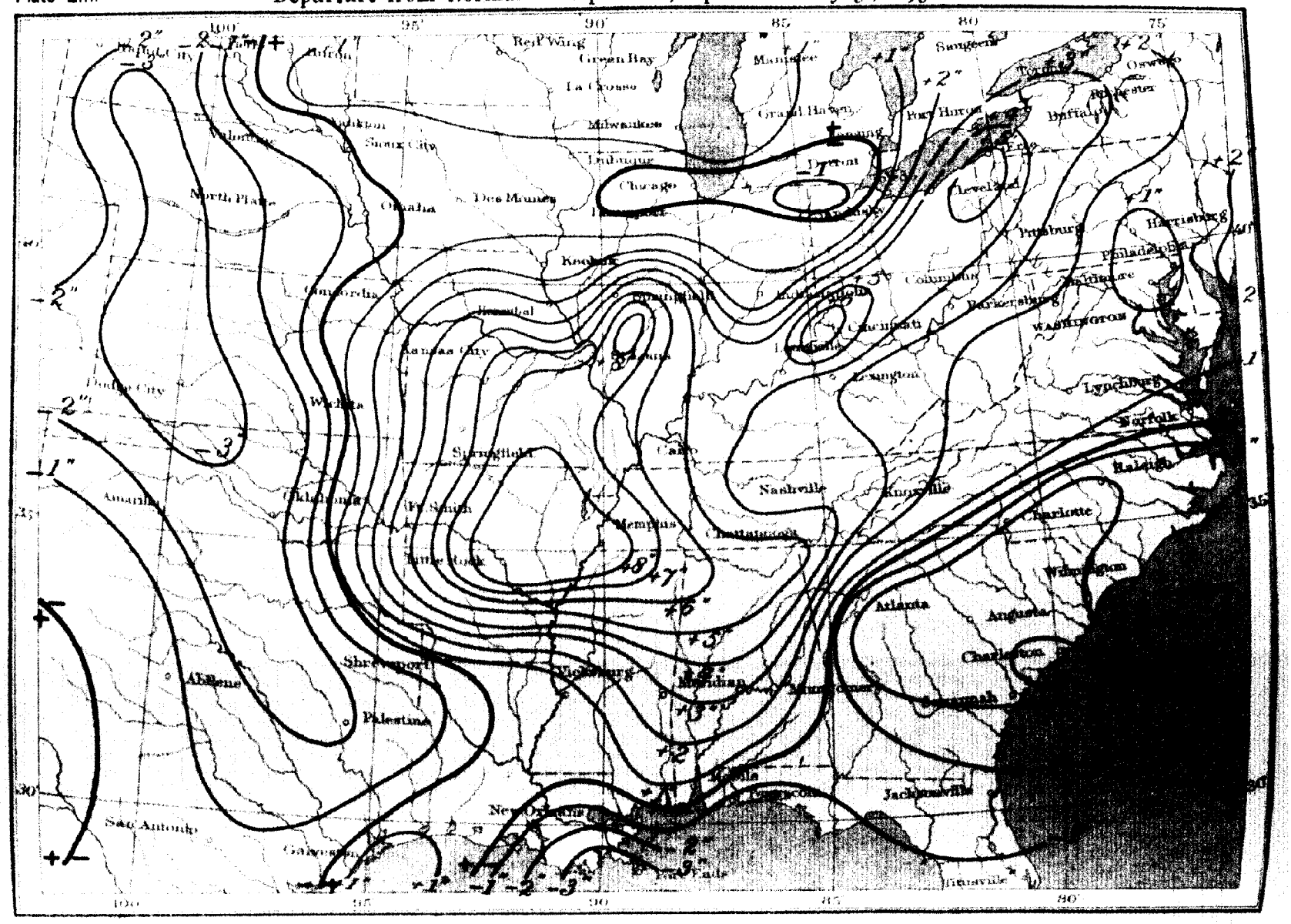


Plate LIV.

Hydrographs for Flood of 1893.

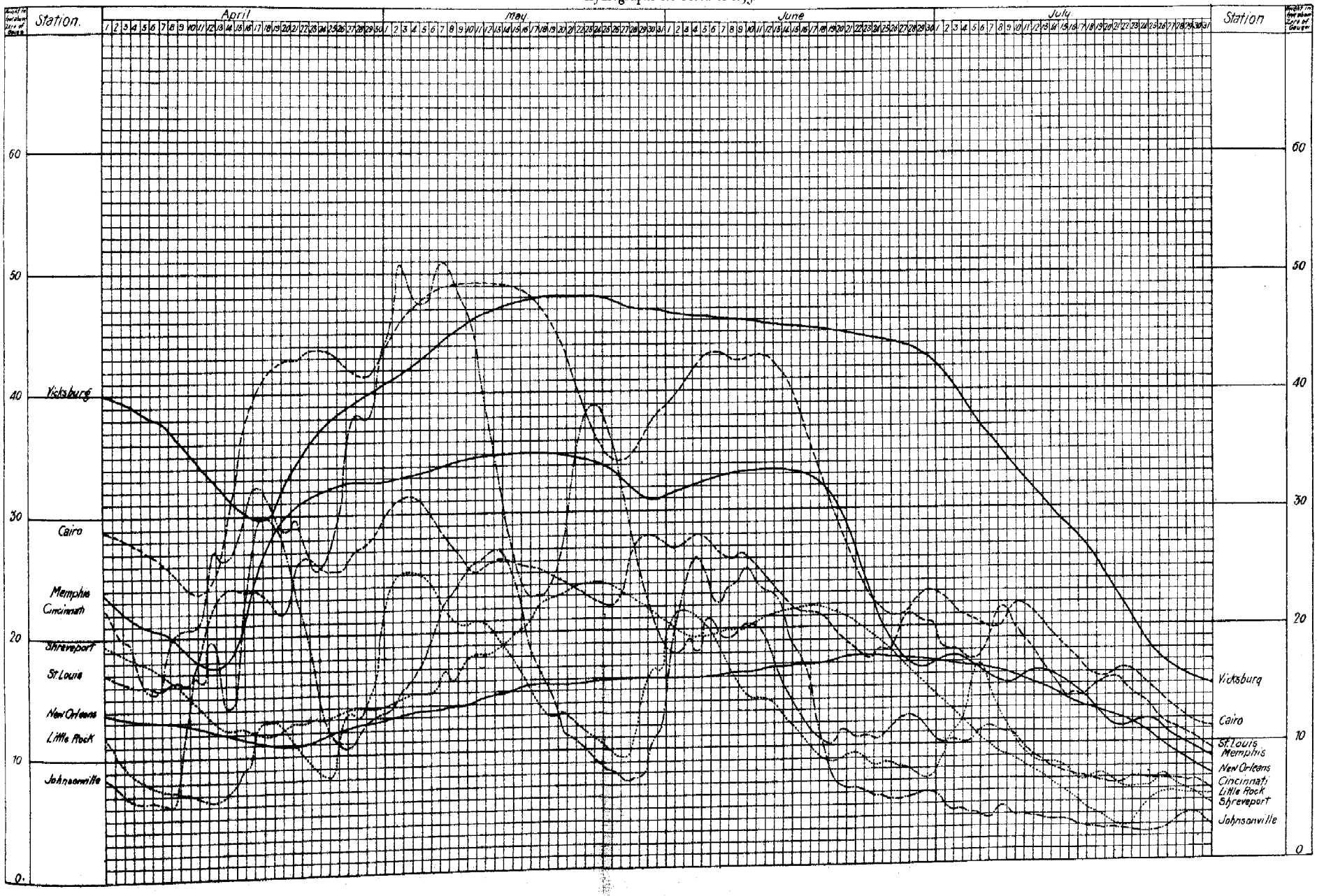


Plate LV.

Precipitation, January, 1897.

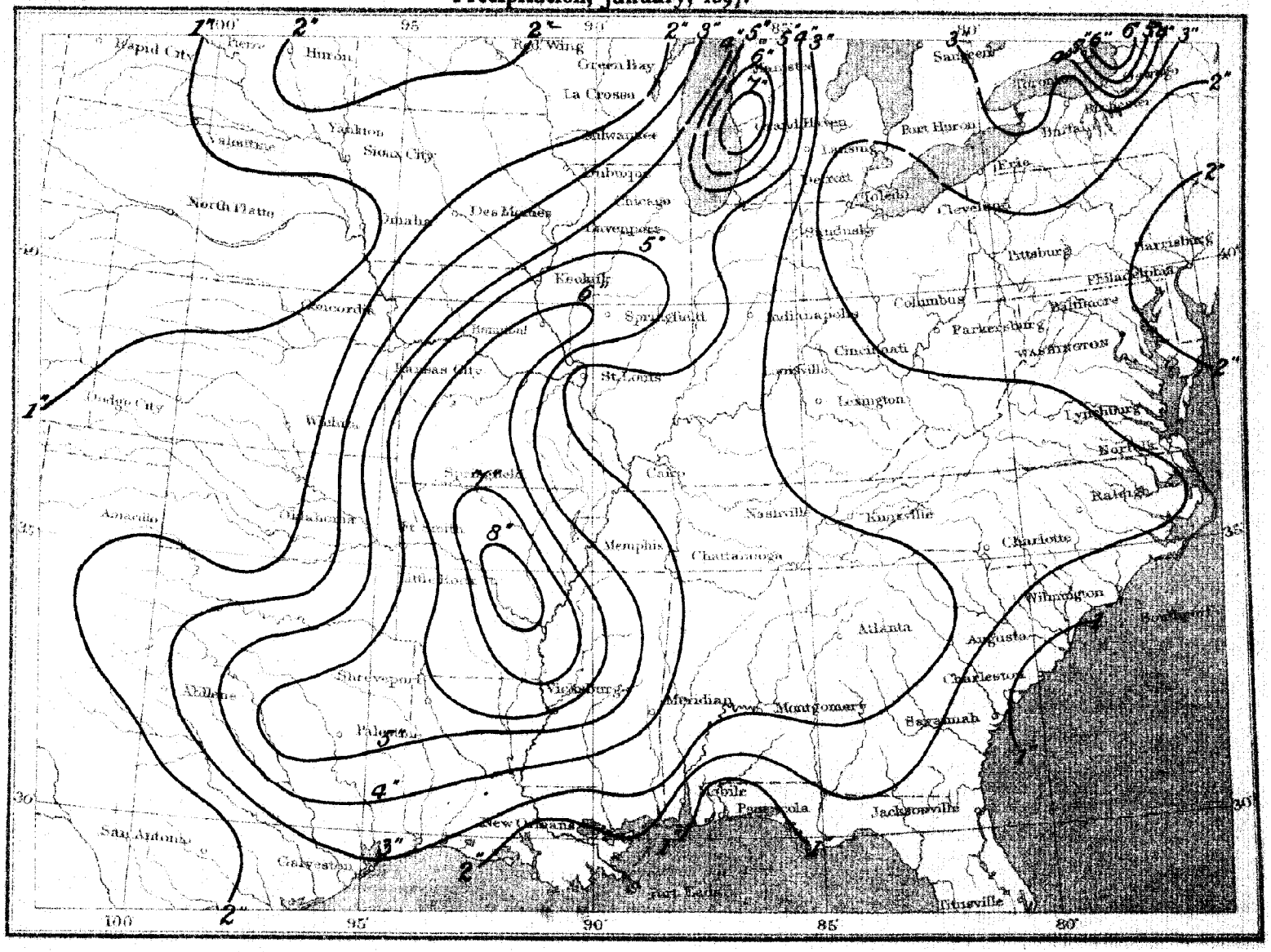
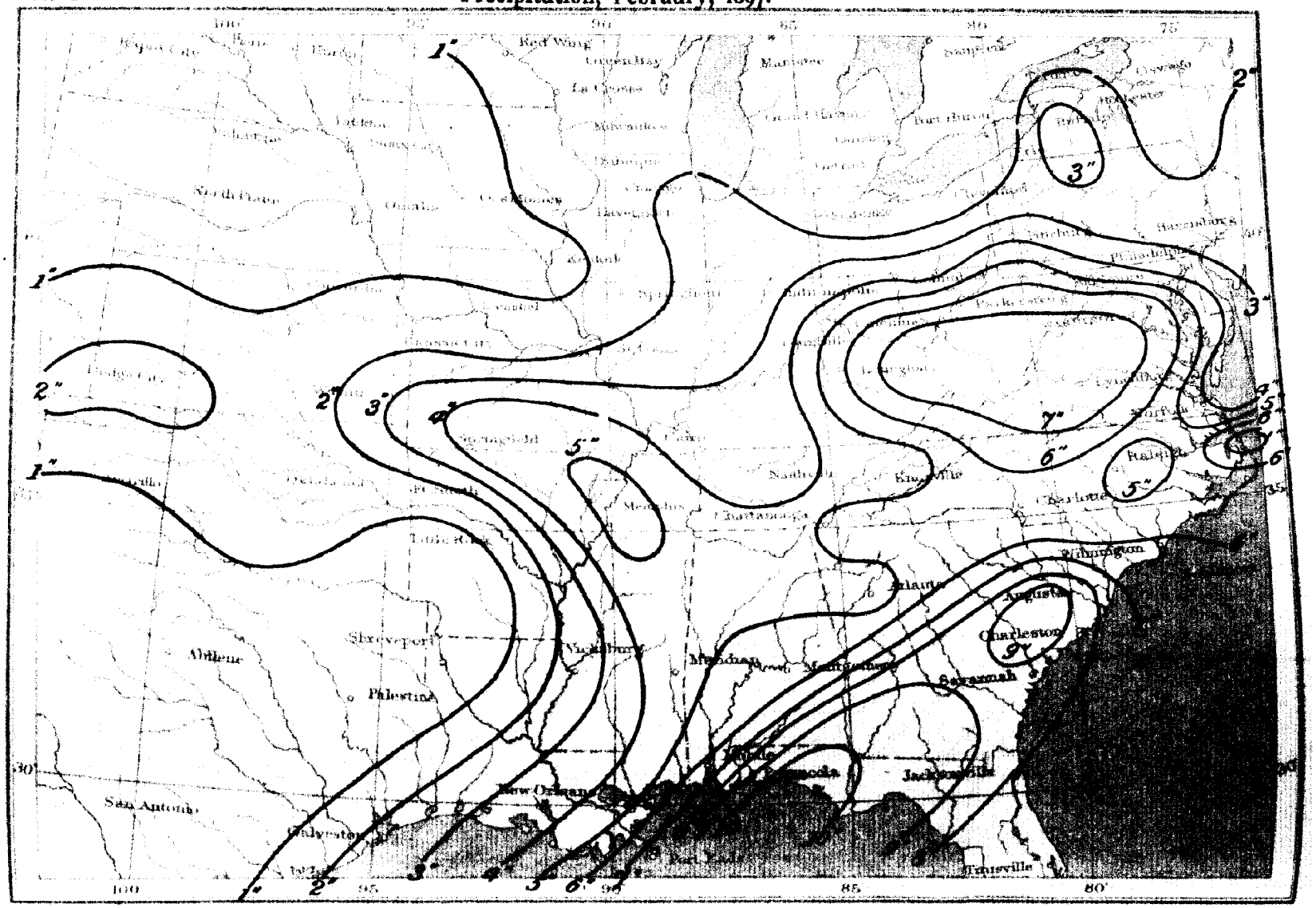


Plate LVI.

Precipitation, February, 1897.



Precipitation, March, 1897.

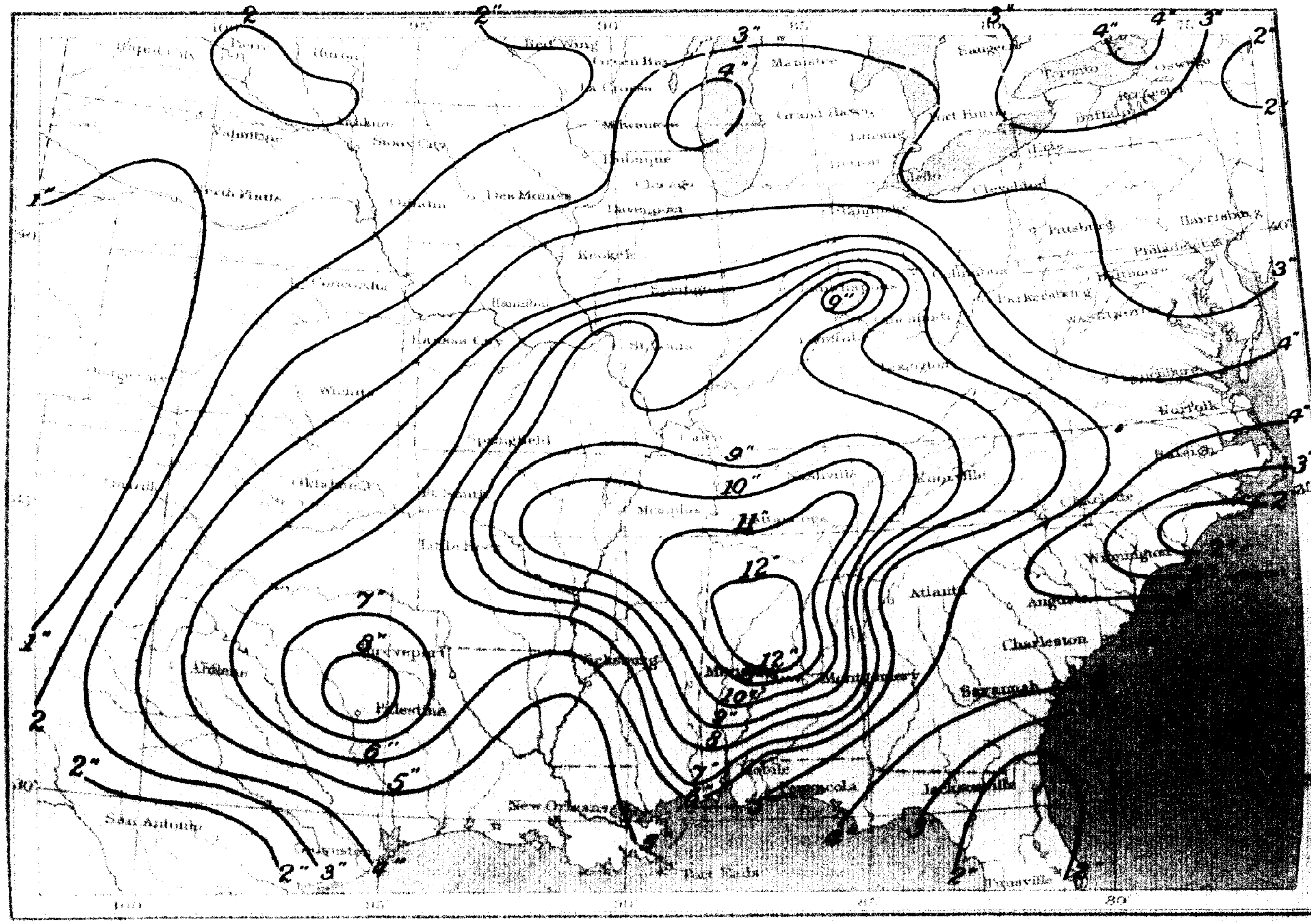


Plate LVIII.

Departure from Normal Precipitation, February, 1897.

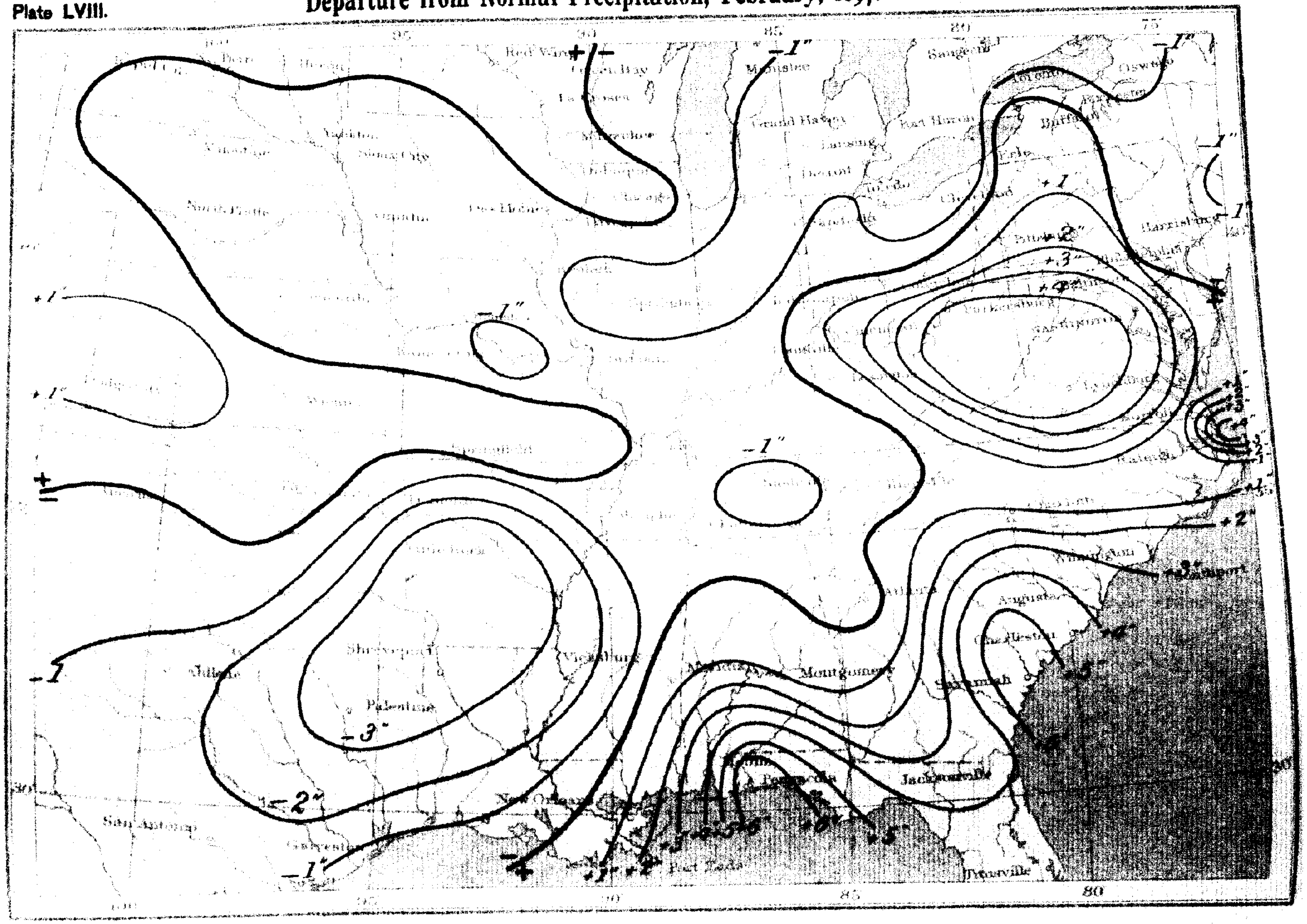


Plate LIX.

Departure from Normal Precipitation, March, 1897.

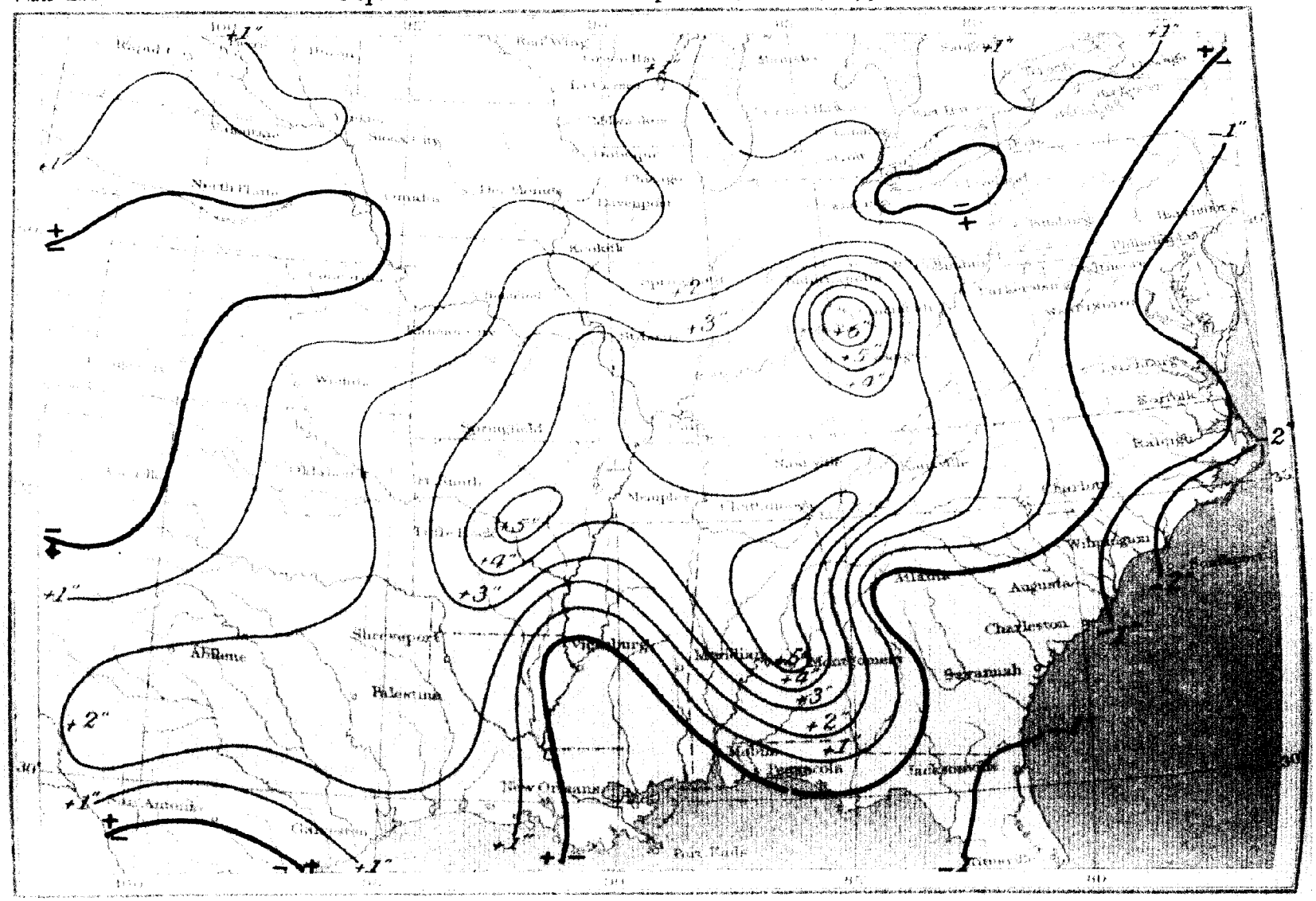


Plate LX.

Departure from Normal Precipitation, February 1 to March 31, 1897.

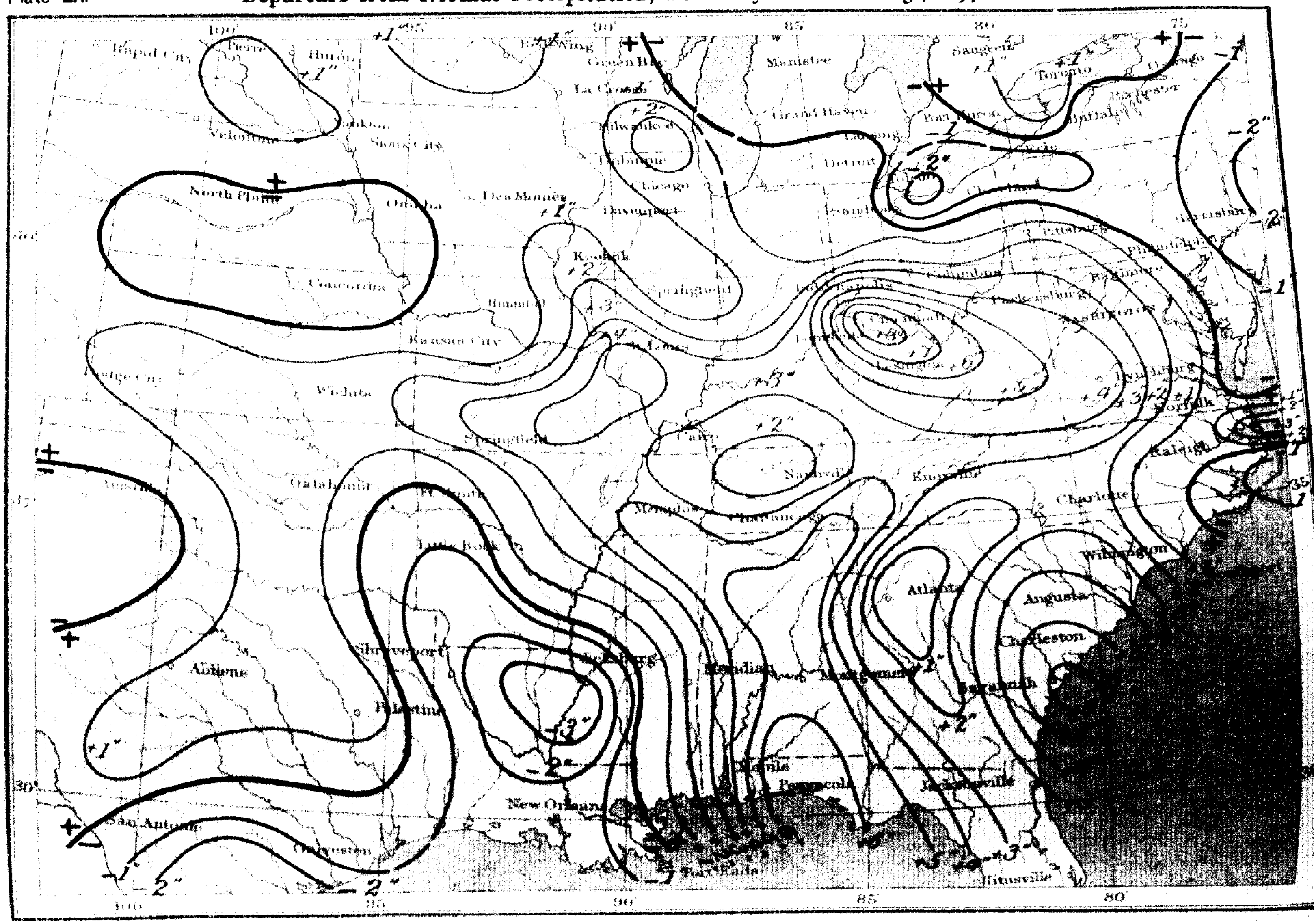
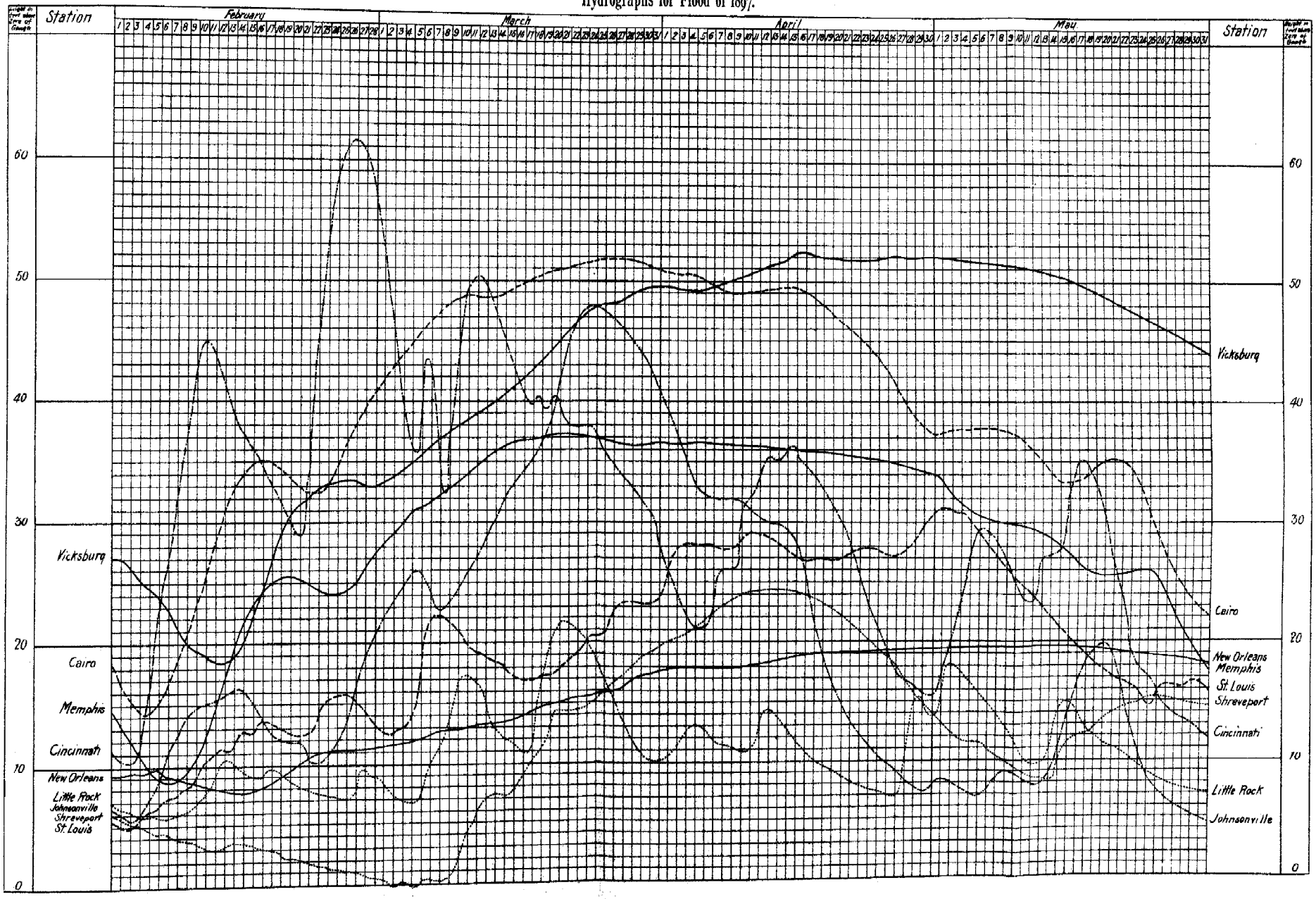


Plate LXI.

Hydrographs for Flood of 1897.