monthly snowfall. The isotherms of minimum 32° and 40° are also shown on this chart.

HAIL.

The following are the dates on which hail fell in the respective States:

Alabama, 5. Arizona, 16, 29. Arkansas, 5. California, 18. Colorado, 2 10, 14, 15, 21, 29. Idaho, 13, 18, 19, 20. Illinois, 3, 4. 6, 15, 16, 25. Indiana, 13. Iowa, 3, 5, 6, 15, 20, 21. Kansas, 4, 6, 8, 9, 22. Maine, 14. Maryland, 9, 10, 29, 30. Massachusetts, 11. Michigan, 28. Minnesota, 5, 6, 8, 10, 17, 28. Missouri, 3, 4, 6, 28. Montana, 6, 13, 19, 20. Nebraska, 5, 20, 21, 22. Nevada, 18, 20. New Hampshire, 11, 14. New York, 7, 12, 15, 20, 30. North Dakota, 2, 21, 24. Ohio, 7, 12, 29, 30. Oklahoma, 6. Oregon, 10, 13, 19, 20. Pennsylvania, 9, 10, 30. Rhode Island, 9. South Dakota, 2, 5. Tennessee, 4, 6, 13, 16. Utah, 14, 17. Vermont, 11. Virginia, 19. Washington, 4, 16, 19. West Virginia, 9, 19. Wisconsin, 10, 15, 22, 25, 28.

SLEET.

The following are the dates on which sleet fell in the respective States:

Colorado, 21, 22. Idaho, 20, 21. Kansas, 22. Michigan, 29, 30. Minnesota, 28, 29. Montana, 19, 20. Nebraska, 21. Nevada, 20. New York, 27, 30. Ohio, 30. Pennsylvania, 30. Utah, 21.

WIND.

The *prevailing winds* for September, 1895, viz, those that were recorded most frequently, are shown in Table I for the regular Weather Bureau stations.

The *resultant winds*, as deduced from the personal observations made at 8 a. m. and 8 p. m., are given in Table IX. These latter resultants are also shown graphically on Chart II, where the small figure attached to each arrow shows the number of hours that this resultant prevailed, on the assumption that each of the morning and evening observations represents one hour's duration of a uniform wind of average velocity. These figures indicate the relative extent to which winds from different directions counterbalanced each other.

HIGH WINDS.

Maximum wind velocities of 50 miles or more per hour were reported at regular stations of the Weather Bureau as follows (maximum velocities are averages for five minutes; extreme velocities are gusts of shorter duration, and are not given in this table):

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		Miles				*Miles*	
Amarillo, Tex	21	52	s.	Oklahoma, Okla	6	52	n.
Do	28	50	n.	Pierre, S. Dak	19	52	w.
Chicago, Ill	4	53	s.	St. Paul, Minn	6	55	se.
Do	22	50	s.	Tatoosh Island, Wash	19	58	nw.
Huron, S. Dak	5	61	se.	Williston, N. Dak	24	52	w.
Marquette, Mich	5	52	se.	Winnemucca, Nev	11	50	sw.

SUNSHINE AND CLOUDINESS.

The quantity of sunshine, and therefore of heat, received by the atmosphere as a whole is very nearly constant from year to year, but the proportion received by the surface of the earth depends largely upon the absorption by the atmosphere, and varies with the distribution of cloudiness. The sunshine is now recorded automatically at 15 regular stations of the Weather Bureau by its photographic, and at 22 by its thermal effects. At one station records are kept by both methods. The photographic record sheets show the apparent solar time, but the thermometric sheets show seventy-fifth meridian time. For convenience the results are all given in Table XI for each hour of mean local time. The cloudiness is determined by numerous personal observations at all stations during the daytime, and is given in the column of "average cloudiness" in Table I; its complement or clear sky is given in the last column of Table XI.

COMPARISON OF SUNSHINE AND CLEAR SKY.

The sunshine registers give the *duration* of direct sunshine whence the percentage of possible sunshine is derived; the observer's personal estimates give the percentage of *area* of clear sky. These numbers have been brought together, side by side, in the following table, from which it appears that, in general, the instrumental record of percentage of duration of sunshine is almost always larger than the observers' personal estimate of percentage of area of clear sky; the average excess for September, 1895, is 8 per cent for photographic records, and 11 per cent for thermometric records. The details are shown in the following table:

Difference between instrumental and personal observations of sunshine.

Photographic stations.	Instrumental.	Personal.	Difference.	Thermometric stations.	Instrumental.	Personal.	Difference.
Denver, Colo	89	74	15	Vicksburg, Miss	90	84	14
Phœnix, Ariz	89	77	12	Chicago, Ill	86	71	15
Santa Fe, N. Mex	86	75	11	Cincinnati, Ohio	86	67	19
Dodge City, Kans	84	77	7	Des Moines, Iowa	84	67	17
Kansas City, Mo	78	73	5	New Orleans, La	83	83	0
San Diego, Cal	77	72	5	St. Louis, Mo	82	66	16
Washington, D. C	77	72	5	Philadelphia, Pa	81	58	23
Galveston, Tex	76	67	9	Little Rock, Ark	80	61	19
Salt Lake City, Utah*	75	57	18	Baltimore, Md	78	73	5
Savannah, Ga	75	67	8	Louisville, Ky	77	63	14
Bismarck, N. Dak	63	58	5	Wilmington, N. C	74	75	— 1
Cleveland, Ohio	59	50	9	Detroit, Mich	73	61	12
Eastport, Me	59	49	10	Atlanta, Ga	72	74	— 2
Helena, Mont	57	58	— 1	New York, N. Y	72	66	6
Portland, Oreg. †	48	44	4	Portland, Me	69	55	14
				Boston, Mass	68	57	11
				Rochester, N. Y	67	58	9
				San Francisco, Cal	63	60	3
				Columbus, Ohio	61	48	13
				Buffalo, N. Y	59	46	13
				Marquette, Mich	59	41	18
				Portland, Oreg. †	44	44	0

* No thermometric report. † Records kept by both methods.

ATMOSPHERIC ELECTRICITY.

Numerical statistics relative to auroras and thunderstorms are given in Table X, which shows the number of stations from which meteorological reports were received, and the number of such stations reporting thunderstorms (T) and auroras (A) in each State and on each day of the month, respectively.

The dates on which reports of thunderstorms for the whole country were most numerous were: 12th, 143; 15th, 127; 26th, 177.

Thunderstorm reports were most numerous in: Florida, 156; Illinois, 143; Massachusetts, 126; Minnesota, 136; Ohio, 173.

Thunderstorms were most frequent in: Florida, 25 days; Louisiana, Michigan, and Minnesota, 22; Illinois, 20.

Auroras.—The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four preceding and following the date of full moon, viz, from the 1st to the 7th, inclusive, and also the 29th and 30th. On the remaining twenty-one days of this month 200 reports were received, or an average of about ten per day. The dates on which the reported number especially exceeded this average were: 14th, 31; 15th, 34; 16th, 44; 17th, 43; and 29th, 28.

Auroras were reported by a large percentage of observers