

MIRAGE.

Huron, Dakota, 5th: a remarkably distinct mirage was observed to the east of this station from 8 to 8.40 a. m. The towns of Cavour and Iroquois, distant, respectively, eight and eighteen miles, were clearly visible, as though only a short distance intervened. A train of cars, distant to the eastward about twenty-five miles, was seen, apparently, in mid-air. Houses, barns, grain-stacks and other objects assumed vast proportions.

New London, Connecticut, 19th: Race Rock light-house and other objects were apparently elevated five degrees above their natural position.

Mackinaw City, Michigan, 23d: a very distinct mirage was observed from 9.05 a. m. to 9.15 p. m., showing the image of a two-masted schooner in mid-air, over Mackinaw Island, about ten miles distant.

Mirages were also observed at the following places:
 Webster, Dakota, 1st, 3d to 5th, 9th, 15th, 17th to 19th.
 Saint Vincent, Minnesota, 6th.
 Marquette, Nebraska, 29th.
 Spartanburg, South Carolina, 8th.

MISCELLANEOUS PHENOMENA.

SUNSETS.

The characteristics of the sky, as indicative of fair or foul weather for the succeeding twenty-four hours, have been observed at all Signal Service stations. Reports from one hundred and seventy-one stations show 5,053 observations to have been made, of which four were reported doubtful; of the remainder, 5,049, there were 4,487, or 88.9 per cent., followed by the expected weather.

SUN SPOTS.

Prof. David P. Todd, director of the Lawrence Observatory, Amherst, Massachusetts, furnishes the following record of sun spots for September, 1885:

Date— September, 1885.	No. of new.		Disappeared by solar rotation.		Reappeared by solar rotation.		Total No. visible.		Remarks.
	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	
1, 8 a. m.	1	3	0	0	1	3	4	90†	
2, 10 a. m.	1	10†	0	0	0	0	5	100†	
3, 1 p. m.	0	0	0	10†	0	0	5	85†	
4, 10 a. m.	0	0	1	10†	0	0	4	70†	
6, 2 p. m.	0	0	0	0	0	0	3	45†	
7, 10 a. m.	0	0	0	5†	0	0	3	35†	
8, 8 a. m.	1	10†	0	15†	1	10†	4	30†	
11, 6 a. m.	0	0	0	0	0	0	2	15†	
12, 5 p. m.	0	0	1	3	0	0	1	12†	
14, 11 a. m.	2	25†	0	0	1	1	3	40†	
16, 8 a. m.	0	10†	1	15†	0	0	2	20†	
17, 3 p. m.	1	1	0	0	1	1	3	25†	
20, 10 a. m.	0	0	0	0	0	0	2	3	
21, 2 p. m.	2	12†	0	0	2	5	3	15†	
24, 11 a. m.	0	0	0	0	0	0	4	35†	
26, 4 p. m.	0	0	0	0	0	0	5	65†	
27, 5 p. m.	1	2	0	0	0	0	6	35†	

Facule were seen at the time of every observation.

† Approximated.

SUNSET DISPLAYS

Concerning sunset displays, the following notes have been received:

Windsor, Shelby county, Illinois: very brilliant sunset displays occurred from the 14th to the 27th.

Sunman, Ripley county, Indiana: the sunsets throughout the month have been similar to the displays of the autumns of 1883 and 1884, though not so bright.

Logansport, Cass county, Indiana: brilliant sunsets were observed on the evenings of the 1st, 14th to 18th, 21st to 27th; those of the 14th, 15th, 17th, 18th, and 23d were unusually bright.

Cedar Rapids, Linn county, Iowa: remarkably bright sunsets were observed from the 10th to 20th.

Des Moines, Iowa: on nearly every clear morning and evening during the month sun-glows were observed.

Wellington, Sumner county, Kansas: brilliant twilight glows were observed without interruption from the 13th to the close of the month, those of the 22d and 23d being especially bright.

Elk Falls, Elk county, Kansas: exceptionally brilliant sunsets were observed on the 21st and 22d.

Genoa, Nance county, Nebraska: during the last two weeks of the month the brilliant glow in the western sky at sunset was very noticeable.

Auburn, New York: the sunsets during the month have been remarkably brilliant.

Embarras, Waupaca county, Wisconsin: bright sunset displays were observed on nearly every clear evening during the month, some of the displays being remarkably brilliant.

Dale Enterprise, Rockingham county, Virginia: the sun-glows during the month were very brilliant.

The following is an extract from the "Bulletin of the New England Meteorological Society" for September, 1885:

The color of the skies after sunset again deserves note. Many observers record special coloring on dates from the 12th to the end of the month. The colors are variously described as orange, crimson, and pink, and the illumination reported as lasting from one-half an hour to over one hour after sunset.

DROUGHT.

Lynchburg, Virginia, 18th: in many sections of this state and in North Carolina no rain has fallen during the last six weeks. The tobacco crop has suffered seriously.

Reidsville, Rockingham county, North Carolina: up to September 20th an unprecedented drought prevailed in this vicinity. The creeks and wells in the surrounding country were nearly dry. It is estimated that in Caswell and Rockingham counties not more than one-half of an average tobacco crop will be produced.

Nashville, Tennessee, 26th: severe drought now prevails in this part of the state. The grass, which two weeks ago was in promising condition, has dried up, and farmers are feeding their stock with winter provender. Owing to the dryness of the soil, ploughing for winter wheat has been retarded.

Amherst, Hampshire county, Massachusetts: severe drought prevailed in this section at the close of the month. The total rainfall for the month was less than one inch.

Yellow Springs, Greene county, Ohio, 30th: during the last seventeen days of the month no rain fell in this vicinity.

Northfield, Rice county, Minnesota, 30th: no rain fell during the last decade of the month, and at the close of the month pastures were suffering in consequence of drought.

Helvetia, Randolph county, West Virginia, 30th: severe drought has prevailed in this region during the month. Pastures have failed, and the water-supply for stock has become insufficient in some localities.

New York City, 30th: drought has prevailed in this vicinity and on Staten Island during the month. In many places wells and cisterns were entirely exhausted, and crops have been damaged to a great extent.

Dale Enterprise, Rockingham county, Virginia, 30th: severe drought prevailed in this locality during the entire month. Farming operations have been seriously retarded, and the water-supply for stock and household uses has been limited.

Wytheville, Wythe county, Virginia, 30th: at the close of the month the ground was unusually dry and the streams were very low.

EARTHQUAKES.

Toronto, Ontario, 4th: quite a severe shock of earthquake was felt in the villages of Campbellford, Hastings, and Norwood, east of here, at 9.40 a. m. of the above date.

Los Angeles, California, 13th: a very perceptible shock of earthquake is reported to have been felt in this city at 4 a. m. The tremor was from southwest to northeast.

San Diego, California, 13th: two slight shocks of earthquake, separated by an interval of about three seconds, were distinctly felt at 7.34 a. m. (eastern time). The wave passed from east to west, and ended with a peculiar jar which produced an effect similar to that caused by a train when suddenly brought to a stand. The two shocks, with the interval between them, were of about twelve seconds' duration.

Poway, San Diego county, California, 13th: two distinct shocks of earthquake were felt at 4 a. m.

Murrieta, San Diego county, California, 13th: three shocks of earthquake occurred here at about 4 a. m. The direction of the earthquake wave was from west to east. No serious effects were produced.

Cahuenga, Los Angeles county, California, 13th: an earthquake shock was felt here at 5 a. m. Six or seven gentle vibrations were felt; direction from northwest to southeast; duration about three seconds.

The following is an extract from "The (Baltimore) Sun" of September 19, 1885:

LONDON, September 18.—An earthquake, of eight seconds' duration, occurred to-day at Naples.

Pittsburg, Pennsylvania, 26th: at 3.30 p. m., this date, a shock, resembling an earthquake, was felt at various points along Chartier's railroad, between Mansfield and Washington, a distance of thirty miles.

FOREST AND PRAIRIE FIRES.

Cahuenga, Los Angeles county, California: from the 14th to 20th extensive fires prevailed in the mountains about fifteen miles to the westward of this place. On the 21st and 22d fires occurred in the mountains and hills to the north and east of station.

San Luis Obispo, California: a smoky atmosphere prevailed here during the 20th and 21st, being caused by the prevalence of extensive forest fires to the north and east of this place.

Richardton, Stark county, Dakota: on the 18th a prairie fire started in this vicinity. The prairie grass being very dry, the fires spread rapidly and burned over a very large area, probably one thousand square miles. On the 24th extensive buildings and hay-stacks at the Richardton Ranch, on the South Fork of the Knife River, were burned. At the close of the month the fires had died out.

Bismarck, Dakota: very destructive prairie fires prevailed in this part of the territory from the 18th to 25th. Large areas were burned over, and many buildings were destroyed. In some instances farmers lost their entire possessions. In the vicinities of Steele, Kidder county, Sterling, Burleigh county, and Buffalo, Cass county, the fires destroyed large quantities of hay, grain, out-buildings, etc. At Ayr, Cass county, a large amount of damage was done. In Barnes county numerous out-buildings and much valuable property were destroyed.

Poway, San Diego county, California: from the 16th to 23d forest fires burned over a considerable area to the northeast of this place; no serious damage has been reported.

Prairie and forest fires have also been reported from the following stations:

- Bismarck, Dakota, 16th to 21st, 24th, 29th, 30th.
- Webster, Dakota, 24th.
- Saint Vincent, Minnesota, 10th, 21st, 25th, 26th, 27th, 29th, 30th.
- Moorhead, Minnesota, 20th.
- Fort Buford, Dakota, 19th, 21st, 22d.
- Fort Yates, Dakota, 25th.
- Poplar River, Montana, 21st, 22d, 25th, 28th, 29th, 30th.
- Fort Maginnis, Montana, 26th, 27th, 29th, 30th.
- Fort Supply, Indian Territory, 24th.
- Linkville, Oregon, 1st, 8th.
- Lakeview, Oregon, 15th.
- Los Angeles, California, 21st, 24th.
- San Diego, California, 20th, 21st, 23d.
- Fort Totten, Dakota, 30th.

INSECTS.

Helvetia, Randolph county, West Virginia, 30th: grasshoppers have caused much injury to the pastures in this vicinity.

Sunman, Ripley county, Indiana, 30th: in many places in this county grasshoppers have completely destroyed the pastures and meadows.

METEORS.

Burlington, Iowa, 2d: an unusually brilliant meteor appeared at 11.15 p. m., near the zenith, and passed to within 20°

of the northwestern horizon, remaining visible one and one-half seconds; it exploded like a rocket at its disappearance.

Prescott, Arizona, 10th: at 9 p. m. a very brilliant meteor was seen in the southeastern sky. It was first observed at an altitude of 45° and passed in a direct line toward the horizon and disappeared at an altitude of 10°.

Buckfield, Maine, 26th: at 4.30 a. m. a very brilliant meteor was observed near the southeastern horizon; it passed in a straight line from east to west, being visible for about seven seconds; it was apparently about ten or twelve inches in diameter.

Meteors were also observed in the various states and territories, as follows:

- Arizona.—Wickenburg, 5th.
- Dakota.—Webster, 18th.
- District of Columbia.—Washington City, 18th.
- Florida.—Manatee, 4th, 5th, 16th, 28th, 29th, 30th; Limona, 5th, 8th, 29th.
- Illinois.—Syracuse, 19th.
- Iowa.—Davenport, 14th.
- Maine.—Buckfield, 28th.
- Maryland.—Woodstock, 1st, 6th, 16th, 30th.
- Massachusetts.—Rowe, 14th, 18th, 20th, 29th.
- Minnesota.—Rochester, 12th.
- Nebraska.—Genoa, 9th.
- New Jersey.—Dover, 6th; Beverly, 13th, 21st.
- North Carolina.—Wilmington, 9th, 12th; New River Inlet, 29th.
- Ohio.—College Hill, 1st.
- Oregon.—East Portland, 16th.
- Pennsylvania.—Dyberry, 29th.
- Virginia.—Fort Myer, 2d, 13th.

MIGRATION OF BIRDS.

Geese flying southward.—Sacramento, California, 8th, 9th to 14th, 28th, 29th; Cape Mendocino, California, 11th, 18th; Red Bluff, California, 27th; Vermillion, Dakota, 13th; Fort Bennett, Dakota, 25th, 26th; Webster and Fort Buford, Dakota, 28th; Cape Henlopen, Delaware, 29th; Keokuk, Iowa, 14th, 15th; Saint Vincent, Minnesota, 16th; Linkville, Oregon, 27th, 28th; Cleburne, Texas, 14th; Pysht, Washington Territory, 8th; Neah Bay, Washington Territory, 9th; Port Angeles, Washington Territory, 27th; Fort Bridger, Wyoming, 27th.

Ducks flying southward.—Des Moines, Iowa, 29th, 30th.
 Cranes flying southward.—Allison, Kansas, 11th, 26th.
 Cormorant flying south.—Kitty Hawk, North Carolina, 25th.
 Rio Grande City, Texas, 3d: several flocks of Mexican parrots were observed flying northward on this date. It is stated that these birds have not been seen in this vicinity since 1868, and their appearance is somewhat remarkable.

POLAR BANDS.

- Montrose, Colorado, 18th.
- Archer, Florida, 4th.
- Riley, Illinois, 6th, 21st.
- Salina, Kansas, 17th.
- Portland, Maine, 14th.
- Somerset, Massachusetts, 7th.
- Escanaba, Michigan, 28th.
- Beverly, New Jersey, 28th.
- Mountainville, New York, 6th, 11th, 14th.
- Wauseon, Ohio, 23d.
- Nashville, Tennessee, 10th.
- Rio Grande City, Texas, 22d, 23d.
- El Paso, Texas, 27th, 29th.
- Fort Myer, Virginia, 2d.
- Dale Enterprise, Virginia, 2d, 27th.
- Wytheville, Virginia, 17th.
- Prairie du Chien, Wisconsin, 4th, 17th.

SAND STORMS.

- Fort Thomas, Arizona, 1st, 2d.
- Los Angeles, California, 21st.

WATER-SPOUTS.

The s. s. "City of Para," L. Dexter, commanding, in N. 26° 16', W. 74° 04', on September 5th, passed a water-spout.

The s. s. "Flamborough," P. J. Fraser, commanding, in latitude 28° N., longitude 68° W., saw several water-spouts, the weather being calm and the sea smooth.

The bark "Western Chief," F. Sander, commanding, in N. 41° 20', W. 58° 01', on the 9th, passed a water-spout.

The ship "Hermon," F. N. Marvin, commanding, in N. 52° 09', E. 2° 45', saw a large water-spout. The same vessel, on the 27th, in N. 52° 44', E. 3° 47', saw another.

The British s. s. "Laurestina," Robert Batty, commanding, on the 16th, when fifty miles south-southwest of Cape Hatteras, North Carolina, saw four water-spouts in an east and west line moving eastward. They were about two and one-half miles apart, and were crossing the path of the vessel. The two middle spouts disappeared after a heavy peal of thunder, they having been, apparently, dissipated by it, and the remaining ones were soon after hidden by rain.

Meteorological record of voluntary observers and Army post surgeons, September, 1885.

The maximum and minimum temperatures at stations marked thus (*) are from readings of other than standard instruments.

Table with columns for Stations, Temperature (Maximum, Minimum, Mean), and Rainfall. Includes entries for Alabama, Georgia, Illinois, Michigan, Indiana, Iowa, Louisiana, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Meteorological record of voluntary observers, etc.—Continued.

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