

| THE LIGHT IN THE SKY.

THE GREAT ELECTRIC DISPLAY IN THE CLOUDS EARLY YESTERDAY MORNING.

A great deal of interest was excited yesterday by the magnificent auroral display of the night before. Until the day broke the heavens were ablaze with light. The spectacle between 12 and 1 was particularly beautiful, and many remained up to see it. The weather was fine, and half of New-York seemed to be out of bed watching the skies. Attractive as the auroræ or northern lights always are, seldom if ever were they viewed with greater interest or by larger numbers than on Sunday night. Later in the morning, however, while nearly the whole City was wrapped in slumber, the most brilliant sight of all, perhaps, was presented. At 2:45 o'clock a perfectly defined and highly nebulous arc formed in the north-west. From Printing-house-square one end looked as if resting on the City Hall dome and the other on St. Paul's spire. As a fitting finale of the exhibition, at 3:30 o'clock a broad red band appeared in the west. It was in the shape of a huge sword. To the beholder it seemed to start from the ground, and it extended up until its point almost reached the zenith. Gradually it swung around to the north and slowly sank until it disappeared altogether. While it was at the brightest a paper might have been read in the open streets. The City was bathed in the blood-red light which streamed down from the firmament and painted the silent, deserted streets and structures. The effect was beautiful in the extreme, and entranced those who saw it. When the sword had vanished into darkness intermittent flashes of light began, and streaks of white ran over the blue vault. The demonstrations continued, though with less striking effects, until the day dawned. No doubt the display kept up long after daybreak, but, of course, it could not be seen when the sun came up in the east. Nothing like it has been seen in years, and where it is supposed by ignorant tribes who do not know the causes that produce it, that it portends evil, there was no doubt wide-spread consternation.

Prof. Henry Draper, the astronomer, said yesterday that the display was the finest that he had witnessed since the great aurora of August, 1860. He examined the skies between 12 and 1 with a spectroscope. A greenish-white and very dense light predominated, and the four lines of red, green, blue, and violet were perceptible. Like a vast umbrella, the northern lights hung over the earth with the four lines for ribs. The star Arcturus was in such a position that it was a focus seemingly for the mass of light which rose and sank almost to the horizon at times. A great deal of pulsation was observed in the lines that came up from the horizon to the zenith. The idea that the aurora was a destroying angel spreading pestilence over the earth, Prof. Draper said, had long been given up, but the science of aurora was not yet entirely clear. The manifestations occurred at from 100 to 150 miles above the earth, where the air was very rare. By running an electric current within an almost exhausted vessel the same effects might be produced. The aurora was simply lightning high in the air, and portended no more evil than a storm of any kind. Lightning was an electric spark that struck through dense air, and the aurora was a spark that traveled through rarified air, with a diffused effect. Nothing was known of the constitution of the aurora beyond the fact that it was associated with hydrogen, as the red light was due to watery vapor in the air. The prevalent belief among astronomers that auroræ were connected with the condition of the sun had been growing steadily for years. Outbursts on the sun were generally followed by auroral manifestations on earth. The sun was quiescent and active by turns in what was known as the 11-year period. It was now approaching the maximum of its disturbance. The appearance of the aurora of 1860 and the present one, with an intervening one of note, made the relation to the sun plausible. The formation of a new spot on the sun indicated that an explosion was imminent, and the spot that had been apparent of late suggested the cause of the aurora on Sunday night. The explosion excited the electric current in the air.

The effect of the aurora on the telegraph system was serious. From 12:15 until 2 o'clock yesterday morning the wires could scarcely be worked at all. The air during that time was heavily charged, and the pulsations of the currents rendered it impossible to keep a steady stream of electricity on the wires. It was reported to the Western Union office in New-York that the switch in the Springfield, Mass., office was set on fire. Night Superintendent Dolan, of the Western Union, said last night that the interruption of business was so great that with all its facilities the company was still far behind in the transmission of messages. The deep sea cables were affected, as well as the land system. The currents reached the cables at the terminus. The Anglo-American and French cables were six hours behind in transmission at this end and three hours and a half on the other side. In an "electric storm," as it is known, the cables, or in fact any telegraph wires, can be worked by making a metallic circuit clear of the ground. The greatest difficulty was experienced in the North and West while the aurora lasted. The air seemed to be most heavily charged in the region of the great lakes. It was not until noon yesterday that the atmospheric influence on the wires ceased. The quadruplex and duplex instruments were abandoned because they could not be operated, and it was found necessary to fall back on the old style of sending a single message over the wire at one time. Reducing the facilities to such an extent was what put the company so far behind. Last night, however, the wires were working all right again. During the aurora that began Oct. 16, 1872, and lasted for three or four days, Superintendent Dolan took careful observations of the influences and established the fact that communication could be kept up by forming the metallic circuit. A peculiarity about this aurora was that it continued in a rain and wind storm, and the press dispatches were sent between New-York and Boston on an auroral current. The current was unusually steady in this instance. Ordinarily it is so irregular that one minute it will set the instruments pounding like trip-hammers and the next will leave them silent. Superintendent Dolan some eight or nine years ago followed an auroral current almost around the world. To see an aurora in April, he said, was an unusual thing. Most of them were seen in the Winter. Superintendent Dolan observed that the aurora of 1872 was followed by unusually severe volcanic action. The reason that auroræ played so much mischief with the wires was because the latter were such perfect conductors. An auroral influence was generally felt for two or three days after the first manifestation.

At the Signal Service Bureau last night it was said that auroræ were usually followed by colder and clearer weather. At present the weather is in a settled state and no marked changes had taken place. The appearance of the aurora on Sunday night was reported from all the Western stations. It appeared at a somewhat earlier hour in the West than it did here. The weather last night was clear and warm, and the indications foreshadowed no particular changes.

CHICAGO, April 17.—A remarkably bright aurora borealis was visible here last night. A corona was perfectly defined extending nearly to the zenith. The air was so charged with electricity that the telegraph wires would not work with the batteries connected. The wires between Chicago and St. Paul, Chicago and Milwaukee, and Chicago and Omaha were worked on the strength of atmospheric electricity without batteries. The wire between Chicago and New-York was closed owing to the fact that St. Paul had not been warned to disconnect the battery. The display at the latter city is reported to have been very brilliant.

CINCINNATI, April 17.—A very brilliant display of aurora borealis was visible here all last evening in the north-east, its rays extending beyond the zenith.

DAVENPORT, Iowa, April 17.—The display of northern lights last night was the grandest ever seen here, and continued from 9 o'clock until midnight. Hundreds of people were out witnessing the phenomenon. At times the illumination was of a blood-red color, and again vast silver waves rolled along the heavens.

PETERSBURG, Va., April 17.—The display of the aurora borealis last night was one of the most magnificent sights ever witnessed here, and lasted until 4 o'clock this morning. The light resembled a great conflagration, and was so brilliant that the street-lamps could easily have been dispensed with.

CLEVELAND, Ohio, April 17.—The electrical condition which produced the extraordinary auroral display last night, more or less seriously effected a great many persons here, particularly those troubled with nervous disorders. The Rev. O. L. Binkley, Pastor of the Prospect-Street Methodist Episcopal Church, was prostrated in his pulpit while praying, by what was first supposed to be paralysis. Ladies fainted in the churches during the services, and people who were out of doors as well as in, complain generally of strangely oppressive sensations, similar to those attendant upon an earthquake.