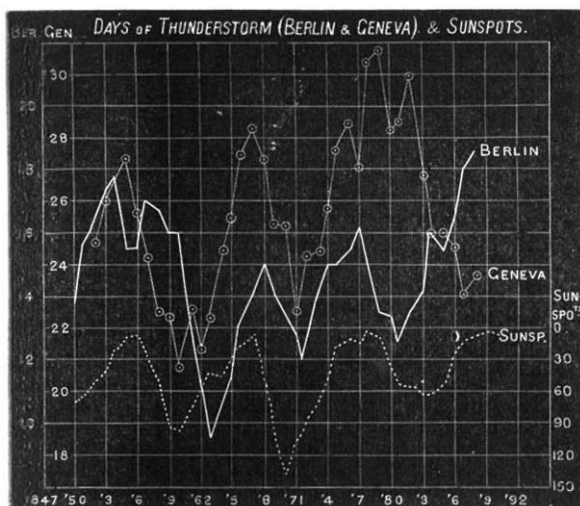


nounced maximum which would correspond with the sunspot minimum of 1889 (I may mention that the number of thunder days this year is, thus far, small, and the smoothed curve seems likely to go down). The sunspot minimum of 1867 seems not to be represented in the curve.

Whether or not we may regard this curve as lending support to the view in question, it may at least prove interesting to observe how our summer thunderstorms have varied in number of late years. The Thunderstorm Committee of the Royal Meteorological Society have not yet, I understand, attacked the question of a possible relation to sunspots. May it not be said, however, that the field looks promising?



While some other Continental records of thunderstorms treated in the same way yield results similar to those for Berlin and Geneva, there are some which cannot be said to support the view under consideration (though also not positively against it). When one reflects on the unsatisfactory nature of many thunderstorm records extending over a long series of years, vitiated by such things as a change of observers, or of the mode of observation or of record, &c., this need hardly be thought surprising.

Year.	Greenwich. Days Thunder (Apr.-Sept.).	Smoothed Values.	Year.	Greenwich. Days Thunder (Apr.-Sept.).	Smoothed Values.
1850	8	—	1871	12	10.4
1851	9	—	1872	17	11.8
1852	11	9.6	1873	9	12.2
1853	11	10.2	1874	12	12.0
1854	9	10.4	1875	11	11.0
1855	11	10.6	1876	11	14.4
1856*	10	11.4	1877	12	14.6
1857	12	12.6*	1878*	26	17.2*
1858	15	12.2	1879	13	16.8
1859	15	12.4	1880	24	15.6
1860	9	11.2	1881	9	13.6
1861	11	9.4	1882	6	13.2
1862	6	7.8	1883	16	11.0
1863	6	8.6	1884	11	10.8
1864	7	7.6	1885	13	10.8
1865	13	9.0	1886	8	11.4
1866	6	9.8	1887	6	13.8
1867*	13	9.4	1888	19	13.8
1868	10	8.6	1889*	23	16.2*
1869	5	9.8	1890	13	—
1870	9	10.6	1891	20	—

Minimum sunspots and maximum thunder days (smoothed values) indicated by an asterisk.

A. B. M.

### The Nova Aurigæ.

THE Nova Aurigæ was observed on the night of September 14, with the Newall telescope, under favourable circumstances. It was almost exactly equal in brightness with the star 85" nf; which of the two was brighter it was difficult to say, because of a peculiarity noted below, but its magnitude may be taken as close upon 10.3.

The spectrum, as seen with a compound prism between eye and eye-piece, showed a very faint continuous spectrum, varying from C to F (or? G);

a bright line quite, or nearly, coincident with C;  
three bright lines close together in the green, the least refrangible one seeming considerably broader than the others;

a faint bright line in the blue (? F);

and with great difficulty I saw at times a still fainter line in the violet. I failed to make out that the bright lines had the dark companions seen in the spring. At first sight the spectrum seemed to consist of a single broad bright line in the green.

With a power of 215 (without spectroscope) I at first thought that the Nova was diffuse, and resembled a minute planetary nebula rather than a star; but on focussing more carefully, I made out that the Nova was distinctly stellar; now, however, the neighbouring stars resembled planetary nebulae. In fact the Nova and neighbouring stars could not be focussed simultaneously. With a power 500 the effect was of course more marked. The Nova owes its visual magnitude nearly entirely to the light that gives rise to the three green lines in the spectrum, and it is interesting to note that it was possible to verify a conclusion drawn from this fact and from the nature of the chromatic dispersion of a refractor of 29 feet focal length:—the image of the Nova was distinctly more point-like than that of the neighbouring equally bright star, when each in turn was focussed as carefully as possible.

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### Atmospheric Depressions and their Analogy with the Movements of Sunspots.

A SOMEWHAT prolonged absence from home has prevented me seeing until now your note on July 21, page 280, in which the writer remarks that the results of M. Camille Flammarion—published in the July number of *L'Astronomie*—"seem to confirm the view suggested by M. Faye that the constitution of [sun] spots resembles somewhat that of the cyclones with which we are familiar."

I write to point out that this is not the theory of M. Faye, but, on the contrary, is the theory of Mr. Herbert Spencer, which he published in the *Reader* for February 25, 1865, and which has since been republished in his collected essays under the title, "The Constitution of the Sun." In it Mr. Spencer first points out the untenability of M. Faye's hypothesis, and then goes on to say:—"The explanation of the solar spots above suggested, which was originally propounded in opposition to that of M. Faye, was eventually adopted by him in place of his own. In the *Comptes Rendus* for 1867, vol. lxiv., p. 404, he refers to the article in the *Reader*, partly reproduced above, and speaks of me as having been replied to in a previous note. Again, in the *Comptes Rendus* for 1872, vol. lxxv., p. 1664, he recognizes the inadequacy of his hypothesis, saying:—"Il est certain que l'objection de M. Spencer, reproduit et développée par M. Kirchhoff, est fondée jusqu'à un certain point; l'intérieur des taches, si ce sont des lacunes dans la photosphère, doit être froid relativement . . . Il est donc impossible qu'elles proviennent d'éruptions ascendantes." He then proceeds to set forth the hypothesis that the spots are caused by the precipitation of vapour in the interiors of cyclones. But though, as above shown, he refers to the objection made in the foregoing essay to his original hypothesis, and recognizes its cogency, he does not say that the hypothesis which he thereupon substitutes is also to be found in the foregoing essay. Nor does he intimate this in the elaborate paper on the subject read before the French Association for the Advancement of Science, and published in the *Revue Scientifique* for March 24, 1883. The result is that the hypothesis is now currently ascribed to him. I should add that, while M. Faye ascribes solar spots to clouds formed within cyclones, we differ concerning the nature of the cloud. I have argued that it is