

Received October 5, 1769.

XLIX. *An Account of Two Auroræ Boreales observed at Oxford. In Two Letters to Mathew Maty, M. D. Sec. R. S. from the Rev. John Swinton, B. D. F. R. S. Custos Archivorum of the University of Oxford, Member of the Academy degli Apatisti at Florence, and of the Etruscan Academy of Cortona in Tuscany.*

GOOD SIR,

Read Dec. 7, 1769. **C**ASTING my eye towards the northern part of the hemisphere, on Sunday, February 26, 1769, about 8^h 30' P. M. I discovered there a pretty bright *Aurora Borealis* of the common kind. For a short time, there was a very quick succession of lucid columns, and coruscations; which seemed smaller than they usually are in such meteors, that appear often enough here. They were of so pale a yellow colour, that some of them seemed to be almost perfectly white. In this, however, nothing very remarkable, or uncommon, could be discerned.

But

But what principally engaged my attention, at this time, was the gradual approach of the *Aurora* towards the south, infomuch that though it was at first most apparently an *Aurora Borealis*, and that of the common kind; it nevertheless, by the gradual variation of its original position, seemed to have commenced a sort of *Aurora Australis*, (1) of which uncommon species of meteors I have given a short account in one of my former papers, before its extinction. This happened a little before nine o'clock; after which nothing worthy of notice, as far as I could learn, during the remainder of the night, in any part of the heavens, occurred.

As the gradual variation of the original position, or situation, of this phænomenon seemed to me a pretty extraordinary circumstance, and was such a one as I had never observed, nor heard of, before; I thought myself hereby sufficiently authorized to communicate the very concise description of this meteor, now sent you, to the Royal Society. You will therefore be so good as to excuse the trouble given you by the communication; and believe me to be, with all possible consideration and esteem,

S I R,

Your most obedient humble servant,

Christ-Church, Oxon.
Sept. 28, 1769.

John Swinton.

(1) *Philosop. Transact.* vol. LIV. for the year 1764, p. 328, 329. Lond. 1765.

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L E T T E R II.

GOOD SIR,

Read Dec. 7, 1769. **B**EING in my parlour, with the fashes down, on Saturday, September 9, 1769, at 8^h 20' P. M. I observed, with no small degree of astonishment, through the glass, such a redness in the sky as proceeds from the reflection of a great fire. This I was at first inclined to consider as a sort of deception, occasioned by the glass through which so uncommon an object seemed to present itself to my view; but stepping out immediately into the yard, I found it to be a real appearance, resembling a flame, in the atmosphere, and consequently a very unusual sight. The meteor was, however, of no very considerable extent; being almost intirely confined to that small tract of the heavens occupied by *Ursa Major*, part of *Ursa Minor*, and the intermediate space, containing the tail of *Draco*, between those two constellations. It remained about 20', after I first discovered it, without any material change, or variation; and at 8^h 40' P. M. as I found by consulting my watch, almost instantly disappeared.

The wind on the 9th was, for the most part, W. and S. W. and the weather showery. The rain,

however, notwithstanding the favourable situation of the wind, was somewhat cold, and the whole day had a lowering winterly aspect. A small shower fell, just before I discovered the phænomenon here described. The light cast by it was nearly equal to that of the full moon, on a cloudy night. The 10th the wind continued in the same quarter as before; and the weather was much the same, attended by a disagreeable chillness in the air, as that of the preceding day. All the principal stars of the above-mentioned constellations very clearly and distinctly appeared, through the seemingly fiery vapour, with which the tract occupied by them was so strangely and so remarkably tinged.

As the luminous appearance seen at London, between eight and nine o'clock, the same night, from the short account given of it in one of the public (1) papers, seems to have agreed in all respects with that observed by me at Oxford, at the very same time, it may be considered, without any impropriety, as the very meteor here described. Admit this, and I can see nothing improbable or unnatural in such a supposition, and it must be allowed, that the atmosphere was at London in the same disposition, with regard to the exhibition of this species of meteors, as at Oxford, the very same instant of time; and impregnated in both places with the same kind of luminous vapour, at that instant, which occasioned the production of the phænomenon I have here been endeavouring to describe.

(1) *The Gazetteer and Evening Advertiser*. N° 1265. SEPTEMBER 11, 1769.

It may not be improper to observe, that the luminous appearance of September 9, 1769, in several respects, was similar to that most remarkable one seen by me here, December 5, 1737; but differed from it in the three following particulars: 1. The former of these was not so red, nor did so much resemble the colour of blood, as the latter. 2. The former did not tinge near so considerable a part of the hemisphere as the latter. 3. The meteor of December 5, 1737, which I perfectly well remember, was of a much longer duration, than that of September 9, 1769. All which will very clearly appear from Dr. Huxham's short description of the former of these meteors, transmitted to the Royal Society, and printed in the (2) *Philosophical Transactions*, compared with the short account of the latter, drawn up by me, in the preceding part of this paper. The meteor of December 5, 1737, different from most, if not all the others, that had till that time been observed, was looked upon, if I remember right, as a singular appearance, by the great Dr. Halley himself. For, that most excellent astronomer, mathematician, and physiologist, I think, told me, when we dined together, at Mr. Swete's, in Greenwich, the following year, that he had never met with a similar phenomenon, in the whole course of his observations.

I must not forget to relate, that a most transcendent brightness, or very uncommon illustration of the atmosphere in the north, presented itself to my view, on September 9, 1769, at 10^h 15' P.M. which

(2) *Philosoph. Transact.* vol. XL. for the month of *December*, 1738, p. 437, 438.

covered about half of the interjacent space between *Ursa Major* and the horizon. The light cast by this most remarkable *crepusculum* seemed much to exceed that of the full moon. It was not, however, of any long continuance; the whole being absorbed by dark fuscous clouds, in less than a quarter of an hour after I first perceived it. This I could not help considering as a sort of sequel to the unusual phenomenon that had presented itself to my view about two hours before.

Since I began this paper, I have been informed by Mr. Parsons, student of Christ-Church, that he and the Reverend Mr. Whitchurch, likewise student of Christ-Church, on Thursday, September 21, 1769, between 8^h and 9^h P. M. discovered a dark and blackish cloud, or vapour, in the north, contiguous to the horizon; from whence issued a meteor, which bore a much greater resemblance to that of December 5, 1737, both in colour and extent, than the luminous appearance I had observed twelve days before. The colour of this meteor was so vivid, and the whole formed so lively a representation of a great deep red flame, that those gentlemen, as well as others that saw it, imagined some of the houses in the town to be set on fire; but, upon inquiry, found that no such accident had happened. It tinged a considerable tract in the northern part of the hemisphere, and particularly the space between *Ursa Major* and the horizon. It soon grew very pale, and its total extinction was so fully completed by 8^h 45' P. M. that not the faintest traces of it could then be discerned.

As very few, if any, instances of this species of meteors, which greatly differ from the common *Auroræ Boreales*, have occurred since Dr. Halley's death, which happened in the beginning of 1742; and as I am fully persuaded of his having declared to me at Greenwich, as has been already observed, that he had met with only one of them, in the whole course of his observations; I was inclined to believe, that the short account of another, or rather two others, of them, transmitted to you in this paper, would not prove unacceptable to the Royal Society, and therefore that you would excuse the trouble given on this occasion, by,

GOOD SIR,

Your much obliged,

and most obedient,

humble servant,

Christ-Church, Oxon.
Sept. 30, 1769.

John Swinton.

P. S. October 2, 1769. We had last night here some beautiful *Auroræ Boreales*, of the common kind; which began to appear in the north and north-east, a little after 8^h, and continued till near 9^h P. M. The flashes, or coruscations, were of a very pale yellow colour, and some of them ascended up to the zenith; the undulations of shining matter were quick and numerous, and the city almost as light as if illuminations had been made in several parts of it.

L. Obser-