

I hope, your wonted goodness will excuse my troubling you to communicate this paper to the Society; and that you will believe me to be, with great respect and esteem,

Rev. Sir,

Your most humble servant,

Budge Row,
Oct. 31, 1765.

Jof. Colebrooke.

Received November 30, 1765.

XXX. *Some Account of the Effects of a Storm of Thunder and Lightning in Pembroke College, Oxford, on June 3, 1765: In a Letter from Mr. Griffith, of the said College, to the Rev. John Swinton, B. D. F. R. S.*

Rev. Sir,

Read Dec. 10, 1765. **I**N compliance with your request, I send you an account of the storm of thunder and lightning, which fell upon Pembroke college, on Monday, June 3^d last. You intimated to me, that some gentlemen of your learned Society had expressed a desire of seeing an authentic account of it; and you have my free leave to communicate this to them, if you think proper.

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In the afternoon of June 3^d, a very black cloud appeared in the wind, which was, I believe, nearly N. E. A little before four, a gentle rain, attended with slight thunder, fell, just sufficient to wet the surface of the streets, &c. But the wind blowing from the northward, the wall of the college fronting the south remained perfectly dry. About half hour past four, came a terrible flash of lightening, attended at the same instant by a violent clap of thunder. The lightening was of a remarkably red colour, and at the instant of the flash, every body, for a considerable distance round the spot where the damage was done, felt and complained of an intense heat; several people were either forcibly beaten down, or fell through fear and surprize. Some have told me, they thought themselves in the middle of fire.

Whether the rain had in some degree dispersed the electrical matter, which was collected again by the attraction of the metal in the windows; whether it came in different streams, or one great one which divided itself, I shall not pretend to say; but it entered into the south side of Pembroke college in four different places at the same instant. I shall give you an exact account of the effects of it in each room. A chimney which fronted the S. was beaten down, and looked exactly as if it had been cut off in the shaft, about 12 feet from the top. In the garret to which the chimney belonged, there is a lath and plaister wall running on each side the fire-place, for the convenience of the room, supporting a kind of dormer roof. At the end of this wall, was a strong oak post, which I observed afterwards was full of nails. This post,

post, roof, &c. was thrown into the room, to a considerable distance, and shattered to pieces; and the window fronting the quadrangle to the N. was blown outwards. It was at first apprehended, that this was the only part of the college which was struck, and that the mischief done in the other rooms was only the effects of the same ball (if I may call it so) conducted from this garret to the other parts. But I confess myself very doubtful of this: for, had that been the case, it should seem that the direction of the electrical matter must have been altered, whereas in every room its course was from S. W. to N. E. The garret above-mentioned was uninhabited. The room underneath in the middle story belongs to the Rev. John Collins, M. A. and Fellow of the college, who, most providentially, was out of town. The lightning entered his room at a window on the W. side of the fire-place; the casement (an iron one) was open, and was little or not at all damaged. The window-curtain, with the frame it hung upon, was thrown at least 20 feet to the opposite corner of the room; the window-seat, and all the wainscoat about it, were shattered to pieces, and carried away in the same direction with the curtain. The door of the bed-chamber, near the window, was extremely scorched, and at the distance of a few feet, was a beaufet which was likewise much scorched, and the brass escutcheons were all forced off. There was in this beaufet some valuable china, and a quantity of glasses, which suffered much. Some of the china had Mr. Collins's arms fixed upon it, and was gilt round the edges; two cups of this kind had each two little triangular notches cut in their

rims, the gilding in those parts being defective. A number of china plates, glasses, &c. were broken. On the lowest shelf was a quart drinking-glass, which had long stood there, inverted. It was probably in some degree fastened to the shelf by the paint. This glass was almost reduced to dust, a great deal of which was found on the uppermost shelf of all. This was, I presume, owing to the sudden expansion of the air within; and to the same cause it must be attributed, that the tops of the canisters were taken off. The tea-spoons were found discoloured and black; but Mr. Collins recollected, that a small drop of mercury from a broken barometer was left in the beaufet, which no doubt discoloured the silver. The window fronting the quadrangle to the N. had every pane of glass in it forced outwards, and broke to pieces; the casement, which was open, escaped unhurt. The lead belonging to each pane was bent outwards exactly in the middle, but there were no signs of fire here; and indeed it is probable, that the lightning reached no farther than the beaufet. The window was undoubtedly blown outwards by the sudden expansion of the air, from the intense heat on the other side of the room. A young gentleman, who stood in his window, was almost blown down by this sudden gust of wind. It must not be forgotten, that a painter was at work in this room when the accident happened. He was providentially at the window, on the other side of the fire-place from that which the lightning came in at. His account is, that he felt an intense heat; saw, as he thought, fire running all round him in circles; that he had a stroke on the shoulder, which beat him
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down, and made him senseless for some time; when he recovered, the room was full of smoke, and smelt strongly of brimstone. Near the window, where the lightning entered this room, it made a round hole through the floor into the ground-room, inhabited by Mr. Williams, a young gentleman of this college, who had gone out but a very little time before. Whether the force which descended from the upper room might contribute to the damage done in this, cannot be well ascertained; it is, however, apparent, that the electrical matter entered this room from without, just in the same manner, and in the same direction, as in Mr. Collins's chamber. Near one corner of the iron window-frame, a round hole, about an inch in diameter, was struck through the stone-work, as if made with a bullet. A strong iron bar in the window was forced into the room, and carried to some distance. The hinges of the window-shutters, and the wall they touched, were discoloured, just as if gun-powder had been fired upon them. A nail happening to be in the stone, on the side of the chimney, the lightning drove it with great force into the solid freestone, making a round hole to a considerable depth. The window-curtain here was thrown to the same distance, and in the same direction, as in the room above, and pretty nearly the same effects appeared; only the wainscot and window-seat being, I think, made of a different kind of board, were not shivered into small pieces, as in the room above, but were thrown in large splinters, and with great force, about the room; some of them broke the window and a large looking-glass on the opposite side, and more than one flew end-ways like an ar-

row, with such force as to pierce through a very strong lath and plaster wall, the ends of them appearing several inches through the wall in the adjoining stair-case. Close to the window where the lightning entered, was a strong piece of oak timber, being the corner of the partition to a closet. This post, 9 feet long, and 6 by 6 $\frac{1}{4}$ inches in the clear, was thrown in a different direction from any thing else, from E. to W. into the closet. It was carried near eight feet, and then struck a cloaths press, with such force, as to do it very considerable damage. At the bottom of this, a hole was made through the floor into the ground: the window of this room was not blown out; a proof that the heat here was not so intense as above. For some time, it was supposed that these three rooms only had suffered; but, going to view the ruins on the outside, I observed some traces of mischief in the roof of the garret opposite to that first mentioned, and near 40 feet West of the chimney which was beaten down. I immediately went into this garret, and though all had been over for more than an hour, the stench of sulphur remained so strong as almost to endanger suffocation. This garret had been for some time used as a lumber-room by the burfar, and, within a few feet of the place where the lightning entered, lay a heap of old iron casements; it came in here with an amazing force, and shivered the side-beam of the roof into ten thousand little splinters, scarcely larger than common needles. As there were many boards, shavings, &c. in the room, it is more than probable something might have taken fire, but most fortunately under a large bow window

on the South side of the room were laid carelessly a number of long iron window-bars almost from one end of the window to the other. These saved the room from further damage; the electrical matter was by them conducted to the corner of the window, and there made a large round hole, and went out of the room to an iron cramp which is on the outside, about 11 or 12 feet long, at the lower end of which a stone was cut by the lightning out of the wall, and from thence it no doubt descended to the street (then quite wet) without farther damage. Upon the whole, we think ourselves extremely happy that no more mischief was done.