

XXIX. *An Account of a very extraordinary Effect of Lightning on a Bullock, at Swanborow, in the Parish of Iford near Lewes, in Suffex. In sundry Letters, from Mr. James Lambert, Landscape-Painter at Lewes; and One from William Green, Esquire, at Lewes, to William Henly, F. R. S.*

LETTER I.

FROM MR. LAMBERT.

Sept. 13, 1774.

R. May 1,
1776. I SHALL now inform you of a very extraordinary and singular effect of lightning on a bullock in this neighbourhood, which happened about a fortnight since. The bullock is pyed, white and red. The lightning, as supposed, stripped off all the white hair from his back, but left the red hair without the least injury. I have been to see the bullock, and have made a drawing of it, which I will send you as soon as I can get more particulars from Mr. Rogers, the proprietor; for, when I saw him, I omitted to ask him, if the hair was all off (as it now appears) when it was first seen the next morning; and whether any hair was found in the field; and if it appeared to be singed or not? The

T t t 2

bullock

bullock does not seem to have been hurt; his skin looks fair and well. Mr. ROGERS informs me, that he has had two other bullocks struck in the same manner; one last summer, that was all white, was stripped of his hair like this, though not all over his back, but chiefly on his shoulders; the other, two years since, was pyed, and affected much like the present. He thinks, it cannot be the effect of any disease, because the beasts were all in good health before and after this accident happened. He is more inclined to think it was the effect of lightning, because when he has had cattle disordered, so as to make their hair come off, he has never observed white hair to come off more than red, &c.; but that it has, if partly-coloured, fallen off promiscuously, and generally in patches; and also by slow degrees, and never suddenly, as in the case of these bullocks. I shall be glad to know your thoughts on this matter, whether it is a new circumstance to you or not; and if you think it much worth attending to. I am, &c.

LETTER II.

FROM WILLIAM GREEN, ESQ.

S I R,

Sept. 28, 1774.

THE inclosed account of the effect of lightning seems to me very extraordinary; perhaps, such instances may be known to you: however, to be certain whether they

they are so or not, I have troubled you with a description of this case; if it should prove to be no novelty, you will only have the trouble of reading it.

In the evening of Sunday the twenty-eighth of August, at this place, there was an appearance of a thunder storm, but we heard no report. A gentleman, who was riding near the marshes not far distant from this town, saw two strong flashes of lightning, seemingly running along the ground of the marsh, at about nine of the clock in the evening. On Monday morning, when the servants of Mr. ROGERS, a farmer at Swanborough, in the parish of Iford, went into the marsh, to fetch the oxen to their work, they found one of them, a four-year-old steer, standing up, to appearance much burnt, and so weak as to be scarce able to walk. This was mentioned to me about a week after the accident happened; and by the description of it, it seemed to have been struck with lightning in a very uncommon manner. The ox is of a red and white colour; the white in large marks, beginning at the rump-bone, and running, in various directions, along both the sides; the belly is all white, and the whole head and horns are white likewise. The lightning, with which it must have been undoubtedly struck, fell on the rump-bone, which is white, and distributed itself along the sides, in such a manner, as to take off all the white hair from the white marks as low as the bottom of the ribs, but so as to leave a list of white hair, about half an inch broad, all round where it joined to the red; and not a single hair of the red, that I can perceive, is touched.

touched. The whole belly is unhurt, but the end of the sheath of the *penis* has the hair taken off; it is also taken off from the *deulap*; the horns and the curled hair on the forehead are uninjured, but it is taken off the sides of the face, from the flat part of the jaw-bones, and it is taken off from the front of the face in stripes. There are a few white marks on the side and neck, which are surrounded with red, and the hair is taken off from them, leaving half an inch of white adjoining to the red. I looked attentively at the feet and legs, and could not discover any hair taken from them (they were very dirty) except from the joint a little above one of the hoofs, where it was partly off. I have sent a sketch of one of the sides of the ox, which will serve to illustrate what I have said, and is better than any description. I have coloured, with faint red, those parts which were stripped of the hair. The farmer anointed the ox with oil for a fortnight; the animal purged very much at first, and is greatly reduced in flesh. I saw it about a fortnight ago, and it was then recovering. I am, &c.

L E T T E R III.

FROM MR. LAMBERT.

Nov. 15, 1774.

I AM sorry for the delay in sending you this drawing; but, as you know the cause, I need not say any thing further than that I have the happiness to acquaint you,
that

that I am now quite recovered from my illness. I have not had an opportunity of seeing Mr. GREEN, therefore cannot tell how his account may agree with mine; but I have endeavoured, as much as possible, to get an exact state of the matter, having carefully inspected the bullock twice, accompanied by my nephew and a gentleman at my house. The creature being, as I observed to you before, remarkably gentle, we could examine every part of him very minutely. You will see by the drawing, that the white hair was all stripped off from his back and down the sides, as low as the greatest diameter of his body, also from the top of the nose, the upper part of both cheeks, and over the eyes, leaving the skin quite bare; but below those places, under the belly, gullet, the under parts of the cheeks, the legs, and ring of white in the tail, together with an edge of white at the parting of the red and white hair, all remained without the least injury. We were the more particular in examining the legs, on account of your mentioning that Mr. GREEN had observed traces of the stroke down them to the ground, in which, I think, he must be mistaken; for, both the times when we saw the bullock, his legs were quite clean down to the hoofs, and the hair seemed to be in a perfect state. If the legs had been at all affected, I think, it could not have escaped our notice in two examinations; and there being no marks of lightning on them, inclines me to think, that the bullock was lying down at the time, and if so, you will readily account for the under parts not being touched. The lightning being conducted by the white hair,

hair, from the top of the back down the sides, came to the ground, at the place where the white hair is left entire; but there is one remarkable circumstance, *viz.* though all the white hair on the upper parts was taken away, as beforementioned, yet the tuft of white hair on the forehead never received any hurt at all. I have conversed with several farmers, &c. in hopes of getting some information relative to those matters, but can meet with nothing perfectly satisfactory. The best account I have been able to obtain is from my neighbour Mr. TOOTH, a farrier and bullock-leach. He tells me, that this circumstance is not new to him; that he has seen a great many pyed bullocks struck by lightning in the same manner as this, both in his father's time (his father being of the same trade) and since; and that the texture of the skin under the white hair was always destroyed, though looking fair at first; and, after a while, it became sore, throwing out putrid matter in pustules, like the small pox with us, which in time falls off, when the hair grows again as before; and that the bullocks receive no further injury. In this state I found Mr. ROGERS's bullock, the second time I saw it, which was about a month after the first visit; some of the scabs were then dropping off, and the hair was coming on afresh. I asked Mr. TOOTH, whether he could recollect among those bullocks which he, or his father, had seen struck dead by lightning, any that were white or pyed? But in this he could not satisfy me; if he could, I think, it would have thrown some light on the subject. I

remember perfectly well, that all the cattle that I have seen, which were killed by lightning, were either black, brown, or red, without any white at all in them. I must observe to you, that this bullock is both marked and affected by the stroke exactly alike on both sides.

I am, &c.

HAVING been favoured with these letters, by gentlemen of the strictest veracity, and likewise particularly curious in their enquiries, I have not the least reason to entertain a doubt of the facts they communicate; and as they may, perhaps, be productive of some important discoveries, respecting the different colours of bodies as conductors of electricity, I imagined, that it would not be improper to lay them before the members of the Royal Society.

To the preceding paper I would beg leave to add the following queries:

1st, Are not the dark-coloured hairs stronger in their texture than the white or light-coloured ones (a)?

2dly, If the dark-coloured hairs are the strongest, may not this be owing to their being more deeply rooted, and partaking more largely of that nutritive matter which produces and supports hair? And does not the change of dark-coloured hair to grey, in persons advanced in years, seem to favour this supposition?

(a) This is a fact so well known to house-painters, that they do not admit a dark hair into their brushes, as they would occasion a disagreeable roughness in their work. J. COVENTRY.

3dly, If the above suppositions are allowed, may not any internal injury to the skin (as a violent electric explosion passing through it) prove more fatal to the white or light hair than to the black, red, or darker colours?

Should the above queries be all acknowledged, by those gentlemen who have considered the subject, to be truths; yet, I believe, they will scarcely be thought sufficient to account for the whole effect of lightning which has appeared in this case, and particularly for the edge of white hair adjoining to the red, which remained unhurt by it; but as they may, perhaps, in some measure have contributed towards this phenomenon, I have barely mentioned them as suppositions, and suppositions only, which have occurred to me.

A SUBSEQUENT LETTER FROM MR. LAMBERT.

DEAR SIR,

Dec. 6, 1774.

I HAVE, according to your desire, enquired of Mr. TOOTH, whether he ever saw a stroke of lightning actually fall upon a pyed bullock, so as to destroy the white hair, and shew the evident marks of burning, leaving the red hair uninjured? He says, he never did; nor can he recollect any one that has. But he gives me an account of a pyed horse of his being killed, four or five years since, in a stable adjoining to his house, by a stroke of lightning which happened in the night; and being very great, Mr. TOOTH thinking it struck his house, immediately

immediately got up and went to the stable, when he saw his horse was struck, and almost dead to appearance, though it kept on its legs near half an hour before it expired. The horse was pyed white on the shoulder and most part of the head; that is, all the forehead and nose, where the greatest force of the stroke came. The hair was not burnt nor discoloured, only so loosened at the root, that it came off at the least touch. And this is the case, Mr. TOOTH observes, with all he has seen or heard of, *viz.* the hair is never burnt, but the skin always affected, as I described it in my former letters. In the above horse, Mr. TOOTH says, all the blood in the veins, under the white parts of the head, was quite stagnated, though he could perceive it to flow as usual in other parts of the body, under the brown hair; and the skin, together with one side of the tongue, was parched and dried up to a greater degree than any he had ever seen before. The horse stood in a stall close to the door of the stable, which was boarded on that side, and through them, he thinks, the lightning struck him. I am, &c.

*Extract of another Letter from Mr. LAMBERT, dated Oct.
10, 1775, with a Drawing N° 3.*

I HERE send you another instance of the effect of lightning on a bullock of Mr. ALSE's, at Glynd, which happened on the 20th of last month; it is similar to the other I sent you in every respect, except that I think the stroke on this must have been greater, as the scarf-skin

seems to be peeling off with the hair all over the rump, like the piece I have herewith sent, which came off from the hip. I think too, that this is more curious, as all the red spots, even those small ones on the side, remain firm and smooth, without the least injury. You will observe also, that, as in the former instance, after the lightning had passed the greatest diameter of the body, the white hair is left intire, particularly under the belly, on the legs, &c. Mr. ALSE, having never seen nor heard of this wonderful phenomenon, could not conceive what was the matter with the bullock, till he sent for Mr. TOOTH, who immediately told him the cause. I am, &c.

HAVING mentioned the foregoing particulars to my learned and ingenious friend Dr. A. FOTHERGILL, at Northampton, he has favoured me with some conjectures, which I shall take the liberty of annexing to this paper; *viz.* “ The recent fact you mention, of the effects
 “ of lightning on the white hair of a bullock, is extremely curious, but seems difficult of solution. Whether it can be explained from the difference of texture
 “ between red hair and white, is doubtful; or whether there is not something peculiar in colours, as being
 “ conductors or non-conductors of electricity, may deserve enquiry. The phlogiston, or inflammable principle, is thought to be the foundation of colour in bodies, and to abound in proportion to the intensity of
 “ the colour. But phlogiston and the electric fluid are
 “ probably

“ probably the same, or at least modifications of the same
“ principle; therefore, red bodies are perhaps replete
“ with electric matter, while white bodies may be desti-
“ tute of it^(b). A body saturated with it cannot receive
“ more, and may escape, while a neighbouring body, not
“ calculated to receive it, may, on its admission, be de-
“ stroyed^(c). Or there may exist a chemical affinity be-
“ tween electricity and the different rays of light, which,
“ in attracting some, and repelling others, may be the
“ foundation of many curious phenomena. But, while
“ we admire the effects; the habitudes and *modus ope-*
“ *randi* of these subtile fluids may, perhaps, for ever
“ elude the cognizance of our senses.”

(b) Many substances must certainly be excepted from this rule. W. HENLY.

(c) This effect of lightning generally happens to such bodies which, in some measure, resist its entrance, &c. merely on account of their being imperfect conductors. W. HENLY.