

the Experiment so as to deceive such as were not very long-sighted; but I must confess I have found it very hard to deceive those who see at a great Distance; tho' they would all be deceiv'd, if the Distances were of 300 or 600 Foot. Now in the Case of the Moon, the Deceit is help'd, because the Vapours, thro' which we see it when low, take away of its Brightness, and therefore have the same Effect as would (or does) happen in the Experiment, when the Light of the Ball *op* strikes the Eye no stronger than the Light of the Ball *CD*.

VII. *A Letter from Joseph Atwell, D. D. F. R. S. and Principal of Exeter College, Oxford, to Dr. Mortimer, R. S. Secr. containing some Observations on a Man and Woman bit by Vipers.*

*Exeter College, Oxford, July 24, 1734*

S I R,

THE Man who was lately bitten by a *Viper* in the Presence of yourself and several Members of the *Royal Society*, having been recommended to some in this Place by Dr. *Oliver* of the *Bath*, I imagin'd that Sir *Hans Sloane* and you will be pleas'd with an Account of such Experiments as have been made here. July 3d, the Man was bit in the Presence of several besides myself, in the public Hall of this College. He received two Punctures in the Wrist, a little above the Thumb: The Blood issued, and more Venom lay upon

on the Orifices, than could be immediately imbibed. The Man complain'd in about half an Hour's Time, that the Poison was got up to his Shoulder, and entering his Body ; but notwithstanding this, we did not suffer him to apply his Medicine [*Sallad-oil*] till an Hour and 10 Minutes after he was bitten : by which Time he began to be flush'd and in a Sweat, his Hand swoln and discolour'd. Upon an Application of his Medicine, he found some Abatement of his Pain ; but the Swelling appear'd more visible, and spread itself farther into his Arm. In about a quarter of an Hour the Man sunk under the Table, and complain'd of violent Pains in his Back and Bowels, nor could he bear to be moved. At last, his Pulse failing, his Jaw being fallen, his Countenance changed, and Eyes fix'd, we stretch'd him upon the Table, and applied the Medicine to his Belly and Stomach. Soon after which, recovering a little, he began to vomit, and brought up more than a Quart of Phlegm and Bile. In this Condition he lay for more than an Hour ; and then was remov'd into my Lodgings ; where he was seized again with a Fit of vomiting, and likewise purging, and continued so till Midnight. I kept him in my own House above an Hour, in Hopes of his growing better ; but his Disorder still continuing, and the Man being too weak and feeble even to stand, I sent him in a Chair home to his own Lodgings ; where he was put into Bed, and after Midnight fell asleep, and awaked the next Morning perfectly well ; excepting that his Arm was still swoln, and the Flesh pitted, as if it had been dropsical. His Arm was bound up in Papers, dipt in his own Medicine ; and this was all, as far as I could observe or learn, that was applied to it. The same Day we

caused two young Chickens to be bit; one died in two Hours, and the other in four Hours Time. A Third was bit three times, and then had the Medicine applied; but it died at the End of ten Hours. The Flesh of this last was grown very black, and there was much extravasated Lymph between it and the Skin, which stunk insufferably; but I could not perceive, that the Viscera were at all discolour'd.

*July 4th*, We had another Fowl, half grown, bit in two Places, and the Medicine was applied: Half an Hour after which, the Fowl eat Meat, and seem'd much recover'd, but was dead in fourteen Hours Time. *July 6th*, We caused two half-grown Cocks to be bit; the first was bit but once, yet violently, and turned black immediately; it had the Medicine applied, eat Meat afterwards, and seem'd pretty well; yet died in twenty Hours. The other was bit two or three times, but hardly wounded, and not half so much discolour'd as the former: We bathed the Wound with *Viper-oil*, but the Fowl died in a little more than two Hours. *July 8th*, We caused two young Pidgeons to be bit; the one had *Viper-oil* applied immediately, but sicken'd and died in four Hours: The other had *Olive-oil* applied, and recover'd perfectly; the Flesh beginning to return to its natural Colour in about an Hour's Time.

*July 17th*, The Woman was bit in the publick Hall of *Brazen-Nose-College*, in Presence of Dr. *Frampton*, Dr. *Frewin*, and several other Physicians, myself, and many others. It had been suspected, that they play'd some Tricks with their *Vipers*, and made them spend their Rage and Venom beforehand: To obviate which, a Physician of the Company had provided

vided some fresh *Vipers*, which he had caught himself a Day or two before, and kept in his own Custody till that Time. The Woman was bit twice by one of these, and received three Wounds, one in the Thumb and two in the Fore-finger. Her Hand was soon swoln and spotted, and her Finger turn'd black. After three and twenty Minutes, she applied the Medicine to her Hand, but not farther than the Swelling went; in which, I think, she was to be blamed, and I suspect the following Illness was in some Measure occasion'd by it. She walk'd home very well in Appearance: But about three Hours after the Bite was received, she grew very sick, and in great Pain; was seiz'd with Vomiting, Purgings, and Fainting-fits, which continued upon her all Night, infomuch that the People of the House despair'd of her Life: Nor had she any Sleep till Noon the Day following. I saw her about Six that Evening, when she awak'd, and found her very well in Spirits, but complaining of most acute Pains in her Finger. Her Arm, Shoulder, Back, and Breast, on that Side, were much swoln and inflam'd: All those Parts thus affected were bound up in Papers soak'd in the Medicine. After this there appear'd upon her Finger two large Bladders, full of a black corrupt Matter; and this not only upon the Wound, but one of them was upon a distant Part of the Finger from it. She could not be persuaded to open them, which I believe would have eas'd her considerably.

*July 20th*, The Swelling was considerably abated, and almost reduced intirely into her Hand, which began to pit: But she complain'd still of her Finger, and could hardly endure to have it dress'd with fresh Papers. She continued in Bed till the 22d, for the sake

sake of keeping her Hand in a more easy Posture ; and then came abroad. The same Day that the Woman was bit, we caus'd a Fowl to be bit ; but the Wound was not deep, and little more than a Scratch. Nothing was applied to it, and it died in twenty Hours. A large Puppy was bit the same Day three times in the Head, had the Medicine applied, but died in about an an Hour. It was known that these People kept themselves fasting those Days when the Experiment was to be tried upon them : This occasion'd a Suspicion that they might take some Antidote to prepare their Bodies : For which Reason, I order'd the Man to bring me some *Vipers* after Dinner, last *Monday*, under Pretence of making some farther Experiments upon Dogs. We had provided at the same Time some fresh *Vipers* without his Knowledge, and then propos'd to him to be bit by one of them, and apply his Medicine immediately. His Hand was besmear'd with the Medicine in applying it to a young Dog, upon which we had just made an Experiment. Two *Vipers* were tried upon the Man, but neither would bite him : One of them attempted it several times, and spilt his Venom, but always caught back his Head again, as if there had been something in the Hand offensive. Upon this, suspecting that the Smell of the Medicine might occasion it, we made him wash his Hand, after which another *Viper* bit him immediately : But whether our Conjecture was right or not, must depend upon farther Trial. The Man received the Bite upon the Joint of the Thumb, and the Blood issued at the two Orifices. He applied the Medicine instantly : The Thumb appear'd black soon, the Hand was swoln, and the Flesh pitted instantly. He drank a Mug of Ale after it

it, and then went home to Bed. Yesterday Morning, his whole Arm was swoln, but the Man was so well that he went six Miles out of Town, and came home again in the Evening. I have seen him again this Morning; the Swelling is almost gone above the Elbow, but the Flesh pits below: The Wound has blister'd, but the Bladders were filled with a Water, and not any Thing of that black Matter which appear'd upon the Woman's Finger. We caus'd a young Dog (mention'd before) to be bit the same Day, and apply'd the Medicine: Another Dog was bit three times in the Nose, and nothing applied: Both are much swoln, but very likely to live. We likewise thrust the Teeth of a *Viper's* Head cut off twenty-four Hours before, into the Flesh of a Fowl, which turn'd black immediately, but the Fowl is perfectly recover'd without any Application.

I leave you, Sir, to make your own Reflections upon these Experiments; and shall only add, that I would by no means encourage the Man to go on with them; since they must at least occasion him much Pain and Misery, more than the Gains are worth, and perhaps injure his Constitution likewise. It is rather to be wish'd, that he could obtain some Reward, and make the Medicine public; in which case there would probably be unfortunate Persons enough in the Country, who would have Occasion to try it, without torturing themselves designedly. I am,

S I R,

*Your very humble Servant,*

Jo. Arwell.