Friend or Foe: Animals and Human Health in Eighteenth Century Britain

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"I will not here presume to search into the Particles of this Poyson, what figure they are of, and how they multiply, how they are able to infect a mass of other particles millions of times bigger than themselves, and destroy and dissolve those most curious Bodies that are so fearfully and so wonderfully made…'Tis pity that the most Noble of Creatures lyes at the Mercy of the most ignoble of particles; and most wonderful that a few Atoms should be able to destroy a whole World, millions of times bigger than themselves."

-Abraham de la Pryme, 1702.[1]

The ability of animals and humans to transmit disease among one another is an inconvenient reality of our interdependence. Yet, outbreaks of foodborne illnesses or viruses that jump across species boundaries are still guaranteed to cause anxiety, specifically because these infections are no longer everyday concerns in affluent nations. This confidence is a privilege afforded by detailed medical knowledge and treatment, strict regulations, and the distance placed between the greater part of the population and the animals on which they depend. The ability to protect against potential pathogens is, evidently, historically unique. Before bacteriology and virology were established, people undoubtedly suffered from a greater range of infectious diseases, several of which are zoonotic in nature. Yet, while fascinating insights can be gleaned from studies of these illnesses in the past, the focus of this research is not to examine zoonotic diseases whose bacterial and viral origins remained enigmatic. Rather, the purpose is to examine the ways in which animals were known, or imagined, to affect human health in eighteenth century Britain, a moment before the advent of modern epidemiology. Notably, when considering these human-animal interactions that influenced wellbeing, a significant paradox appears, which presents certain animals as sources of both injury and healing.

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[1] Abraham de la Pryme. "Extracts of Two Letters from the Reverend Mr Abraham de la Pryme, F.R.S, to the Publisher, Concerning Subterraneous Trees, the Bitings of Mad Dogs, etc. *Phil. Trans.* 23 (1702): 1073-1077, 1076.

While these contradictory views exist in tension, a clear trend nonetheless emerges from this paradox. Regardless of whether these animals offered comfort or danger, they ultimately held the power to influence both mental and physical health, reinforcing the need to consider non-human species in historical analysis.

As the quote above demonstrates, although eighteenth century minds had not yet discovered the many microorganisms at fault for their pains, there was an understanding that some entity could pass between creatures, resulting in illness or injury. In fact, few experiences exposed the power that animals continued to have over people more than a poisonous bite. Of course, this term must be understood in its historical context, as "poison" could encompass both toxic substances, in the modern sense, and what would now be considered contagions.[2] More specifically, within the framework of animal-human interaction, "poisonous" could describe the bite of either a venomous or a diseased animal. This unique definition and understanding of venom will therefore be adopted here to allow for a more authentic analysis of how animals and the associated dangers were perceived.

In 1734, Cromwell Mortimer, a British physician, wrote of his hope for a cure for "the only two Sorts of *venomous Bites* of Animals, to which the happy Soil of *Great Britain* exposes its Inhabitants."[3] Cromwell, like many others, saw these two deadly British poisons to be the bite of a viper, specifically the adder[4], and the bite of a mad dog.

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[2] Consider, for example, the use of the term "poison" to describe cholera: William Budd. "Mode of Propagation of Cholera." *Assoc Med J* 4 , no. 169 (1856): 259-260.

[3] Cromwell Mortimer. "A narration of the experiments made June 1, 1734." *Philosophical Transactions* 39 (1735): 313-320, 319.

[4] The adder, *Vipera berus*, is a species within the viper family. In eighteenth century sources, the term viper is commonly used when referring to the adder. The terms will therefore be used

While a 21st century mind may not automatically think of chemical toxins and the rabies virus as analogous or related, the same cannot be said for Cromwell or many of his contemporaries. W. Gibson, in his guide for farriers, made a similar connection, which, quite unusually for the time, stressed the deadliness of the adder more so than that of the mad dog. Later in the century, a contributor to the *Caledonian Mercury* wrote that, "the most dreadful poison we know is resident in the Animal Kingdom, the bite of the Viper, the bite of the Mad Dog, &c."[5] In addition, medical advice considered the two together, such as a 1749 edition of *The Scots Magazine* that promoted the use of a "cupping-glass" for extracting the poison of any "furious venomous creature," which included vipers and mad cats and dogs. Dr. Richard Mead, a renowned physician and scholar, argued that "there are some Poisons very powerful when mixed immediately with the Blood, which will not operate in the Stomach at all: As in particular the Saliva of the mad Dog and the Venom of the Viper."[6] William Buchan, a well respected Scottish physician, likewise considered both the mad dog and the viper in his section on poisonous animals in the famous work *Domestic Medicine*.[7]

Considering their connection, it seems justified that a discussion, which aims to understand the perceived danger to human health associated with animals, should center around these two seemingly poisonous bites. In fact, these injuries share more in common than their venomous characteristic. Most notably, both mad dogs and snakes provoked an inordinate amount of fear in the British population. Neither rabies nor adder

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interchangeably here, depending on the terminology used in the particular source being discussed, as the adder is the only viper species in Britain.

[5] Caledonian Mercury. 1792. Canine Madness. June 23.

[6] Richard Mead. *A Discourse on the Plague*, 9 ed. London: A. Millar, 1744, 5.

[7] William Buchan. *Domestic Medicine: Or, a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines, 10th ed.* London: A. Strahan, 1788.

venom ever posed a serious threat to human health, as actual mortalities due to these bites were low, yet they inspired long folklore traditions, sensational stories, constant discussion, and desperate treatments. However, this fear was also grounded in logic and may have even served a valuable purpose. This was an age in which infectious diseases were common, yet there were numerous competing medical theories and treatments, with no concept of modern bacteriology or virology. With so many perceived sources of disease, it is unsurprising that people focused so much effort on animal bites, which they could easily pin point as potential dangers. While this preoccupation undoubtedly created an unnecessary amount of fear, it also would have allowed people to focus their anxieties on a threat that they could physically see and, thus, avoid. In addition, the frequently published "cures" for poisons, while adding to the public agitation, also must have provided peace of mind, allowing people to keep their dogs and walk through viper territory, while believing that treatment for any potential bite was possible. In the end, the visibility of these health risks undoubtedly had the potential to create panic. Yet this also may have been a more manageable fear than focusing on the more enigmatic and equally fatal diseases that lurked in both rural and urban landscapes.

Most significantly, the fear of these species and the preoccupation with avoiding or treating their bites demonstrates the ways in which animals held real influence over mental and physical wellbeing. However, this impact also contains inherent contradictions, which caused eighteenth century minds to be conflicted. A dog that had turned mad was terrifying, yet most dogs were loyal and industrious friends. On the other hand, the adder was deadly, yet its body held healing and rejuvenating properties. These animals, thus, presented humans with a paradox, in which they could be valued

and revered, but simultaneously feared and loathed. However, whether loved or hated, these animals possessed real power, challenging the idea that nature can ever truly be controlled, even when considering domesticated species.

Raving Mad

The fear of mad dog-induced rabies[8] was definitive in the eighteenth century, but the theories surrounding its mechanism and treatment were far from certain. In the beginning of the century this illness was often seen as an inflammatory condition, yet evidence from autopsies later changed opinions, and the "nervous" characteristic of the disease came to be emphasized. Madness was also said to arise spontaneously in dogs, the presumed chief carrier, due to climate, food and drink, and their natural inability to sweat. It was understood that a dog's saliva was the primary mode of transmission to humans, but a bite was not necessary, as even a lick could spread madness.[9] This poison was expressed in various terms, as fiery "Fermentative Particles" or as an "Inflammatory Venom."[10] It should also be noted here that hydrophobia, a terrible fear of water, was thought to define almost all cases of rabies and some saw this to be the actual disease itself, rather than simply a symptom.[11] While newspapers and medical publications promised infallible cures for this illness, often created by famous physicians, these remedies were nonetheless criticized. One author even ventured as far as to say that, "we

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[8] It should be noted that in the sources examined, rabies was generally referred to as "hydrophobia," in reference to the supposed fear of water displayed by its victims.

[9] John Douglas Blaisdell, "A frightful, but not necessarily fatal, madness: rabies in eighteenth-century England and English North America" (Ph.D. dissertation, Iowa State University, 1995).

[10] Richard Mead. *A Mechanical Account of Poisons in Several Essays*. London: Ralph Smith, 1708, 89, 93.

[11] Blaisdell. Ph.D. Dissertation.

may draw the conclusion, that it is incurable."[12] It is therefore clear that whatever claims physicians and scholars made, there was no true consensus about the disease and no single treatment that was accepted by all.

With an illness whose survivability was debatable and whose symptoms were agonizing, it should come as no surprise that the stories surrounding supposed victims were dramatic and horrifying, undoubtedly adding to the sense of hysteria. In 1733, the *Derby Mercury* told of the death of Robert Nimmo, who two weeks prior had been sleeping when a mad dog "bit his Face in a desperate Manner," while leaving everyone else in the house untouched.[13] Not only would this story have evoked an eerie sense of intentionality, as if the dog chose its victim carefully, but it also implied that people were not even safe in their own beds. Dogs were, after all, companion animals, sharing close quarters with their owners. Another common theme in reports is that victims transformed into dog-like beasts as the poison progressed. Just a year before Nimmo's death, a Mr. Whitaker died after having been bit on the hand by a mad dog. Using what remained of his senses, he asked all attending him to tie him to the bed with cords and protect their hands from his bites with two pairs of gloves each. Shortly thereafter, Whitaker succumbed to the disease, supposedly barking about a dozen times before he died.[14] Earlier in the century, Abraham de la Pryme had recounted a similar death of a fourteen year-old boy. It was said that the patient had to be held down by four men, as he warned that, "friends and foes were all alike to him, he'd tear them all in pieces."[15] One of the most horrifying cases was relayed in the most dramatic fashion by the *Derby Mercury*,

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12 *Caledonian Mercury*. 1792. Canine Madness. June 23.
13 *Derby Mercury*. 1733. Scotland. March 21.
14 *Caledonian Mercury*. 1732. London. December 12.
15 Abraham de la Pryme. *Phil. Trans*, 1076.

which reported the death of a newlywed bride in Ireland who had been murdered by her cannibalistic husband. It was assumed that his behavior was caused by a mad dog bite he had received three years prior to his wedding.[16]

Evidently, not everyone accepted such stories uncritically. Two weeks after the *Derby Mercury* story was printed, a letter penned by "Incredulous" was published in the *Dublin Courier* questioning its credibility. The author pointed out that a similar case, in which a Scottish man was bitten by a mad dog on his wedding day and killed his new bride that night, was included in Dr. Mead's *Account of Poisons* in 1745.[17] In addition, a contributor to an edition of *The Scots Magazine* earlier in the century argued that the barking displayed by patients was merely hoarse sounds being produced because of an inflamed larynx.[18] Yet, despite well-reasoned doubts, these stories make clear that rabies was often portrayed in a sensational manner, providing gruesome details. In fact, it is likely that some of these reports, like the idea that victims barked, even influenced how people interpreted symptoms if they did encounter a real case. After reading the many reports of terrifying deaths, it is unsurprising that people would claim that it was "undoubtedly the most dreadful malady man is incident to."[19] The symptoms were such that a man in 1728 is said to have committed suicide after having been bitten by a mad dog. In 1760, following dog attacks, a girl was supposedly bled to death and a man was smothered before their madness could develop. Similarly, in 1778, a teenage boy in Leicester suffered an attempted murder, as hospital assistants tried to smother him after

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16 *Derby Mercury*. 1760. Ireland. February 22.
17 *Dublin Courier*. 1760. To the Printer, &c. March 5.
18 *The Scots Magazine*. 1741. A new method of preventing and curing the madness caused by the bite of a mad dog. November 6.
19 *Caledonian Mercury*. 1792. Canine Madness. June 23.

having learned of his bite wound. An earlier attempt sadly succeeded in the case of a boy in York in 1772.[20] These reports are consistent with William Buchan's work, in which he suggests that because some viewed the disease as both horrid and incurable, patients were sometimes abandoned, bled to death, or suffocated.[21] Whether or not all these horrific stories are true, they were common enough to suggest that at least some readers would have feared this fate.

The anxiety these reports induced could also result in official measures. A mad bulldog in 1738 provoked Edinburgh's officials to ban dogs on the streets for thirty days, during which time discovered dogs were clubbed or drowned to death. Eleven years later, a similar act was passed ordering any owners of a mad dog to immediately kill it. All other dogs were to be confined for sixty days and kept indoors at night. Any dog not properly enclosed would be killed, with the city treasurer offering rewards for each dead animal. The same measures were taken in London for two months in 1760, when an epidemic of mad dogs was supposedly terrorizing the city, during which time even the churchwarden for St. Paul's, Covent Garden was distributing rewards for each dog killed.[22] These measures were not just confined to large cities. The same year, the magistrates and common council of Monmouth, Wales ordered all dogs to be confined or muzzled for thirty days, with similar financial incentives being offered for dead dogs. Similar measures were taken in Salisbury, where dogs were confined to their homes in the evening, leading to the death of unclaimed animals and the hanging of a dog that

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[20] *Caledonian Mercury*. 1728. From the Whitehall Evening Post July 25. August 1; *Leeds Intelligencer*. London, Aug. 2. August 5; Blaisdell. Ph.D. Dissertation.

[21] Buchan. *Domestic Medicine*.

[22] Blaisdell. Ph.D. Dissertation; *The Scots Magazine*. 1749. Edinburgh. December; *Sussex Advertiser*. 1760. London, Sep. 4. September 8.

attacked a child.[23] Of course, this response to mad dogs was not a new phenomenon, as Britain had adopted similar measures during plague outbreaks, during which time dogs were suspect.[24]

Yet, not all agreed with the official response to the hysteria surrounding dogs. In response to such an atmosphere, an author in the *Gentleman's Magazine* argued that, "a dread of mad dogs is the epidemic terror which now prevails, and the whole nation is at present groaning under the malignity of its influence."[25] One of the most controversial issues surrounded the proposal of dog taxes, a debate that reached its peak when John Dent, an MP for Lancaster, introduced a dog tax bill into Parliament in April 1796. Dent was not alone in his views, as taxes to help reduce dog populations had been considered throughout the century. Prior to this proposal, legislation had been suggested in 1755, 1761, and 1776, yet each attempt was unsuccessful. Dent primarily viewed his 1796 bill as a method for culling dogs, which he blamed not only for hydrophobia, but also for killing livestock and consuming food that could have been given to hungry humans. The tax was ultimately to discourage dog ownership, particularly among the poor, revealing its classist motivations. These owners were not only judged for spending money on animals rather than on food, but they were also often portrayed as irresponsible, allowing their pets to roam wild or using them for poaching.[26] Dogs that were not fed enough wholesome food were also potential victims of spontaneous madness, another argument

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[23] *Leeds Intelligencer*. 1760. London, Sep. 18. September 23; *Leeds Intelligencer*. 1760. Country-News. September 16.

[24] Keith Thomas. *Man and the Natural World: Changing Attitudes in England 1500-1800*. London: Penguin Books, 1983.

[25] Blaisdell. Ph.D. Dissertation, 151.

[26] Ingrid H. Tague. "Eighteenth-Century English Debates on a Dog Tax." *The Historical Journal* 51, no. 4 (2008): 901-920.

against allowing the poor to keep their canine companions.[27] It was argued that through a tax, "the *Poor* would be restrained in their foolish attachments which eventually operate to their own ruin and the injury of the Community."[28] Dent's bill was, thus, a paternalistic legislation that would protect the public and their livestock from mad or hungry dogs, and the poor from their own supposed folly. However, despite such views, the idea that dogs were "pernicious and destructive animals" that could only be properly controlled by the wealthy was a minority opinion.[29] In the end, taxes were enforced through parliamentary legislation, yet they primarily targeted individuals owning multiple dogs or sporting breeds. Non-hunting dogs were subject to smaller fees and people who were unable to afford such a tax, namely those who did not already pay a window or house tax, were exempt.[30] The resulting tax was therefore a complete inverse of Dent's original intention.

Yet, despite amending Dent's initial proposal to make it more forgiving, the combination of horrific stories in the press and official measures that sanctioned dog culling indicates that a sense of true hysteria existed. Notably, the extent of public anxiety does not appear proportional to the actual effect of infected animals. The bills of mortality for London, published each December, give hard evidence that deaths from mad dog bites were not common, numbering no more than a few per year. In fact, these records show that deaths occasioned from others animals, namely parasitic worms, were actually recorded in higher numbers, yet they did not create the same sense of hysteria.[31] Additionally, it is likely that not all the recorded deaths were caused by rabies in reality.

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27 *Oxford Journal*. 1791. Tax on Dogs. April 16.
28 *Oxford Journal*. 1791. Tax on Dogs. February 26.
29 Tague. "Eighteenth-Century English Debates on a Dog Tax," 914.
30 *Oxford Journal*. 1796. Dog Tax. June 11; Tague. "Eighteenth-Century English Debates on a Dog Tax."
31 See Appendix for these numbers

For instance, there are several diseases in dogs that may present themselves in a similar manner, most notably distemper, which does not cause symptoms in humans. Livestock thought to have the disease, often may actually have been affected by pseudorabies, a herpes infection, as well as listeria or even lead poisoning. In humans, tetanus, another deadly condition, can also have similar symptoms. The theory that this bacterial infection was often mistaken for the effects of a mad dog bite is supported by reports that mention the patient grinning, which is a key characteristic of tetanus, known as Risus sardonicus.[32] Additionally, various illnesses could cause seizures or delirium, which could easily be mistaken for rabies, particularly if individuals were expecting to encounter the disease, due to fear.

This misdiagnosis is also evident in several newspaper reports, based on the timing of the observed symptoms. In 1722, it was reported that a ten-year-old boy instantly became mad after a dog bite and died the following day. Similarly, in 1739, Mr. Knight in Northamptonshire died three days after his dog "thrust his Tongue up his Nostrils."[33] Evidently, neither of these cases accounts for the necessary incubation time of the rabies virus. Occasionally, symptoms of madness would even occur without any encounter with a mad animal. Richard Mead reported that a mother suffered from the disease after her epileptic daughter bit her.[34] Additionally, a twenty-one-year-old woman was reported to have died from this condition in 1739, despite never having been bitten by an animal. It was, however, curiously "observ'd, that when a Duck was in her Sight

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[32] Blaisdell. Ph.D. Dissertation.

[33] *Stamford Mercury*. 1722. A Copy of a Let'er from the City of Oxford. December 20; *Caledonian Mercury*. 1739. London, October 4. October 9.

[34] Richard Mead. *A Mechanical Account of Poisons in Several Essays*. London: Ralph Smith, 1708.

she fell into the strongest Convulsions."[35] Even as late as 1796, the Physical Society for Guy's Hospital reported a fatal case of spontaneous hydrophobia, after a woman had sex while menstruating.[36] There were, admittedly, individuals who recognized overreactions to the disease, noting that many dogs were likely wrongfully accused and killed unjustly. William Buchan notes that there are many situations in which a dog may appear mad, such as an anxious animal searching for its owner, who, when pursued, may bite out of fear. Instead, some argued that the animal should be confined and observed, which would not only prevent any unjustified killing, but would also lessen the anxiety of the individual bitten. Through this course of action, the victim could be sure whether or not the wound was poisoned, rather than dreading the emergence of symptoms, which in humans were thought to present themselves even years after a bite.[37]

Ultimately, this misdiagnosis had two effects. While it increased the perceived number of cases of rabies, adding to the public fear, it also suggested that a mad dog bite was a treatable and survivable encounter. For instance, although rabies is nearly always fatal without vaccine treatment, a dog with distemper would not harm a human through its bite, unless the wound itself suffered an outside infection. Thus, while an unneeded hysteria emerged surrounding mad dogs, this same public agitation created a solution to this self-induced problem, as humans bitten by non-rabid "mad" dogs would inevitably survive, creating a sense of hope. Accordingly, there were a number of suggested treatments, many of which promised complete effectiveness. For instance, a remedy, made from various herbs, flowers, and salt, combined with washing the wound with

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[35] *Caledonian Mercury*. 1739. London, March 8. March 13.

[36] Blaisdell. Ph.D. Dissertation.

[37] *Northampton Mercury*. 1783. To the Printers. July 21; Blaisdell. Ph.D. Dissertation; Buchan. *Domestic Medicine*.

saltwater, was used in a town in Lincolnshire. Nearly the entire population was supposedly infected and only those who did not use this treatment succumbed. A man in Westminster, who was apparently unfortunate enough to be bitten six different times by mad dogs and cats, similarly washed the wound with salt water and remained free from the effects of the poison each time. Another treatment, made from ale, sage, rue, garlic, and London or Venice treacle[38], claimed that it had never failed in fifty years. Some of these remedies enjoyed particular fame, such as that of Dr. Richard Mead, whose concoction of liverwort, black pepper, and milk, supplemented with bathing in cold water, had successfully cured 500 patients. The inclusion of water treatments was common and people often went to be "dipped" in the sea following a bite.[39]

With the benefit of modern scientific understanding, it is clear today that any of these treatments that "cured" patients did so because these people were never infected with the actual rabies virus. Notably, even physicians of the time recognized this fact. Buchan, when noting that many "mad" dogs were not in fact ill after all, pointed out that it is "no wonder that imaginary diseases should be cured by imaginary remedies."[40] Buchan did believe that mad dog cases were, in fact, treatable, possibly because he mistook a canine disease like distemper for rabies. Yet, he did not find the "numberless

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[38] This is not actual treacle, but electuaries, made with many different substances: C.H. Hodson, "Glossary of Terms," in E. Smith. *The Compleat Housewife: or, Accomplish'd Gentlewoman's Companion*. London: T.J. Press Ltd., 1968.

[39] *Caledonian Mercury*. 1726. From Mist's Weekly Journal, Aug. 27. September 5; *Caledonian Mercury*. 1728. From the London Evening Post, Aug. 15. August 22; *The Scots Magazine*. 1741. A Cure for the Bite of a Mad Dog, by a Person of Note. July 1; *Caledonian Mercury*. 1735. London, Aug. 21. August 26; *Derby Mercury*. 1732. London. August 17; *Caledonian Mercury*. 1733. London. January 11; *Derby Mercury*. 1738. London, Jan. 18. January 25; *Newcastle Courant*. 1739. From several London prints, Jan. 6. January 13.

[40] Buchan. *Domestic Medicine*, 529.

whimsical medicines" to be effective, and some he viewed as deadly, as they directed physicians' attention away from supposedly effective cures.[41]

While many of the remedies were likely harmless, despite the fact that they would not, in reality, be effective against an actual case of rabies, some undoubtedly had the potential to harm patients. As madness was associated with saliva, it was believed that excessive salivation could help expel the poison, which could be promoted through the use of mercury.[42] The application of this element was common, taken orally or in ointments, with one recipe suggesting that more than a third of an ounce could be applied.[43] As a point of reference, the EPA's threshold for safe mercury exposure is currently set at a daily dose of 0.1 micrograms per kilogram of body weight.[44] It could be argued that this treatment may have even contributed to the death of patients, such as William Brewer, a young boy of four or five, who was given mercury treatment following a bite. Within two weeks, he came down with agonizing symptoms and was approaching death when he actually began to recover and was even able to swallow solids and liquids the following day. However, his renewed ability to drink prompted another dose of mercurial medicine, after which point his symptoms worsened again and he soon thereafter died.[45] Given this information, it would be impossible to determine whether the medicine, a real case of rabies, or another infection killed this boy. One of the clearest cases of harmful treatment was reported in 1760, when a child died after their

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41 Buchan. *Domestic Medicine,* 529.

42 Blaisdell. Ph.D. Dissertation.

43 *The Scots Magazine*. 1739. A Cure for the Bite of a Mad Dog. November 2; *Caledonian Mercury*. 1767. Dr. Rowley's Receipt for the Bite of a Mad Dog. October 19; *Derby Mercury*. 1795. Hydrophobia. January 22.

44 EPA. "Mercury." Last updated Dec. 29, 2014. Accessed March 2, 2015. http://www.epa.gov/mercury/exposure.htm

45 *Derby Mercury*. 1795. Particulars of a Case of Hydrophobia. September 10.

arm was immediately amputated following a bite to the hand.[46] While amputation was rare, the use of mercury was widespread, suggesting that many of the treatments, which may not have been necessary to begin with, likely harmed the patient rather than providing relief.

The fear associated with the concept of the mad dog is undeniable. Yet, despite this threat, dogs remained an integral part of eighteenth century life, leading historian Keith Thomas to argue that it was England's most treasured animal, even more so than the noble horse.[47] It would seem that despite stories of dogs turning on their masters in a state of madness, people actually became *more* loyal to the species.[48] This growing attachment represented a transformation from earlier attitudes, which more often viewed dogs as only valuable for sport or protection. Some even categorized these animals as vermin, alongside vipers. Yet, new attitudes began to not only reject these previous prejudices, but also to support the ownership of pets, whose primary purpose was to provide companionship, rather than labor. This trend admittedly had earlier origins, demonstrated for instance by the Stuart dynasty's love of dogs, yet by the eighteenth century, pets were prevalent among all social classes.[49] This more emotional perspective emphasized the "fidelity, docility, and great affection" demonstrated by dogs.[50]

The significance of pets in people's lives was a focus of the debates surrounding dog taxes, particularly when considering families who were struggling. It was said that there was "scarce a villager who has not his dog" and opponents of the tax pointed out

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46 *Dublin Courier*. 1760. London, Sep. 2. September 5.
47 Thomas. *Man and the Natural World*.
48 Blaisdell. Ph.D. Dissertation.
49 Tague. "Eighteenth-Century English Debates on a Dog Tax"; Thomas. *Man and the Natural World*.
50 Tague. "Eighteenth-Century English Debates on a Dog Tax," 916.

that many "would rather deprive themselves of some of the necessaries of life, than lose their faithful companion."[51] One rather creative author condemned the idea of a tax, writing from the perspective of a dog named "Brindle" from the "Barking Fraternity of Great Britain." This "dog" reminds the reader that his species has "a feeling of pain, a sense of pleasure, tread the same earth [and] are warmed by the same sun as our masters."[52] Dogs are presented in this piece as loyal, useful, selfless, and industrious. In addition, they care more about their owners than themselves, and promote health and wellbeing among their human friends. Thus, it is argued that the whole species should not be condemned because of the occasional "snarling whelp."[53] As these texts suggest, dogs may have occasionally posed a threat, but ultimately, changing views towards the emotional value of pets meant that the potential risk was worth the rewards.

A Viper's Nest

A paradoxical view towards dogs in the eighteenth century is an easily understood phenomenon. The idea of "man's best friend" was becoming increasingly accurate as the eighteenth century progressed. Yet, this companion could admittedly turn delirious, aggressive, and even deadly. Most dogs would have served, comforted, and entertained their owners without fatal incidents and, thus, dog ownership continued and the role of non-service pets increased. Yet, the perceived threat of madness was grave, especially given that it was thought to occur not just from bites, but also spontaneously, straining an otherwise companionable relationship. This seemingly venomous friend-turned-foe was

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[51] Thomas. *Man and the Natural World,* 105; Tague. "Eighteenth-Century English Debates on a Dog Tax," 917.
[52] Brindle. *The Dogs Plea: or Reasons, Most Humbly Submitted by the Barking Fraternity of Great Britain, to the Men their Masters*. London: R. Griffiths, 1753, 2.
[53] Brindle. *The Dogs Plea,* 4.

similar to another of Britain's poisonous animals, the viper. As previously noted, many intellectuals discussed the bites of these two creatures simultaneously, indicating supposed commonalities. This is not to suggest that the two "poisons" were viewed identically, but rather that without the benefit of modern virology, the effects of a mad dog bite could clearly be understood in a similar way as a snake's toxin. However, while a dog would only occasionally fall victim to madness, a viper's toxicity was a permanent, natural trait. The paradox connected to dogs, in which a trustworthy friend is also feared, must then be inverted for this animal. The most evident attitude towards this snake was one of fear, as it represented danger, sin, and death. Yet, while the viper may have appeared ominous, it also was believed to hold special beneficial and therapeutic powers. Thus, as the dog was viewed as a work and companion animal with the rare but terrifying ability to inflict pain, the viper was a venomous creature, which could, on occasion, heal.

The common European adder (*Vipera berus*) is the only venomous snake native to Britain. This viper survives the chilly British winters through hibernation and is most active between May and September, making the summer months the most common time for attacks. Most reactions to its bite are mild, but its venom can induce symptoms including edema, faintness, vomiting, colic, hypotension, cardiovascular problems, and occasionally death. While the precise systemic effects of the venom are still being investigated and may differ depending on the population of adder, an antidote is fortunately available to victims suffering severe symptoms, thus fatalities remain rare.[54]

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[54] C.J. Reading. "Incidence, Pathology, and Treatment of Adder (*Vipera berus* L.) Bites in Man." *J Accid Emerg Med* 13 (1996): 346-351; T. Malina, L. Krecsak, and D.A. Warrell. "Neurotoxicity and Hypertension Following European Adder (*Vipera berus berus*) Bites in Hungary: Case Report and Review." *QJM* 101 (2008): 801-806.

Experiments with adders and their poison were likewise conducted in the eighteenth century. Dr. Richard Mead was a presumed expert on venom, including that of both the viper and the mad dog. It was his belief that when this poisonous animal bites its victim, it injects a liquid that then "infects the fluid of the nerves."[55] The "mischief" then spreads throughout the body because of the activity of the nervous fluid. The severity of the symptoms was thought to depend on the climate, the size of the viper, and how angry it had been when it bit the victim. Theodore de Mayerne, a 17th century physician whose opinions continued to be published posthumously, interpreted the various reactions to adder venom differently. He maintained that a "robust and sound body" would not succumb to the poison, while in contrast, "a sickly person, under an ill habit of body, or fearful, dyes infallibly in a short time of this venome, without speedy help."[56] Notably, this line of logic places some of the blame on the victim themselves for not having a strong enough constitution, in presumable contrast to himself.

These various studies also inspired treatment regimens. One of the most well known set of experiments took place in 1734 when William Oliver, a viper-catcher, offered himself as a subject to test the effectiveness of olive oil as a cure. He allowed an adder to bite his hand and wrist, and for over an hour no treatment was given, causing him to develop symptoms including shortness of breath, cold sweats, severe abdominal pain and swelling, vomiting, and even intermittent blindness. After this reaction, the wound was rubbed with olive oil as his arm rested above hot charcoals. When his abdominal symptoms continued, he was given olive oil to drink while his wife applied

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55 Richard Mead. *The Medical Works of Richard Mead, M.D.* Dublin: Thomas Ewing, 1767, xiii.

56 Theodore de Mayerne. "A Discourse of the Viper, and Some Other Poysons, Wrote by Sir Theodore de Mayerne, After Some Discourse He Had with Mr Pontaeus, Communicated by the Late Sir Theodore de Vaux, M.D. and F.R.S." *Philosophical Transactions* 22 (1701): 459, 460.

the liquid to his torso. Fortunately, he soon recovered, as did a pigeon that was given a similar treatment. The experimenters were so pleased with the results that the surviving pigeon was paraded around town in triumph and kept for three months, after which time they made a meal of it.[57] Many clearly believed in the efficacy of this treatment, as it was published in newspapers as an infallible cure, even through the end of the century. Notably, similar treatments were also suggested as a cure for mad dog bites, in which the affected limb was to be rubbed with oil and wrapped in flannel.[58] Olive oil was not, however, without its critics, such as Mead, who argued that experimentation had since proved it to be ineffective.[59]

Other treatments included concoctions of plantain leaves, horehound, rum, tobacco, wine, and even powdered vipers.[60] More obscure remedies were also attempted. The *Chelmsford Chronicle* told the story of a girl in Sclavonia who had recovered after her father buried her arm in the dirt for 24 hours following a viper bite.[61] An equally creative solution was recommended earlier in 1758, when it was claimed that applying a live pigeon, specifically its anus, to a wound could cure a patient. The bird's body would attract the poison out of the wound, consequently killing it, but saving the victim.[62] In his 1746 book on husbandry, William Ellis advised his readers to place a hot iron as close to the wound as possible, which was to attract the poison and expel it from the wound. He also told of a practice in the Canary Islands, where snakebite wounds would be cut open,

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57 Mortimer. *Philosophical Transactions.*

58 For some examples see: *The Scots Magazine*. 1749. London. August; *Bath Chronicle and Weekly Gazette*. 1790. Cures for the Bite of a Viper. August 19; Buchan. *Domestic Medicine.*

59 Mead. *The Medical Works of Richard Mead.*

60 *Derby Mercury*. 1799. Remedy for the Bite of a Snake. August 15; *The Scots Magazine*. 1750. Caesar's Cure for the Bite of a Rattle-Snake. August; *The Scots Magazine*. 1778. A Viper's Bite. September 1.

61 *Chelmsford Chronicle*. 1784. Extract of a Letter from Paris, August 10.

62 *Lloyd's Evening Post and British Chronicle*. 1758. A Cure for the Bite of a Viper. June 14.

ligatured, and held upright "out of which the Venom ascends, it being of a firy Nature, naturally tending upwards; and may therefore be attracted by Fire, its Like."[63] Presumably, this treatment must have involved placing the wound right next to fire, in a similar manner as the hot iron. This cutting of the wound or applying a ligature to prevent the spread of the poison was also common advice, though neither of these options is now recommended for adder bites specifically.[64]

Modern understanding of the venom, as well as historical reports, illustrate that the actual risk from these reptiles was fairly minimal. Yet, despite this fact, fatalities did occur. For instance, in 1767 a man from Shirehampton died from a bite, as did another in Cornwall in 1794 who was reported to have proclaimed, "I have killed an adder, and I believe the adder has killed me," following a bite to the neck.[65] The dramatic narrative given in this report is somewhat unique, as many of these deaths were reported quite simply and factually, in stark contrast to the panic surrounding hydrophobia deaths. Several of these cases were also presented as a result of the ill choices of the victim. In 1784, a man in Yorkshire, who had previously been an adder catcher, put a viper's head in his mouth and was bitten. This story was reported as an example of "the folly of sporting with certain danger, especially when it can answer no other purpose but that of gratifying false emulation."[66] Four years later, a young man in Ludham saw an adder on

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[63] William Ellis, "An essay upon the nature of the adder, viper, slow-worm, snake, fox, badger, land eff, &c. and particularly upon the residence, the bite, the venom, and the cure of the three first; set forth in many matters of facts never before published: to be continued throughout the twelve monthly books of Agriculture Improved," in *Agriculture Improv'd: of the Practice of Husbandry Display'd*. William Ellis (London: T. Osborne, 1746, 110.

[64] *Chelmsford Chronicle*. 1785. Extract of a Letter from St. Mary's, in the Island of Scilly, Dated July 13. July 29; *Caledonian Mercury*. 1792. Canine Madness. June 23; Reading. *J Accid Emerg Med*.

[65] *Bath Chronicle and Weekly Gazette*. 1767. Deaths. October 2; *Chester Chronicle*. 1794. Singular Instance of Fatality from the Bite of an Adder. May 16.

[66] *Derby Mercury*. 1784. Derby. July 8.

the road, but picked it up instead of killing it. The snake is said to have grabbed him by the throat and wounded him so mortally that recovery was not expected.[67] Notably, both these reports present the danger of adders, yet in each case the victim is blamed for irresponsible actions, not the snake itself.

Arguably, for some of these recorded deaths, the ultimate cause may not have been the venom itself. In 1749, a man employed by an apothecary was cutting the heads off of adders when the fangs from one of these heads scratched his hand. After symptoms developed, his arm was amputated, but he was unable to survive the ordeal. Sadly, it could have been the surgery itself that caused his death, as was seen with the child whose arm was amputated following a mad dog bite. Similarly, in the same year, a man brought home an adder he thought he had killed. The snake, however, survived long enough to bite this man's neighbor, who attempted to suck the poison out, but succumbed to his wound three weeks later. Considering that death from venom usually occurs within several days of the original bite, it is possible that this man may have in fact died of complications, such as an infected wound. Regardless of the precise cause of death, however, both of these men clearly fell victim to vipers.[68] Similarly, in 1790, a boy in Hampshire succumbed to an adder bite, a fate that was sadly shared by several other children throughout the century.[69] Yet, what is notable about this Hampshire case in particular is that *The Times* reported this as proof of the danger of these snakes since "the

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[67] *The Times*. 1788. Summer Circuits. July 21.

[68] *The Scots Magazine*. 1749. London. August; *The Ipswich Journal*. 1749. From Gen Ev. Post. September 2; *The Scots Magazine*. 1749. London. August.

[69] *The Times*. 1787. Canterbury, July 10. July 12; *Norfolk Chronicle*. 1777. Home News. May 17; *Bath Chronicle and Weekly Gazette*. 1790. Bath, Wednesday, August 11. August 12.

fatality of the bite of a Viper has been doubted by Naturalists."[70] Whether or not this is an exaggeration of naturalists' true opinions, the fact that there was any debate regarding the adder's lethal potential, provides further evidence that these fatalities were, in fact, rare.

Yet, while the sense of hysteria that accompanied mad dogs may not have developed surrounding adders in the press, they were evidently feared or loathed by many. Mead argued that since antiquity snakes have been "an emblem of what is hurtful and destructive" and were thought "to be sent as executioners of divine vengeance upon mankind for enormous crimes."[71] Their supposed ominous power is clear in British, and especially Celtic, folklore. John Campbell, who gathered oral traditions of the Scottish Highlands and Islands in the early twentieth century, wrote that the snake was believed to be an omen of evil that, when seen, should be killed. The head was then to be removed and placed at a safe distance from the body, otherwise the animal could turn into a *beithis*, the deadliest kind of snake. If bitten by one of these, the victim was to run to the nearest water source before the snake could reach it, as failing to do so would be fatal. Alexander Carmichael, collector of Gaelic hymns and charms in the nineteenth and early twentieth centuries, wrote of similar Highland traditions of killing snakes. One tale told of a boy who was bitten by a snake, who then killed the animal and cut it into five pieces. These snake parts had to be buried, otherwise the rotting flesh would attract maggots, which, when they developed into flies, would land on a person and cause cancer.[72] Failing

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70 *The Times*. 1790. September 8.

71 Mead. *The Medical Works of Richard Mead,* 19.

72 John Gregorson Campbell. *Superstitions of the Highlands and Islands of Scotland: Collected Entirely from Oral Sources*. Glasgow: James MacLehose and Sons, 1900; Alexander Carmichael. *Carmina Gadelica: Hymns & Incantations Collected in the Highlands and Islands of Scotland in the Last Century*. Hudson: Lindisfarne Press, 1992.

to kill an adder could be a harbinger of death, yet on the other hand, slaying the first spring viper was good luck, as was killing a snake at the beginning of a journey.[73]

It should be noted that because of the oral characteristic of many of these beliefs and tales, and the imprecision of certain authors, it is difficult to know how widespread these would have been in the eighteenth century. Additionally, it cannot be assumed that oral traditions always translate into practice. However, given the abundance of snake stories in folklore, combined with reports of actual adder deaths and injuries in eighteenth century press, it can safely be assumed that there was a real sense of fear towards these animals. As with commentators who recognized an unneeded hysteria surrounding mad dogs, there were those who acknowledged that fear surrounding snakes could also cause false reports. A contributor to *The Times* in 1791 noted that the nest of adders that was reportedly found in Yorkshire was nothing more than fiction, saying that, "this nest and its 500 eggs were hatched in the author's brain. The fact is that there was but one adder found there this year, and he was DRAGGED INTO TOWN BY THE PEOPLE."[74]

Adders were similarly demonized through figurative discourse, which, like folk tales, may have reinforced negative attitudes towards the actual animal. In Martin Madan's work on the justice system he compares thieves to venomous snakes saying, "highway-robberies threaten the traveler, whether by night or by day… like a dangerous adder, in our roads and streets…"[75] Traitors and political enemies were likewise represented as adders. In 1793, a contributor to *The Times* feared that colluding with the French during their Revolutionary Wars would "be paving the direct road for a

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[73] Marc Alexander. *A Companion to the Folklore, Myths & Customs of Britain*. Stroud: Sutton Publishing, 2002; Malcolm MacPhail. "Folklore from the Hebrides. III." *Folklore* 9, no. 1 (1898): 4-93.
[74] *The Times*. 1791. September 20.
[75] Martin Madan. *Thoughts on Executive Justice, with Respect to our Criminal Laws, Particularly on the Circuits*. London: J. Dodsley, 1785, 14.

Revolution" in Britain. The piece goes on to argue that, "No! the viper that has attempted to infuse poison into the British Constitution must be crushed to death, before the happiness of Europe can be established."[76] While used in this passage as an analogy for traitors, being crushed was, in fact, a fate that these animals actually faced, an action that was perhaps sustained by such rhetoric. Finally, along with criminal and treacherous activity, the adder represented sin. In an early nineteenth century book on religion, the author warns his readers that a sinner must confront his misdeeds at the hour of death, at which time "he sees a whole army of sins mustered up; a viper's brood of his own offspring."[77] Similar advice can be seen in William Jones's *The Book of Nature*, written for children; "the adder is a poisonous snake, and hath a forked double tongue: so do men speak lies, and utter slander against their neighbours, when *the poison of asps is under their lips*." In this, the devil is also portrayed as the ultimate serpent, "who brought death into the world by the venom of his bite."[78] Other scholars have already persuasively argued the idea that figurative language may have a real impact on animals, such as Edmund Russell, who shows similar trends towards insects in the twentieth century.[79] It is not too far of a leap, then, to suggest that a similar negative effect may have resulted from talk of villainous vipers.

The snake, and especially the adder, was thus a real threat, as well as an omen and representation of misfortune, death, and sin. This image of a dangerous serpent is, of course, not unique to Britain or the eighteenth century. Yet, its power was nonetheless

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76 *The Times*. 1793. May 21.

77 R. Challoner. *Think Well On't: Or, Reflections on the Great Truths of the Christian Religion, for Every Day in the Month, 43rd ed*. Dublin: John Coyne, 1820, 67.

78 William Jones. *The Book of Nature; or, the True Sense of Things Explained and Made Easy to the Capacities of Children*. London: C. & J. Rivington, 1829.

79 Edmund Russell. *War and Nature: Fighting Humans and Insects with Chemical from World War I to* Silent Spring. Cambridge: Cambridge University Press, 2001.

widely discussed at this time, especially in tandem with mad dogs. Not everyone, however, viewed such animals with dread. In fact, many scholars and naturalists appeared to admire and even sympathize with venomous snakes, or their look-alikes. In his work in *Philosophical Transactions*, Richard Forster points to the fact that because of an inordinate fear of vipers, people have unjustly hunted down slow-worms,[80] which pose no threat to humans. This fear must then be overcome in order to "save the lives of numberless innocent, perhaps useful creatures."[81] Despite its venom, the adder itself was also defended. Richard Mead points out that, according to Solomon, "God created nothing to be destructive to mankind, but gave to all things their proper nature… Even poisons were not designed to be hurtful, but for good uses."[82] Mead goes on to suggest that the adder needs its poison for survival, as it depends on killing its prey instantly. These ideas are similar to the justification for Virginian rattlesnakes' venom, as even though "Providence hath produced a Creature so terrible to other Animals, yet it seems to have provided it with the Rattle at its Tail, that the Noise thereof might give warning to them to get out of its way."[83] Therefore, to some at least, venomous snakes were not demonic, but simply one of God's creatures, however lethal they may be.

Mead's views towards vipers suggest an inherent purpose and harmony in nature. Thus, although the viper is endowed with deadly force, "in all the earth there are provisions made against death," balancing out this destructive power. Accordingly, there was a perceived therapeutic quality attached to snakes, particularly in Celtic traditions.

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80 Forster is likely referring to *Anguis fragilis*, a legless lizard found in Britain.

81 Richard Forster. "Observations on noxious animals in England." *Philosophical Transactions* 52 (1762): 475-476, 475.

82 Mead. *The Medical Works of Richard Mead,* xiii.

83 Hans Sloane. "Conjectures on the Charming or Fascinating Power Attributed to the Rattle-Snake: Grounded on Credible Accounts, Experiments and Observations." *Philosophical Transactions* 38 (1733): 321-331, 322.

One such belief was that water, in which a preserved snakehead was soaked, could cure future viper bites, or conditions like epilepsy.[84] One of the longest traditions, however, was that connected with snakestones and adder beads. These healing items had regional names, such as the *Maen Magl* (stone for eye ailments) or *Glain y Nadroedd* (bead of the adders) in Wales, and the *glaine nathrachi* (snake bead) or *clach nathrach* (snake stone) in Scotland, but the origin and purpose of each were similar.[85] These snake beads or stones were, in reality, likely prehistoric spindle whorls or glass beads, yet, it was popularly believed that snakes made these items. Although the common tales connected to these stones differ slightly, in most it was thought that snakes gather in groups and then turn in circles. At the center of this mass, from their breath or saliva, a stone is created. From these, the bearer can obtain good fortune as well as protect themselves against snake bites, ward off bad dreams, and heal various sicknesses, like eye ailments. A Welsh tradition also suggested that the owner of such a stone would obtain second sight, enabling them to find treasure.[86]

The rejuvenating and healing powers of snakes were also promoted in published material. Richard Mead suggested that people should eat more viper jelly, broth, and flesh "to quicken the circle of the blood" and "scour the glands of those stagnating

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84 Anne Ross. *The Folklore of the Scottish Highlands*. London: B.T. Batsford Ltd., 1976; Malcolm MacPhail. "Folklore from the Hebrides. III." *Folklore* 9, no. 1 (1898): 4-93; Gabrielle Hatfield. *Encyclopedia of Folk Medicine: Old World and New World Traditions*. Santa Barbara: ABC-CLIO, 2004; Mary Beith. *Healing Threads: Traditional Medicines of the Highlands and Islands*. Edinburgh: Birlinn, 2004; Campbell. *Superstitions of the Highlands and Islands of Scotland*.

85 Beith. *Healing Threads;* Prys Morgan. "A Welsh Snakestone, Its Tradition and Folklore." *Folklore* 94 (1983): 184-191.

86 Alexandra van der Geer and Michael Dermitzakis. "Fossil medicine from 'snake eggs' to 'Saint's bones'; an overview." *Calicut Medical Journal* 6, no. 1 (2008): e8; John MacTaggart. *The Scottish Gallovidian Encyclopedia*. London: Morrison, 1824; Morgan. *Folklore*; Hatifield. *Encyclopedia of Folk Medicine*; John Trotter Brockett. *A Glossary of North Country Words, in Use; with Their Etymology, and Affinity to Other Languages; and Occasional Notices of Local Customs and Popular Superstitions*. Newcastle upon Tyne: Emerson Charnley, 1829.

juices."[87] The Earl of Chesterfield's chief cook also recommended the use of viper broth to purify the blood in his 1733 cookbook. It was supposedly essential to skin the viper while still living, and then cut up the meat, removing the head, tail, and entrails while using the heart and liver for the broth.[88] Daniel Turner's work on skin conditions contains similar praise for the viper's healing powers, pointing to a man with leprosy who consumed more than 150 vipers, after which he "was grown young again, stronger than before, and in every respect more able for all the Functions of Life."[89] Edinburgh's Royal College of Physicians similarly promoted the use of vipers for medicinal purposes and apothecaries continued to sell viper products through the end of century.[90] This use of the adder for healing was part of an ancient tradition. As well as being used to counteract venomous bites, the bodies of these animals were used as general antidotes and for many conditions, such as convulsions, leprosy, plague, and infertility.[91] The viper was, therefore, a creature that possessed power over both life and death.

Conclusion

Eighteenth century texts make clear that mad dogs and vipers were linked in many minds. Although the venom of the adder was a permanent trait, whereas madness in a dog was a rare and contagious state, both were thought to affect humans in ways that were similar enough to be discussed in tandem. Both were caused by a bite, both were

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87 Mead. *The Medical Works of Richard Mead*, 34.

88 Vincent La Chapelle. *The Modern Cook*. London: Nicolas Prevost, 1733.

89 Daniel Turner. *De Morbis Cutaneis. A Treatise of Disease Incident to the Skin, 5th ed*. London: R. Wilkin, 1736, 21.

90 Peter Shaw, trans. *The Dispensatory of the Royal College of Physicians in Edinburgh*. London: William and John Innys, 1727.

91 Mary Spaulding anf Penny Welch. *Nurturing Yesterday's Child: A Portrayal of the Drake Collection of Paediatric History*. Toronto: Dundurn, 2004; Mannfred A. Hollinger. *Introduction to Pharmacology, 3rd ed.* Boca Raton: CRC Press, 2007.

thought to affect the "nervous fluids," and both were believed to be treatable, especially if the poison was removed from the wound immediately. Between the two, canine madness undoubtedly caused the greater the amount of hysteria and discussion, yet newspaper accounts, published scholarly work, and folklore traditions indicate that the adder was likewise feared. However, another thread connects these two phenomena. In both cases, the animal holds notable power. A dog not only had the ability to work, comfort, and serve its owner, but it also possessed the terrifying potential to injure, kill, and spread its madness. Dogs were also considered the origin of this disease, as they were thought to spontaneously generate the sickness, thus, no pet could ever truly be safe from this fate.

The adder, on the other hand, was a constant and potentially lethal danger. Although it could not invoke the same terror as a mad dog, given that it was not a companion animal and its venom was not contagious, this viper undoubtedly frightened many. Yet, the adder was also bestowed with an almost mystical energy as well. Its body could heal and protect, as could the stones and beads it produced. The contradictory views towards these animals may demonstrate a struggle to find balance and control in nature and recognition of its innate power. Dogs may have been loyal and domesticated, but they were nonetheless at the mercy of an often incurable madness that their owners could never truly predict or prevent. Adders were dangerous neighbors, yet the belief in harnessing their power may have made this threat seem more manageable and perhaps even purposeful. The frequent appearance of poisonous animals in published works, newspaper reports, and oral tradition suggests that these creatures had a real and continuous impact on people's lives and physical and emotional wellbeing. Far

from existing in the periphery, animals were, and remain, an integral part of everyday lives, warranting close examination of their real and perceived impact on human health.

Appendix

London Mortality Records 1739-1793

Year	Worm Deaths	Mad Dog Deaths
1739	10	1
1740	13	0
1741	16	1
1742	14	1
1743	10	3
1744	1	3
1745	13	0
1746	12	1
1747	8	1
1748	2	2
1749	9	1
1750	5	0
1751	10	0
1752	7	2
1753	11	3
1754	10	0
1755	11	2
1756	9	0
1757	11	2
1758	6	0
1759	6	0
1761	5	0
1763	7	0
1764	1	0
1766	5	0
1767	1	1
1768	1	0
1769	2	1
1770	6	0
1772	1	1
1773	11	0
1774	2	0
1775	1	2
1776	7	1
1777	6	0
1778	6	0
1779	7	1
1780	10	1
1781	14	0
1782	12	1
1783	18	0
1784	11	2
1785	10	0

1786	13	0
1787	9	0
1788	7	0
1789	4	0
1790	8	0
1791	8	0
1792	7	1
1793	5	0

All mortality records come from *The Scots Magazine*, which published "The London General Bill of Christenings and Burials" each December, with the exception of the numbers from 1752 (these come from the *Caledonian Mercury*. 1753. A General Bill of all the Christening, and Burials from the 10th of December, 1751, to the 12th of December, 1752. January 4). Some years have also been omitted when the associated London mortality records could not be found in the available online archives.

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