Filthy Cellars and Healthy Pets: Relationships between Public Health, Pets and Veterinarians in Cincinnati Prior to World War I

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Queen City Colloquium
University of Cincinnati
Spring 2009
In 1868, Board of Health officials in the city of Cincinnati declared that all animals had to be removed from the basements of city residences. In his report on the state of the city, health officer William C. Clendenin commented that “[t]he extent to which cellars are used throughout the city as depositories for rubbish and filth is truly surprising; --many respectable people [keep] geese, chickens, dogs, and even calves in their cellars…Filthy cellars, especially when they are very damp, are a very certain cause of sickness.”¹ For most of the nineteenth century, cows, chickens, sheep, dogs and cats were allowed free reign of the city and were often kept in the back yards and basements of private citizens. What had changed? Why were animals now expelled from living in close quarters with their human companions?

The Board of Health’s concern for the location of animals in Cincinnati was part of a broader movement to lower the rate of disease in the city. Although this was not the first law to prevent animals from having unregulated contact with humans, its importance lies in the reasoning. During the nineteenth century, Cincinnati, like many American cities, began to focus on providing municipal services such as water, police, and fire protection for its residents. As a part of this trend, city officials sought to clean up many sections of urban areas in places like Cincinnati, focusing on the elimination of tenement housing and the prohibition of free roaming animals within city limits.²

These public health movements were buttressed by new scientific discoveries during the “bacteriological revolution” in such fields as virology and bacteriology which allowed for better understandings of disease transmission and causation. As a result of new scientific findings public health officials, who were usually medical doctors, were able to utilize new methodologies to prevent nineteenth century epidemics of cholera, yellow fever and tuberculosis. These widespread public health movements have been much discussed by urban historians
studying the nineteenth century. In addition, historians have also examined the role that economically important animals, such as horses, cattle and sheep played in public health movements.\(^3\)

However, an aspect that has thus far been understudied is the relationship between public health and “pet” health before World War I. The goal of this study is to understand this connection and provide historians with a new perspective on the formation of the pet as a cultural construct. Historians have often discussed what makes an animal a pet. Katherine Grier’s book, *Pets in America: A History*, provides a solid description of pet culture and provides the best discussion of what makes an animal a “pet.”\(^4\) She suggests that “the most important quality pets share is that they have been singled out by human beings…Pets receive special attention intended to promote their well-being.”\(^5\) As the largest body of companion animals in the nineteenth century, dogs provide historians with an excellent introduction into the relationship between pet health and public health.

The connection between public health and pet health is a crucial one for understanding how people culturally transformed dogs from “animals” to “pets.” However, few historians have attempted to understand the role that pet health played in American society. Other authors, including many veterinarians, have attempted to understand the veterinary profession; yet two primary problems plague these volumes. First, that the authors themselves are veterinarians and thus not trained in historical methodologies. Second, their arguments suggest that pet health care was not widely available until after World War II, which typifies the short memory of non-historian pet scholars.

In the United States, the only major account of a historian attempting a focused understanding of pet health care is Susan D. Jones’, *Valuing Animals: Veterinarians and Their*
*Patients in Modern America.* Valuing Animals is a discussion of the veterinary practice from the nineteenth century through the present day and provides interesting perspectives on the role that veterinarians held in the creation of pet care. However, her discussion of pet health is limited by her insistence that veterinarians did not promote or aim their craft toward pets prior to World War I. Jones’ account does not adequately address the rise of pet health care before World War I and as a result, her findings about the role that pets played in a cultural context are skewed.

At the same time that pet health has been discussed in a limited context by pet historians, it has also been ignored by public health historians. Except for a few scattered mentions of animals being important in the crusade to improve public health, these historians have unanimously overlooked the role that animals played in this movement.

As a response to this oversight in two literatures, this study seeks to fill the considerable gap in scholarship on this topic. It argues that pet health in America was prevalent long before World War I, and that veterinarians attempted to corner the market on the pet health care industry as early as the 1870s. Therefore historians must reexamine the role that pets played in veterinary practice. More importantly, I argue that the push for pet health was supported by several groups, including public health officials and veterinarians, and that because of their efforts, a stronger definition of the “pet” emerged.

Historians have done superb work on the rise of the veterinary industry in America. But they must realize that even though pets did not play a crucial economic role in veterinary careers, they did still hold a role and thus must be studied further. Dog health books, although simple in the nineteenth century, were early precursors to modern pet medicine practices that arose after World War I. The publication of dog health books during the late nineteenth and early twentieth
centuries shows that large numbers of pet owners were able to obtain care for their dogs. In addition, these books became more specialized over time, demonstrating that these volumes were not simply republishing the same advice in a new manuscript. The increasing specialization of dog health care manuals was grounded in the expanding research done by veterinarians and medical professionals in Europe. This research came to America through European trained doctors and veterinarians, showing that pet veterinarians were more highly trained and scientifically grounded than historians have traditionally credited. Finally these books show that veterinarians often asserted the benefits of veterinary care in an attempt to garner business. Veterinarians from the middle of the nineteenth century through the early twentieth century published books on dog health, seeking to explain to their readers that dogs were worthy of costly and time-consuming treatments. Suggesting that dogs were “absolutely unselfish … in a selfish world,” or that a dog would “[stand] by [its owner] in prosperity and poverty, in health and in sickness,” veterinarians before World War I attempted to create and corner the pet health care market by instilling the belief that dogs were worthy of professional medical care.8

While understanding the connection between public health and pet medicine is important for establishing the cultural creation of the “pet,” the expansion of pet health movements provides an exceptional portal for understanding how veterinarians created their own market. As dog health books became more specialized, evolving ideas of disease causation affected the growth of the pet health field. The expansion and transmission of ideas between scientific communities in Europe and the United States caused a groundswell of new beliefs about disease transmission. As a result of these connections, the veterinary practice expanded to focus on dog health as a way to prevent sickness from spreading to humans. In reaction to the foundation of new scientific theories, medical officials worked to limit contact between animals and humans
for fear of transmitting disease. With these ideas in mind, historians will find that the role of pets for late nineteenth century veterinarians may be greater than previously thought.\textsuperscript{9}

While historians should understand that pet medicine was important long before World War I, they must comprehend the cultural ramifications of public health movements for pets. The attempts by the Cincinnati Board of Health to remove free-roaming animals from urban streets forced city residents to examine their relationship with their animals. By eliminating free-roaming animals from the city, public health officials forced residents to determine whether their animal was a stray, and thus a public health threat, or a “pet,” and as such, appropriately licensed and responsibly taken care of. This distinction holds promise for scholars of pet identity formation in the nineteenth century because it marks a distinct point at which an animal must be determined to be a pet or a stray.

Where possible, this article focuses on Cincinnati, Ohio. In the nineteenth century, Cincinnati was one of the largest American cities, and it provides historians with an excellent example of what was occurring in other metropolitan areas. However, developments surely varied in cities that urbanized at different times or rates than Cincinnati. In addition, smaller cities will undoubtedly provide a different model for the relationship between public health and pet health. Therefore, this article represents an opening volley to which, it is hoped, other historians will respond.

This study is broken into three distinct parts. Part one is a discussion of dog health books. It will examine the way that pet health grew and was performed in the nineteenth century, arguing that books on dog health became more specialized over time. It will also discuss the role that veterinarians played in the expansion and legitimization of their profession, suggesting that veterinarians were crucial to developing their own market for pet health care as
early as the 1870s. Part Two focuses on the maturing scientific debates that caused the
expansion and specialization of the medical field and how public health officials and
veterinarians obtained medical information from Europe. In addition, it attempts to understand
why those medical professionals attempted to limit unwanted animal contact with humans during
this period. Finally, this article will discuss the role that veterinary professionals played in the
relationship between public health and pet health, and how a new market for “pets” fostered by
public health laws gave rise to an expansion of the veterinary field.

Books discussing dog health suggest that pet historians need to reexamine the role that
pets played in a cultural sense during the late nineteenth century. The emotional value of pets
was generally recognized as early as the 1890s, when dog owners were able to purchase specially
made collars for their dogs. Thus, the existence of these volumes alone suggests that pets were
present and emotionally valuable enough to warrant literature that advised on their health.
However, the increasing complexity of knowledge also shows that scientists were studying pet
health as a profession, as well as applying available scientific principles to their work. Examples
of this can be seen by examining rabies, one of the most pervasive dog diseases discussed in pet
medical books ranging from 1873-1915.

In the 1870s, books published in America on dog health had little insight into the causes
of rabies. One of these works, published in 1873 by Edward Mayhew M.R.C.V.S., shows some
of the contemporary beliefs about the disease. For instance, Mayhew’s volume argues that
“[t]he dog is naturally the most nervous of all the dumb tribe. His intense affection, his ever-
watchful jealousy, his method of attack, the blindness of his rage, and his insensitivity to
consequences, all bespeak a creature whose nervous system is developed in the highest possible
manner.”¹¹ To this author, the “naturally heightened senses” of a dog made it more susceptible to the disease. However, the discussion of the cause of rabies was not based in any sort of scientific finding, but was merely an assumption by the author. Mayhew noted that the personal characteristics of each animal could determine whether or not it was more likely to develop rabies. This statement, due to the lack of scientific understandings of disease, is representative of the kind diagnosis available for dogs in the mid-nineteenth century. Individual animals caused their own infection; what they did and the characteristics they were born with triggered their disease.

Further showing the scientific ignorance of this generation of veterinarians, Mayhew notes, “Of...treatment of [rabies] we know nothing; neither are we likely to learn, when the nature of the disease is considered...it is highly improbable that medicine could cure what is so deeply seated and universally present.”¹² Mayhew states that veterinarians had yet to discover the causes of rabies and goes far enough to posit that they never would. Yet, while he suggests that the cause of rabies is a mystery, he boldly declares that “[i]rritation or teasing, by exciting the nervous irritability of the dog, appears more likely than any physical want to excite rabies.”¹³

Mayhew shows that the state of pet health care in America during this time was very simple. As historians have generally described, American veterinarians were little more than dog enthusiasts who would publish their work based on personal experience that prevented any serious consideration as real veterinary work. Yet, as scholars have often overlooked, the American state of pet medicine was soon to change with scientific developments that fundamentally altered the way that veterinary science was practiced in North America.

After the publication of Mayhew’s work, scientific beliefs about rabies began to change rapidly. Inoculation experiments on the European continent eventually lead to the foundation of
new beliefs about rabies in America. Experiments by scientists such as Louis Pasteur gave rise to another wave of pet medicine that made its way into dog health care books as early as the 1890s.

Appearing in 1891, *Dogs: Their Treatment and Management in Disease* already noted the importance of science for veterinarians. In his preface he states:

> The rapid advancement in science has wrought many changes in the principles and practice of medicine, added new remedies to the resources of the physician, exploded many old theories, and dissipated countless fancies and prejudices. Well worn paths have been left, new fields traversed, and discoveries made, which aid not only in the cure, but in the prevention of disease. Important lessons have been taught, and the limits of knowledge extended, by trials of endurance which have developed unsuspected latent powers, both in man and animals. Further progress will yet be made, of which speculation is fruitless.14

The advances in science discussed in *Dogs: Their Treatment and Management in Disease* included some of the most important discoveries of the nineteenth century including Pasteur’s germ theory. These discoveries changed the way that veterinarians studied their patients and established standard ways of understanding disease in living organisms.

*Dogs: Their Treatment and Management in Disease* argued that theories of germs and disease transmission played prominent roles in changing the previous understandings of the causation of rabies and its recommended treatment. The book disregarded earlier beliefs about rabies, stating that “[t]he theory of a spontaneous development of rabies so frequently advanced, has been rejected as entirely unfounded by very many of the most intelligent observers…our best authorities have proved the theories untenable and unfounded and that all the causative conditions such as seasons of the year, extremes of temperature, restraint, starvation, suppressed sexual appetite, age, sex, and race are to be regarded neither as direct nor predisposing causes.”15
It continues by asserting, “[i]t is now universally accepted that the poison is communicated almost invariably by means of the bite of a rabid or infected animal.”

Although veterinarians at the time were working on new avenues of study due to European scientific advancements, their knowledge was very limited. The author states:

Nothing is known of the specific infecting principle of rabies…Neither by chemical or microscopic analysis of the saliva of rabid dogs has this virus been detected. It increases by internal growth, and from other poisons it is distinguished principally by this circumstance, that it remains within the vital organism for weeks and even months without producing any diseased symptoms whatever. In what manner, or by what course the specific poison penetrates the body from the wound is unknown, neither has its action while within the system been adequately explained.

Similar arguments for the use of science in the veterinary profession, and a lack of understanding of the disease, are seen in The Dog in Health and in Disease, by Wesley Mills. The author stated that “[r]abies has been treated at great length in some works, much useless speculation being indulged in up to within recent years, when the illustrious Pasteur put the subject on a more scientific basis.” Mills’ work concurred with Dogs: Their Treatment and Management in Disease in stating, “[w]e have still a great deal to learn in regard to predisposing causes, and the real pathological lesion, if there be such visible by the microscope; while we are utterly in the dark as to any method of treatment that has the slightest effect when once the disease is established.”

At the same time that beliefs about the cause of rabies changed, the beliefs about how to treat the disease also changed. With the rise of new scientific discoveries came the beginnings of preventative treatment. Dogs: Their Treatment and Management in Disease, with help from Pasteur’s inoculation experiments, understood that the rabies virus lay in the saliva of an infected animal. Thus, if the saliva did not enter the bloodstream, it would not infect the animal. Mills
suggests that “[s]ucking the wound, a handkerchief twisted tightly beyond the wound to prevent the return of blood as much as possible into the general circulation, and especially vigorous and prompt use of the actual cautery…constitute the best treatment.”\textsuperscript{19} Dogs: Their Treatment and Management in Disease advanced similar advice, directing owners to “[i]mmediately after the bite of an animal presumably rabid, the whole wound should be sucked, and as soon as possible thoroughly cauterized.”\textsuperscript{20} In addition, the author directed “the one who applies suction,” to gnaw at the edges of the wound to “keep the vessels open and bleeding.”\textsuperscript{21}

These methods of treatment, although not scientifically advanced, suggest that veterinarians studying pets were connected to larger scientific movements that dealt with newly developing scientific fields such as blood and virus pathology. They show that the debate over rabies had drastically shifted in twenty years. Gone were the arguments over how animals were infected. The new debates surrounded the reproduction of the disease in healthy animals. Yet these debates were only the beginning of the changes surrounding pet medicine.

Shortly after the turn-of-the-century, influential veterinarians James Law and Veranus Moore each published impressive works on veterinary medicine. These veterinarians were leaders of the scientific veterinary movement in America. Coming from England, James Law took a position at the Cornell Veterinary College, and from there he expanded, professionalized and gave prestige to the veterinary practice, as well as trained other influential veterinarians like Veranus Moore. Law’s Textbook of Veterinary Medicine encompassed five volumes that extensively covered many aspects of veterinary care. His work does not describe rabies in much greater detail than Mills treatise or Dogs: Their Treatment and Management in Disease, yet it is far more comprehensive. It brought together information about experiments being performed and provided updated versions of the knowledge of the disease.
By 1902, the virulence question had not been answered. Law described the professional disagreements about the virulence of rabies through the blood or flesh of infected animals by stating, “Eckel and Lafosse successfully inoculated the blood of goat to sheep, of man to dog and of dog to dog. Yet many of the older observers agree with Peuch and Galtier in pronouncing the blood non-virulent.” While Law described the debate surrounding the virulence of rabies, he also noted the new ability of scientists to kill or weaken the disease. As a response to these discussions, Law entered his own hypothesis by making the claim that “in some partially refractory animals like the sheep, the blood seems to destroy the virus…The probability is that the blood is habitually non-virulent in the early stages and in mild cases, but becomes virulent in violent and advanced cases.”

In addition to James Law’s work, Veranus Moore’s *The Pathology of Infectious Diseases of Animals* provided veterinarians with new information about the inoculation process and how to destroy the virus itself. As an overarching view of pathology, Moore brought together the work of many scientists and related their work to the veterinary practice and attempted to understand how to eradicate the virulence of the rabies virus. He states:

The action of the virus is destroyed by drying and by the action of light. In dry air, protected from light and putrefaction, the virulence of the spinal cord of rabbits is destroyed in fourteen to fifteen days. When spread in thin layers it is entirely destroyed by drying in from four to five days. Sunlight destroys it in about forty hours. The loss of virulence by drying is gradual but quite regular, which fact was taken advantage of by Pasteur in the preparation of his vaccine…Roux found that after four weeks in glycerin at 30[degrees Celsius], the virus in a rabid brain had the same power as when perfectly fresh. The writer [Moore himself] has found that rabbits inoculated with rabid brains that had been kept in glycerin from three to four weeks did not develop the disease as quickly as when they were inoculated with the freshly removed brain.”
Less than twenty years earlier, the causes of the disease were unknown and real treatment unavailable. However, scientific advancements such as Koch’s postulates, which laid a foundation for scientifically describing the causation of disease, made the study of rabies a prosperous field for medical researchers and veterinarians alike. The growing body of work on the rabies virus rapidly changed the way people discussed the disease.

In addition, the language used by Law and Moore was a distinct change from the previous generation of books. The new generation of books was no longer a guidebook to be used by the general public. Instead they were written with an educated and specialized audience in mind. An example of this can be seen when Moore discusses the prevention and treatment of the disease. He states that “[t]here is no treatment for rabies except the preventive inoculation known as the Pasteur treatment by which an immunity is produced by the subcutaneous injection of the virus in attenuated form, beginning with the mildest virus and going gradually up to one which possesses nearly or full virulence…Depending upon the length of time the virus is exposed, to the influences, we can obtain any degree of virulence desired.”24 This kind of language was common in the new generations of dog health books, yet it would have been difficult for laymen at the turn-of-the-twentieth century to understand.

The turn of the twentieth century seems to be a major shift in the formation of professional language concerning the field of dog medicine. The works of Moore and Law reflect the increase in the number of veterinarians working on pet health by describing the work done by a new generation of researchers and the professional arguments on both sides of the virulence debate. The new wave of dog health books utilized the expanding number of professional scientific studies that were rapidly changing the field of veterinary studies; in
addition, these books also dealt extensively with the treatment and pathology of dogs, unavailable in earlier publications.

By World War I, medical books for dogs had become quite specialized. One example, Charles Saunders’ *Canine Medicine and Surgery*, devoted an entire volume to the practices associated with the latest techniques for treating dogs. He states that “this little work…is published mainly for the use of senior students and practitioners. It presumes a knowledge of pathology, histology and anatomy, and aims to deal only with the clinical aspect of the various diseases.” While his discussion of rabies is limited to a synthesis of beliefs, he describes the most recent work being done by other scientists, saying “Noguchi, of the Rockefeller Institute, and Zell, of Chicago, simultaneously and independently have recently isolated and cultivated the cause of rabies, which appears to be a protozoan, present in the tissues of the central nervous system, saliva, and urine.” As a description of the most up to date debates over rabies and an example of the specialized nature of dog health care, Saunders’ volume shows the rapidly advancing pace of the veterinary profession.

The body of works on dog health presented here is important because it shows that veterinarians and medical officials were concerned with pet health in America before World War I. However, these books are valuable for another reason. They show that veterinarians were trying to create a market for pet health care prior to World War I. In *Valuing Animals*, Susan D. Jones asserts that pets were not important for veterinarians until after World War I, when horses were replaced as the major means of transportation, and the success of the Bureau of Animal Industry was effectively eradicating epizootics; thus limiting the need for veterinarians. Jones posits that, as a response to these changes, veterinarians seized the opportunity to create a new market of patients by suggesting pets were worthy of health care.
Jones’ model is useful for understanding the decline in demand for large animal veterinary care. However, her assertion that veterinarians turned to pets as a way to keep their market is overstated. The introductions in many dog health manuals provide evidence that dogs were considered pets, and that the authors attempted to instill in their readers a paternal feeling for companion animals, thus compelling owners to take care of the animal when it was ill.

The attempt to create a market for pet health care is implicitly tied to the publication of pet health books; few authors write books hoping that no one will take heed of their advice. However, concrete evidence is clearly seen in the introduction to these books. Even in 1873, as the veterinary profession was in its infancy, Edward Mayhew brought to readers’ attention the noble qualities of the dog, thus justifying the need to care for it, by saying, “[n]o condition of life is there with which the dog is not connected. The playmate of the infant, the favorite of the woman, the servant of the man, and the companion of the aged, it is seen in and around every home.”28 In 1892, Wesley Mills again noted the importance of the dog by saying, “With none of our friends and helpers among the lower animals would we part so reluctantly as with the dog. No speechless associate of man has ever so entwined itself around the very roots of our domestic life as the dog.”29 As these authors show, during the early years of the profession, it is clear that veterinarians were trying to justify pet health care.

After the foundation of dog health books designed for professionals, the need to justify dog health care in volumes aimed at professionals dwindled because popular audiences would seldom read them. Yet even in 1915, Charles Saunders could not divorce himself from justifying dog health care. As an opening to his book on canine surgery, the author includes “Senator Vest’s Eulogy on the Dog.” It states, “[t]he best friend a man has in this world may turn against him and become his enemy. His son and daughter that he has reared with loving care may
become ungrateful. [Yet] the one absolutely unselfish friend a man may have in this selfish world, the one that never deserts him, the one that never proves ungrateful or treacherous, is the dog.”30 The message is clear; a dog will never leave its owner’s side. As a result, veterinarians attempted to utilize these feelings by suggesting the existence of an animal version of social contract. The man, in return for the faithfulness of the dog, is required to care for the animal.

Dog health books were an easy way for veterinarians to promote the emotional value of pets. By doing this, veterinarians hoped to increase the amount of time and effort people would spend on their pets. However, to bring business to professionally trained veterinarians, and not “horse doctors,”31 they would have to justify their work by arguing it was based in science. As a way to boost their professional prestige, veterinarians often criticized non-licensed practitioners of dog health. Often, veterinarians referred to their background in scientific inquiry, which excluded non-college educated practitioners. For example, Mayhew stated:

To minister to [the dog’s] afflictions…demands no inconsiderable skill…but there are few persons who in their own estimation are not able to vanquish the many diseases to which the dog is liable…Persons of the upper rank honor me with secret communications which in their opinion are of inestimable value; ladies frequently entreat me to try particular nostrums, and sportsmen not seldom command me to do things which I am obliged to decline. In fact, the man who shall attempt to treat the diseases of the dog, will have no little annoyance to surmount. He will soon discover that [veterinary] science unfortunately can afford him but partial help, while prejudice on every side increases the difficulties with which he will have to contend.32

Because of his faith in science, Mayhew’s work resounds with comments on the value of relying on professional veterinarians. Mills declares that “the professional treatment of the dog in disease naturally falls to the veterinarian.” Indeed, he goes even further to suggest that dogs should be taken to specialists and not to veterinarians who focus on horses, stating, “[a] knowledge of equine medicine goes but a little way to qualify a man to treat the dog, and the
sooner this is recognized by the profession of comparative (veterinary) medicine, the better will it be for both the profession and our canine friends.”33 Clearly, veterinarians were trying to steer their audiences to professional veterinary caregivers that focused on dogs.

In an interesting strategy, Mills seeks to appeal to a broader audience by saying that “the book is by no means intended for students and practitioners of veterinary science alone. It is meant for all intelligent persons who breed, keep, or in any way take a special interest in the dog.”34 This statement seems to suggest that anyone can perform adequate animal care practices. Yet Mills attempts to establish the dominance of professional veterinarians by backhandedly saying “the whole work has a scientific foundation, it has been kept as free from technicalities as possible, and will, it is hoped be readily comprehensible by every intelligent person.”35 By suggesting that it is free from technicalities, the author implies that the book is simplified and that the scientific version, thus the scientifically trained veterinarian, is superior.

The promotion of professional veterinary care worked. By the turn-of-the-twentieth century, dog health care books did not need to justify their advanced nature. They simply suggested that “a knowledge of general pathology and the principles of bacteriology [are] taken for granted,”36 or that “this little work…is published mainly for the use of senior students and practitioners. It presumes a knowledge of pathology, histology and anatomy, and aims to deal only with the clinical aspect of the various diseases.”37

Dog health care books slowly became too advanced for the untrained pet health care provider. As such, the burgeoning market for pet health care was steered toward the veterinary profession. Because advancing methods of pet care were explicitly tied to scientific discoveries that affected the medical community at large, untrained veterinary doctors were pushed aside by scientifically trained professionals. However, pet health did not strictly arise from the
implementation of scientific principles by owners who loved their pets. In addition, public health movements played a distinctive role in shaping pet health and defining what a “pet” was.

During the nineteenth century, the newly established Cincinnati Board of Health sought to eliminate the many causes of contagious diseases such as tuberculosis, cholera and yellow fever in the city. To accomplish this goal, Cincinnati officials allowed medical professionals to lead the charge against epidemics. In their attempts to clean up American cities, these medical officers utilized the training that they received in European universities. As a result, scientific discoveries by Europeans in the fields of disease causation and prevention provided an informational background for public health movements in Cincinnati aiming to eliminate disease in urban areas. These public health movements ultimately opened new paths for city sanitation by suggesting that animals could carry disease. While European trained medical professionals came to America and supported the first public health laws, they were not the only ones crossing the Atlantic. Veterinarians undertook the same intercontinental travel and brought the most recent knowledge available to America. As a result, they were able to utilize new knowledge about public health as a way to increase the market for pet health by insisting that pets be clean and healthy.

The state of medicine in Cincinnati changed rapidly during the nineteenth century. Cholera, for example, had ravaged the area several times, including outbreaks in 1832, 1849-50, and finally in 1866. To combat future outbreaks, city officials undertook several methods to keep the city safe, including the creation of permanent boards of health and debates on whether to sanitize or quarantine the city when attempting to prevent infection. However, these actions
were hampered in the early part of the century because the implementation of those measures was based in faulty scientific knowledge.

In the nineteenth century in America, the limited state of disease pathology left many public health reformers with two possible views of disease transmission. As John Duffy notes about public health in nineteenth century America:

Physicians and laymen divided into two major schools, one which believed the disease to be a separate and distinct entity imported from abroad, and a second which argued that [disease] was simply a normal summer fever transformed by certain meteorological and environmental conditions into a pestilential disorder …As might be expected, the contagionists argued for strict quarantine measures to keep the disease out the city, while the anticontagionists or sanitationists advocated elimination of the dirt, filth, and crowding which characterized the older waterfront areas.³⁹

As a result of the primitive level of scientific knowledge concerning disease causation and transmission, cities were not sanitized based on potential hazards, but on how they smelled. Similarly, cities enacted quarantines to prevent new diseases from entering the area, not to prevent disease from spreading once it had penetrated the regional boundary. While Duffy’s statement focused on responses to yellow fever epidemics in the early nineteenth century, these ideas were applied to most diseases and were prevalent for decades. He states that up until the late nineteenth century, “[a] few empirical discoveries, such as vaccination for smallpox, had led to some improvement in conditions of health, but the origin and transmission of diseases were as obscure as ever. Acrimonious debates characterized medical meetings as late as the 1880s as theory vied with theory and theorist with theorist.”⁴⁰

In Cincinnati, the belief that disease transmitted itself through poor atmospheric and sanitary conditions was prevalent in public health reform movements in the 1850s. Alan Marcus notes that “by the mid 1850s, the noxious trades [including distilleries, lard manufactories, soap
factories, slaughterhouses and offal-rendering plants] had become a distinct public health problem. Protestors in this period called ward meetings and passed resolutions condemning either specific establishments or the trades in general as menaces to the public health. Describing them as “extremely injurious to the best health of consumers, and detrimental the best interest of the community at large.”

By attacking the “noxious trades,” public health reformers were attacking the smells of these industries. Cincinnati public health reformers believed that poor smelling areas were those that were most likely weaken immune systems, allowing diseases to attack humans. Although public health reformers were correct in asserting that poor smelling areas were the most likely to harbor disease, it was not because of the smell. As many historians have noted, these were the least clean parts of the cities, and usually harbored the overcrowded and dirty tenement buildings of immigrant workers. In addition, public health reformers believed that as the smells from these areas permeated the rest of the city, fumes would weaken disease resistance among the rest of the population. As such, the beliefs of public health reformers reflected contemporary beliefs about the nature and cause of disease. Reformers wanted to eliminate the foul smells of the community to prevent any chance of disease spreading.

However, beliefs about the nature of disease began to change in Cincinnati by the 1880s. Because of Louis Pasteur’s demonstration of his famous germ theory in France during the 1860s and 1870s, ideas about the nature and transmission of disease changed rapidly. His experiments would have critical repercussions on the way that public health officials undertook campaigns to clean cities. Medical professionals across Europe were debating the validity of his discovery and discussed in classroom settings. The implementation of scientific principles in European medical schools holds relevance to the changing nature of American public health movements.
because public health officers were usually medical doctors of note. Since the state of American medicine lagged behind that of Europe, aspiring physicians often obtained part of their training abroad. Such was the case with Cincinnati physician and public health official William Clendenin.

Clendenin was the first health officer of the city of Cincinnati. Due to the advanced nature of European medical knowledge, from 1859-1860, he studied in Europe as part of his medical training. Upon his return, he was appointed the city health official and, as noted by Charles Greve, “[h]e organized the department and procured the passage of the sanitary laws that are the basis of the present system.”

As a result of Clendenin’s training in Europe, he brought back with him scientific principles that would address disease on the most advanced level available.

Clendenin just missed the controversial whirlwind associated with Pasteur’s germ theory experiments which began in 1860. However, while he was not present for the specific debates that surrounded germ theory, it is likely that he kept in touch with his European colleagues and was well versed on both sides of the debate during the 1860s and 1870s. However, it seems Clendenin held onto the idea that disease sprang from a lack of ventilation and “filth” for some time. Clendenin’s belief that disease was caused by “filth” and not germs is evidenced by his attacks on unsanitary conditions in Cincinnati. In 1868 he noted less than fifty violations of filthy cellars. In contrast, Clendenin noted one hundred twenty cases where standing or leaking water caused a nuisance. During the early stages of the debate over germ theory, Clendenin held onto the belief that the dampness of an area was more likely to cause disease than germs; a view that was acceptable to many contemporary European public health reformers.
However, it seems that the Board of Health changed its views on the causation of disease during the 1880s. A more defined approach to cleanliness, like that provided by germ theory, gave support to the immense increase in the number of “filthy” cellar violations from less than fifty in 1868 to over one thousand in the 1885 annual report. Although germ theory did not assist in the diagnosis of specific diseases, it did provide a background for health officials to create a more distinct idea of what a “filthy” cellar was, and how to determine which cellars were dirty, thus laying better plans for public health movements.

In Cincinnati, public health movements were clearly based in European scientific discoveries as evidenced by the mirroring timeframes and multiple European connections. As noted by Lise Wilkinson, an exceptional scholar of European comparative medicine, “[t]hroughout the nineteenth century, developing medical science, especially in microbiology and comparative pathology, had been generally regarded as a European field of endeavour [however] Towards the end of the century, a number of those American students had returned to influential positions within the educational system of the United States, and its medical schools.”

Medical professionals were not the only ones traveling across the Atlantic. Veterinarians such as James Law came from Europe and played involved roles in the development of the veterinary field and ongoing public health movements. Law, an immigrant from Scotland, was the founding dean of the Cornell Veterinary College. He was trained in London and briefly taught in Edinburgh before accepting the position in the United States. He would be the leader of American veterinary medicine for decades. As described by Ellis Leonard, “The chronicle of veterinary medicine at Cornell [the center of American veterinary medicine] revolves around one central figure…Dr. James Law was a gentleman and a man held
in high regard for his professional capabilities throughout the United States. He set lofty
standards of excellence for veterinary medical education, higher, in fact, than required at any
other institution on the North American continent. Law brought exceptional knowledge of the
veterinary field from Europe. In addition, his continued correspondence to his European
counterparts to obtain the most recent knowledge available shows that American veterinarians
were also in frequent contact with their European colleagues.

American medical professionals such as health officer William Clendenin and veterinary
professionals such as James Law, who were at least partially trained in Europe, brought back new
knowledge that was then applied to public health movements. As a result, attempts to eradicate
disease applied the theories that European scientists had been developing for years. After the
discovery of germ theory and subsequent scientific developments, public health movements
began to focus on specific approaches that would prevent illness.

As a result of the birth of germ theory, scientists in Europe began to understand the
causation of disease in new ways. By comprehending that germs were present in the air instead
of spontaneously arising, scientists better understood the secrets of disease causation. Public
health officials such as William Clendenin could speculate that germs attached themselves to
other objects, such as animals. As a result of these discoveries, animals became new targets for
public health officials because they were viewed as carriers of multiple diseases, not just rabies.
This ultimately led to the elimination of free ranging animals in the city limits, and provided a
point at which the formation of the “pet” in a cultural perspective began to take a stronger shape.
Finally, although attempts to clean up American cities were at times ineffectual or misguided, the
underlying attempts to clean up cities eventually resulted in the expansion of the number of veterinarians in Cincinnati.

One of the new approaches of public health reformers was to prevent close animal contact with humans. As early as the 1830s, European scientists realized that animals could transmit disease to humans. David Barnes, writing about nineteenth century public health movements in Paris, notes that, “[j]ust as disgusting and dangerous as the crowding together of human beings was [lower-class Parisians] indiscriminate commingling with animals.” Barnes’ notes that throughout the late nineteenth century, a focus on the separation of animal and human bodies grew. He states that, by 1879 “the newly created health board in Le Havre urged the mayor to enforce a cleanup of certain intersections in the city where particular kinds of refuse tended to accumulate…four years later, the Bordeaux physician Arthur Armaingaud warned in his “popular instructions” about typhoid fever that pets should be kept out of bedrooms “not only [because] they contribute to the vitiation of the air, but also [because] they can serve as vehicles for disease germs.” He continues, noting how physicians viewed animals as transmitters of disease, stating that “elaborately bacteriological justifications were occasionally offered to support calls for animal separation…The animals’ mobility and potential intimacy threatened the human body’s separateness and self-containment.”

European public health reformers worked tirelessly to eliminate contact between animals and humans because they realized that it allowed disease to spread. However, because of the trans-Atlantic connections between medical and veterinary professionals, these attempts were not limited to Europe. Similar movements arose in Cincinnati as city officials pushed to prohibit animals from having contact with humans and was a crucial part of public health movements.
In 1861, city officials passed an ordinance that banned “any person, owning or harboring any animals of the dog kind, to suffer or permit such animal to run at large in any of the streets, alleys, public landings, market spaces, or commons of the city, without first having obtained a license therefor from the mayor.”49 This law was aimed at prevent animals from running through the streets, endangering local livestock and becoming nuisances to the general public. It was also aimed at preventing the spread of rabies. As noted in the section of the law that discussed the disease, “whenever the city council shall apprehend that the disease of hydrophobia is in danger of becoming prevalent in [Cincinnati], they may, by resolution or otherwise, direct the mayor…to issue his proclamation, ordering and requiring all persons, owning or harboring any animal of the dog kind, to confine [them].” In addition the law stated that “upon the issuing of such proclamation by the mayor, it shall become the duty of all persons…to prevent [dogs] from biting or being bitten by other animals, or to cause the same to be securely and carefully muzzled.”50 These laws were enacted with little scientific knowledge of rabies. The cause of the disease itself had not been yet been isolated by scientists in Europe. As such, the only scientific basis for muzzling dogs was a loosely bound theory, based on observations by the public, that dogs transmitted the disease.

In Cincinnati, popular beliefs about rabies were extremely misguided near the end of the century. In one instance, a man believed he had contracted rabies so he “immersed his arm in a tub of spirits. He then drank a quart of whisky. He became pale and trembled after this, and then drank another quart.”51 The reaction by the bitten man may have been guided by the belief that sanitization through alcohol prevented disease, a scientific fact discovered by Joseph Lister earlier in the nineteenth century. However, it shows that scientific ideas were not thoroughly entrenched in popular culture.
In addition, general public sentiment and media sensationalism at the turn-of-the-century also propped up an irrational fear of rabies. In the early 1900s, William Proctor, of Proctor & Gamble, was assaulted by New York City media asking “[h]ave you the rabies?” Proctor, befuddled by the question, heard the rumor that he was in New York to visit the Pasteur Institute to obtain a cure for rabies. He then described the story as a “fake,” and said, “I will tell you how it all came about. I was bitten by one of my dogs. It was a little bite I had almost forgotten about it. A few nights after that I happened to be in a café, and one of my friends noticed that I ordered whisky.” The reaction by the media suggests that rabies was a dangerous disease and a major public health concern. However, it also shows the fear associated with rabies in popular consciousness. Proctor’s friend noticed that he “ordered whisky” after being bitten by a dog. He may have heard that Mr. Proctor had been nipped by a dog. However, instead of assuming that Mr. Proctor simply wanted to have a drink, he instead decided that the reason for the alcohol was to cure Proctor’s rabies infection. Proctor’s possible rabies infection gave birth to a media firestorm that centered on the disease. Even though a cure was available, the major concern for the businessman’s rabies infection seems to suggest that rabies was a cultural phenomenon beyond that of tuberculosis, cholera, or yellow fever which were far more frequent than rabies, yet attracted much less attention.

As a result of the general fear of rabies, public health reformers and city officials sought to prevent dogs from spreading the disease by supporting muzzle laws and the licensing of dogs to prevent strays, which were more likely to carry the disease, from roaming freely. By banning unlicensed dogs and forcing licensed dogs to be muzzled when in the street, public health officials believed they could lower the risk of the disease. However, these laws had larger repercussions for the animal community at large. The licensing and muzzling of dogs compelled
Cincinnati residents to examine their relationship with their animals. The owner of an unlicensed dog caught running in the streets was subject to “be fined in any sum not exceeding twenty dollars, together with costs of prosecution, or be imprisoned not more than twenty days, or both, at the discretion of the court.” As a result of this law, dog owners were legally responsible for their companions. Because owners were put into a situation where they had to pay money for something that was previously free, they had to examine the value of their animals in a utilitarian and emotional context. Thus, Cincinnatians had to determine whether they would register, muzzle and pay taxes on their dogs, or expel the animals from their homes, dooming them to the pound and eventual death. Thus, public health movements coercively promoted the creation of the “pet” as a cultural construct.

Pet owners were not the only ones affected by the new laws. As another result of changing nature of public health movements that focused on germs, by the 1890s veterinarians could argue that they were prepared to offer customers their services as a public health benefit. Since the general public believed that rabies was such a deadly disease, veterinarians were able to claim that they served the public health and that they were able to protect the residents of Cincinnati. James Law, the preeminent veterinarian from Cornell, was extremely concerned with the health of animals as a public health concern. Leonard notes that “[a]lways cognizant of the danger of spreading disease from animals to man, Dr. Law became very concerned, in the summer of 1901, over the spread of rabies through the canine population the threat it posed for the human population. A long letter the Ithaca Journal was published in July, calling for action by the City and County with regard to the spread of rabies. Whereupon the City Council passed an ordinance required that dogs be muzzled during the months of July and August.”
As the bacteriological revolution progressed, germ theory allowed veterinary professionals to argue that animals should be separated from humans because they transmitted many diseases. As a result, veterinarians asserted that animals should be kept healthy and clean, since animals had extensive contact with humans, thus boosting the market for veterinary services. The Ohio Veterinary College of Cincinnati suggests that veterinarians were attempting to fill this market as early as 1891, by presenting classes which included the dog and its health. As a way to satisfy the growing gap in the veterinary industry for pet health care professionals, the college sought to train students with the tools necessary to succeed in the new world of pet health care.

When the Ohio Veterinary College of Cincinnati opened in 1891, its mission focused on “affording complete education to students of Veterinary Medicine and Surgery.” By offering classes such as “Anatomy: Descriptive and Surgical,” “Principles and Practice of Medicine” and “Hygiene, Breeding, and General Management of Domestic Animals,” the Ohio Veterinary College focused a large portion of its attention on cow and horse anatomy. However, by including dogs and cats in its curriculum, as stated in the class summaries, the Ohio Veterinary College suggests that pets were valuable enough to warrant formalized study and treatment.

As noted in the course description for the “Principle and Practices of Medicine,” classes would focus on “the nature, causes, symptoms, and treatment of the various diseases of the horse, sheep, pig, and dog;” in addition, a class on the “Hygiene, Breeding and General Management of Domestic Animals” would focus on “the principles of breeding and the general management of horses, cattle, sheep, swine and dogs.” By clearly stating that pet animals like dogs would be included in the curriculum, the founders of the Ohio Veterinary College suggest that veterinarians will use this knowledge in the future, almost certainly when treating pets.
The Ohio Veterinary College also shows the importance of dog health to their curriculum in their hiring of European trained John Brizell M.R.C.V.S. By hiring veterinarians who were trained outside of America, the Ohio Veterinary College could claim that “[g]reat care has been exercised by the Directors in the selection of a Faculty.” More importantly, hiring international veterinarians brought European methods of veterinary care to Cincinnati. Brizell would teach the class on Hygiene, Breeding and General Management of Domestic Animals. The fact that he was the most highly credentialed veterinarian on staff and would teach the class that dealt with animal hygiene suggests the relative of importance of the topic.

The Ohio Veterinary College of Cincinnati also stipulated that students must purchase a textbook aimed specifically at dogs, entitled *Canine Practice*, suggesting that dogs were as well studied in the school curriculum as any animal. This book, in part written by Edward Mayhew, also enlightens the transnational nature of veterinary practice at the college. Furthermore, many of the texts at the school were published by eminent veterinarians from European backgrounds such as James Law and Andrew Liautard, both of whom were prominent veterinarians with extensive European connections, and illustrate the extent of the international nature of the veterinary profession in the late nineteenth century.

As a result of these new beliefs about disease transmission, veterinarians who could treat pets were in a unique and enviable position during the later years of the nineteenth century. In addition to fears about public health, the laws that forced dog owners to license and muzzle their companions forced residents to be responsible for their dogs by not allowing them to leave their property at nighttime. Owners were then left with the decision to keep a dog tied up outside, or to bring it inside. Due to the fear of rabies that circulated at the end of the nineteenth century, it is likely that a number of residents brought their animals inside.
As dogs entered homes, the contact they had with humans became subject to more rigorous methods of public health and respectability. As Grier states, “[i]f animals were allowed in the house for more than short visits, they had to be taught to control their excretion.”\textsuperscript{61} The attempt to limit the excretion of animals was probably not the only public health measure that indoor pets endured. The rise of shampoos and powders to clean animals supported the common beliefs that animals could transfer disease; to live inside, animals must be cleaned. As Nancy Tomes notes in her article, “from sewer gas to germs, late 19\textsuperscript{th} century Americans became alert to a host of new dangers lurking at home…For late 19\textsuperscript{th} century domestic sanitarians…the home became an important vector of disease among all classes of the citizenry.”\textsuperscript{62} The focus of sanitation in the household, while aiming to prevent disease, had other repercussions for animals. The time spent making sure a dog was clean, almost certainly, fostered an emotional bond between pets and their owners. As a result of the new location of dogs within the household and the increasing strength of animal-human emotional connection during the latter part of the nineteenth century, veterinarians were able to apply their knowledge of hygiene to public health concerns of the middle class which created a new market for pet health care. Veterinary offices spread out toward the suburbs of Cincinnati near the turn-of-the-century. Veterinarians were no longer strictly tied to the horse industry of the city. Instead, growing cultures of pet care in the city offered veterinarians an avenue to continue their profession without depending on a dying market of horse care.

Veterinarians had a greater hand in the creation of the pet health care market before World War I than has been previously recognized. The push by veterinarians to insist on professionalized care in dog health books surely convinced dog enthusiasts to obtain qualified
care, which led to small inroads in the expansion of the veterinary profession during the end of
the nineteenth century. However, veterinarians were aided in their quest to exercise control over
the field of animal care; supported by scientific discoveries in Europe, medical professionals and
public health reformers pushed to create demand for the care of pets as a way to prevent the
spread of disease. Either directly, by insisting on muzzle laws, or indirectly, by promoting the
idea that unclean pets were dangerous to individuals, these groups affected the growth of the
veterinary profession by suggesting that animals were carriers of disease. By arguing that pet
health was crucial for the health of city residents, city officials and veterinarians combined to
create a market for pet health care that did not exist prior to the bacteriological revolution of the
nineteenth century.

This study provides an explanation for an increasing focus of pet care in Cincinnati. However, it raises as many questions for scholars as it answers. It suggests that public health issues were crucial to the formation of a pet as a cultural construct. Historians must examine the relationship between public health and pet health in other communities to establish a larger framework for understanding the creation of a pet in cultural terms. The study presented here examines one metropolitan area in the Midwest. The formation of pet culture and the relationships between pet and public health represent one specific example of a historical trend. Historians will only be able to fully grasp the complex and evolving world of pet culture in the late nineteenth century by comparing the relationship between public health and pet health in multiple settings.

In addition, historians may use this study as a starting point for a focused analysis of the creation of a market for professionalized veterinary services. Veterinarians have played a key role in the relationship between companion animals and their owners throughout the duration of
their profession. Thus a study of the origins of their marketing tools is necessary to understand the origins of their contemporary practices and their navigation through the early years of pet formation.

Finally, historians may be able to utilize some of the themes stated here to attempt to understand the cultural role of pet disease in America. The nature of rabies, particularly its painful symptoms and one hundred percent fatality rate, caused law makers to attack it fiercely. However, the fear of rabies was likely overblown. Between 1868 and 1907, Cincinnati Board of Health records show that less than ten people died from the disease. While diseases like cholera, tuberculosis and others killed hundreds of people each year, rabies was attacked nearly as vigorously because officials felt it was one thing they could control. Even today, the only immunization required for new pets is for rabies. The image of the wild-eyed, foaming-at-the-mouth dog staggering down the street has been turned into a pop culture phenomenon. Movies like *Cujo*, *To Kill a Mockingbird*, and *Old Yeller* utilize the image of rabies as key points in their stories. Yet, contrary to popular representation, rabies infrequently took the life of a human, especially when compared to the large number of strays. Yet the image of “man’s best friend” attacking in a rabid frenzy strikes a deep chord with many people. By examining the role that disease plays in pet history historians may find useful insights into culture fears and popular memory in the United States. By understanding the intense fears associated with rabies yet quickly embracing dogs as pets, historians will be able to draw additional insights into the values and paradoxes that represented parts of Victorian culture during the nineteenth and twentieth centuries.

2 These are just a few of the changes enacted as part of the public health movement in Cincinnati. For further information, see Alan Marcus, *Plague of Stanger: Social Groups and the Origins of City Services in Cincinnati, 1819-1870*, (Columbus: Ohio State University Press, 1991).
For one superior account of the importance of these animals see, Joanna Swabe, Animals, Disease and Human Society: Human—Animal Relations and the Rise of Veterinary Medicine, New York: Routledge, 1999. See especially chapter five.


Historians have linked veterinary activity in the nineteenth century overwhelmingly to the Bureau of Animal Industry and their attempts to limit the transfer of diseased animals and infectious animal food products. For further information, see Susan D. Jones, Valuing Animals: Veterinarians and Their Patients in Modern America, Baltimore: Johns Hopkins University Press, 2003.

Edward Mayhew, M.R.C.V.S. The acronym stands for Member of the Royal College of Veterinary Science. This title is given to veterinarians who graduate from have matriculated from veterinary universities from England and possess a breadth of veterinary knowledge.


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