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# A culture of anatomy: The public writings of American Anatomists, 1800-1870

Mary Patricia Schwanz  
*James Madison University*

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A Culture of Anatomy:  
The Public Writings of American Anatomists, 1800-1870  
Mary Schwanz

A Thesis submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

in

Partial Fulfillment of the Requirements

for the degree of

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*This thesis is dedicated to Martin L. Fausold, Distinguished Service Professor of History, emeritus, SUNY Geneseo. I miss you, Granddad, and I wish I could have shared this with you.*

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**Abstract:**

This thesis examines the public writings of several American anatomists who wrote between the years 1800 and 1870. Anatomists and the public clashed over the proper place of anatomical knowledge and research in American society. Anatomists had to prove that their field of inquiry was both worthwhile and morally acceptable. In their attempts to do so, anatomists formed a distinct subculture separate from that of practicing physicians, as well as influenced the debate over anatomy's place within the medical field.

Examining the public writings of American anatomists during this period provides insight into the ways in which this debate was carried out. This thesis examines the writings of three American anatomists of the nineteenth century: William Horner, Charles Knowlton, and Oliver Wendell Holmes, Sr. Three themes had been identified in their combined works: religion, empiricism, and professionalization. Although these three men held different opinions on these topics, all used religion, experimental science, and professionalization in order to argue for the legitimacy of their discipline. Their religious and scientific arguments fed into their conclusion that anatomists and the field of anatomy needed to professionalize in order to be taken seriously. American anatomists made sure that their field was included in the professionalization of American medicine at large, particularly in the requirements for medical education and licensure.

Horner, Knowlton, and Holmes through their writings demonstrate differing opinions on such important matters as religion, and experimental evidence, and the way in which anatomy should be included in the professionalization of the medical field at

large, but all three through their writings influenced the professionalization of anatomy as a legitimate area of research.

## Introduction:

In an 1860 address delivered before the Massachusetts Medical Society, Oliver Wendell Holmes said:

There are, of course, in every calling, those who go about the work of the day before them, doing it according to the rules of their craft, and asking no questions of the past or of the future, or of the aim and end which their special labor is contributing. These often call themselves practical men. They pull the oars of society, and have no leisure to watch the currents running this way or that way; let theorists and philosophers attend to them. In the mean time, however, these currents are carrying the practical men, too, and all their work may be thrown away, and worse than thrown away, if they do not take knowledge of them and get out of the wrong ones and into the right ones as soon as they may.<sup>1</sup>

Holmes pictures the well informed medical man as rower who is striving to keep the proper course in a society which is pulling him in many different intellectual directions.

In this speech, Holmes is criticizing practicing physicians of the regular school who do are complacent in their approach to medicine. There were many intellectual currents which influenced the medical field in the early and mid nineteenth century. These included a diversification of medical disciplines, and debates over requirements for medical education and licensure. Holmes argued that medical professionals had a professional obligation to be aware of the intellectual trends with which they were interacting. Anatomists of the early and mid nineteenth century played a unique role in influencing the ways in which these intellectual trends shaped the field of medicine.

In the first half of the nineteenth century, a unique group of public figures were causing trouble in America, arguing against the traditional practice of medicine, traditional religion, and the spreading democratic idealism of Jacksonian America. These men were not politicians or theologians, they were anatomists, who based their

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<sup>1</sup> Oliver Wendell Holmes, Sr., "Currents and Counter-currents in Medical Science," *Medical Essays 1842-1882* (Boston: Houghton, Mifflin, and Co., 1895) 175-176.



controversial opinions on their professional knowledge. American anatomists of the early nineteenth century formed a distinct subculture, separate from that of their colleagues who maintained traditional practices and treated patients. The published works of William Horner, Charles Knowlton, and Oliver Wendell Holmes, the three anatomists who will figure prominently in this study, demonstrate the ways in which anatomists influenced the dialogue about the ways in which anatomists influenced the discussion about the proper place of anatomical knowledge in society, including issues surrounding how anatomical knowledge should be obtained, how that knowledge should be used, and who should have access to that knowledge. In their discussions of religion, empiricism, and professionalization, Horner, Knowlton, and Holmes helped to shape the medical field into the form which we are familiar with today.

In nineteenth century America, professional anatomists possessed privileged knowledge about the workings of the human body which was unavailable to the general public, and frequently ignored by physicians in other branches of the medical community. Possession of this knowledge colored their world view, and their attempts to spread new and controversial medical information to a public which was not ready to hear it shows us a cohesive group of public figures who were involved in the social issues of their day with the aim of bringing the truth, as they saw it, on matters both medical and philosophical, to the public.

#### *Historiography and Methodology:*

More work has been done on attitudes toward dissection in Great Britain in the

early nineteenth century than in the United States. This is likely because medical schools in Europe were more established during this period than schools in the United States, and the demand these schools created for cadavers led to an entire underground market for them.<sup>2</sup> The most significant book written on the practice of dissection in Great Britain is Ruth Richardson's *Death, Dissection, and the Destitute*. Richardson examines popular attitudes towards dissection in Great Britain in the early nineteenth century and concludes that, although at first it may seem that the practice of dissection only concerned those involved in the medical field, dissection did in fact concern the lower classes of British society in a very immediate way, as they faced burking, body-snatching, and having their remains claimed for dissection against their wishes. Richardson's examination of the ways in which the practice of anatomy in Great Britain affected the day to day lives of the working class raised for me the question of whether or not similar phenomena occurred during the period in the United States during the same period, and how Americans attempted to solve the questions surrounding the procurement of cadavers for anatomical research. This investigation into American attitudes towards anatomy and bodysnatching led me to the writings of Horner, Knowlton, and Holmes.

This thesis was also largely inspired by Sarah Wise's book, *The Italian Boy: A Tale of Murder and Bodysnatching in 1830s London*. In this work, Wise investigates the murders committed by John Bishop, Thomas William, and James May, who together were referred to as the London Burkers. Wise uses these murders to create a snapshot of all strata London society in the 1830s, by examining the reason that these murders were

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<sup>2</sup> Ruth Richardson, *Death Dissection and the Destitute*, (Chicago: University of Chicago Press, 2001) 55.

committed, and the public's reaction to them. In this study, I have attempted to create a similar snapshot of nineteenth century American society by examining the dialogue surrounding anatomy, and how members of different social classes influenced, and were influenced by this discussion. This is why the reactions of the general public to the ideas proposed by Horner, Knowlton, and Holmes are significant to the context of this thesis.

The historiography of anatomy in the United States is rather sparse. The most significant work on anatomy and dissection as practice in the nineteenth century United States is Michael Sappol's *A Traffic of Dead Bodies: Anatomy and Embodied Social Identity in Nineteenth Century America*. Sappol's main focus, however, is on what the processes of dissection and grave robbing said about the social and class identities of those who ended up on the anatomist's dissecting table. While this is helpful allowing us to understand some of the protests raised against the various American anatomy acts, I do not feel that when they selected a subject for dissection, American anatomists were specifically and consciously making a statement about their own class, or the class of the individual they were dissecting. This is demonstrated by the fact that, although most subjects belonged in life to the lower classes, anatomists did not hesitate to take a cadaver which had belonged to an upper class individual if opportunity presented itself. Several cases of upper class individuals arriving, after their death, in the dissecting theater appear later in this thesis. Therefore, Sappol's conclusions, while interesting, have little bearing on the conscious public discourse surrounding the practice of anatomy and dissection.

Suzanne Shultz is perhaps the only historian to specifically examine the

phenomenon of body snatching in the United States. In her book *Body Snatching: The Robbing of Graves for the Education of Physicians in Nineteenth Century America*, she explores the way in which body snatching was practiced in the United State during the early nineteenth century, and the reasons for the use of this practice. Shultz' book, while not providing any terribly complex arguments about reasons for, or attitudes towards bodysnatching in nineteenth century America, is a good source of information on individual cases of bodysnatching, and what statistical data there is about the practice in the United States.

In studying the ways that Horner, Knowlton, and Holmes influenced the dialogue on anatomy, I have examined the ways in which they spoke about religion, empiricism, and professionalism. Because their discussions of religion and empiricism feed into their reasons for advocating for the professionalization of anatomy and of the medical field, I have included the chapters on religion and empiricism before my discussion of anatomists and professionalization in order to provide the reader with the background he needs in order to understand more fully the arguments that Horner, Knowlton, and Holmes presented about the need for anatomists and physicians to professionalize.

### *Three American Anatomists:*

This thesis examines the development of a profession, that of the anatomist. In order to understand how anatomists helped to shape the dialogue on anatomy and dissection in nineteenth century America, one needs to understand who belonged to this profession and who did not. Anatomists can most accurately be defined by the type of

work that they performed. For the sake of this study, a 'professional anatomist' will be defined as a physician who made his career as a dissector, demonstrator, or professor of anatomy, or a who based his medical writings on his privileged anatomical knowledge. The majority of this work will be based on the career and writings of three nineteenth century American anatomists: William E. Horner, Charles Knowlton, and Oliver Wendell Holmes Sr.

I have selected these three anatomists because they represent members of varying social classes and spoke to different audiences, and yet their published works reflect similar concerns about the place of anatomy in society and in the emerging professional medical class. Horner's writings were intended for an academic audience. He is best remembered for writing the first American textbook on pathology. His works were never particularly well known outside of these circles. Knowlton wrote for a slightly wider, but still restricted audience. Although Knowlton appears to have intended his writings to be consumed by the general public, especially in the case of his *Fruits of Philosophy*, they were most popular among the adherents of Abner Kneeland's Free Thought movement. While this was a significant movement, it's members could hardly be described as mainstream. Oliver Wendell Holmes is the most widely read of these three anatomists. Holmes' most popular works, the *Breakfast Table* series, was originally published as a newspaper serial. These columns were so popular they were republished in book format. Even Holmes' medical lectures seem more approachable for the layperson than the writings of Horner and Knowlton. Although these three anatomists were of different social classes and wrote for different audiences, they all influenced the dialogue on

anatomy through their discussions of religion, empiricism, and professionalism.

William Horner's writings were selected for this study because Horner is most clearly an anatomist, without being a writer or public figure in the manner of Knowlton and Holmes. Horner served as professor of anatomy at the University of Pennsylvania from 1820 to 1843. Horner first studied medicine in 1809 as apprentice to John Spence, in Dumfries, Virginia. In 1812, Horner began his studies at the University of Pennsylvania, although he interrupted these pursuits to take a position as a surgeon's mate in the United States Army.<sup>3</sup> Of Horner's early studies at the University of Pennsylvania, Dr. Jackson, who wrote Horner's memorial address, delivered at the University of Pennsylvania in 1853, remarks "In his studies, anatomy was the branch that more particularly interested him, and for which he manifested the most decided partiality."<sup>4</sup> Jackson's comments indicate that even during his own lifetime, Horner had gained fame for his anatomical work, and also that Horner's contemporaries were conscious of a distinction between anatomists and other physicians. Dr. Horner graduated from the University of Pennsylvania during a furlough from his duties with the army. Horner retired from the army in 1815, finding little opportunity for advancement after the

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<sup>3</sup> No extensive biography has been written on Dr. Horner. The best source for information about his life is Dr. Jackson's memorial *Discourse Commemorative of the Late William E. Horner*. A study of Horner's life was published in the *Journal of the American Medical Association* in 1965. Guillermo Quinonez has also written a study on Horner's textbook on pathological anatomy.

Samuel Jackson, *Discourse commemorative of the Late William E. Horner, M.D., Professor of Anatomy. Delivered before the Faculty and Students of the University of Pennsylvania, October 10, 1853*. Philadelphia: T.K. Collins, Printers, 1853.

"William E. Horner (1793-1853): Pathological Anatomist," *Journal of the American Medical Association* 193 (1965) 832-833.

Guillermo Quinonez, "The Beginnings of Pathology in America: A Contemporary Analysis of William E. Horner's Treatise on Pathological Anatomy," *Archives of Pathology and Laboratory Medicine* 153 (2011) 1591-1596.

<sup>4</sup> Jackson, *Discourse Commemorative of the Late William E Horner, MD*. 11

end of the war of 1812. Jackson commented on Horner's decision to leave the army, saying "It gave no opportunity for professional experience, there was nothing to animate his zeal, to satisfy the earnestness of his character, to gratify his instinctive desires of knowledge in anatomy and surgery, or to fulfill his aspiration for distinction."<sup>5</sup> This zeal demonstrates that, although Horner was a more retiring figure than the other anatomists in this study, he was nonetheless possessed of the sort of ambition that seems to have been a hallmark of the professional anatomist. Although Horner returned briefly home to Virginia, he found nothing there to fulfill his professional ambitions either, and soon returned to Philadelphia, where he attended another series of lectures at the University of Pennsylvania while attempting to start a private medical practice. Horner's work brought him to the attention of Caspar Wistar, the university's professor at the time, who offered Horner the post of demonstrator of anatomy in 1816, which Horner accepted. Horner would eventually succeed Wistar as professor of anatomy in 1819. Jackson notes the particular personality traits of Horner's which brought him to Wistar's attention, naming among them Horner's "enthusiasm for anatomy," "earnest application to dissection," and "the neatness and excellence of his preparations," as well as "his quiet demeanor and steadiness of character."<sup>6</sup> This skill in creating anatomical preparations would serve Horner well, and many of his specimens would be included in the collection of the University of Pennsylvania's Anatomical Museum. Horner continued in the post of professor of anatomy until his death in 1853. William Horner is best known for his

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<sup>5</sup> Jackson, *Discourse Commemorative of the Late William E Horner, MD*, 23.

<sup>6</sup> Jackson, *Discourse Commemorative of the Late William E Horner, MD*, 24.

*Treatise on Pathological Anatomy.*<sup>7</sup> Pathological anatomy would be observing abnormalities in a patient's anatomy, and using them to diagnose disease. Horner believed that pathological anatomy was the future of the anatomical field, as well as being the most difficult branch of anatomy, as students wishing to engage in the study of pathological anatomy would first have to master both general and surgical anatomy.<sup>8</sup>

The sources for Horner's life include Dr. Samuel Jackson's *Discourse Commemorative of the Late William E. Horner, MD., Professor of Anatomy Delivered Before the Faculty and Students of the University of Pennsylvania. October 10, 1853*, as well as introductory lectures given by Dr. Horner in 1831 and 1843, as well as a commencement address given by him in 1851. Horner's life and career demonstrate many of the key features which define a nineteenth century anatomist, including a career devoted to teaching and research, as well as a strong sense of ambition.

The second anatomist figuring in this study is Charles Knowlton, selected for his contentious views and contributions to the Free Thought movement in the nineteenth century. Charles Knowlton was born to a farming family in Massachusetts in 1800. Knowlton first studied medicine as an apprentice to Dr. Charles Wilder, a doctor in Knowlton's home town of Templeton, Massachusetts. Knowlton found this to be an unsatisfactory course of study (as will be demonstrated later), and moved on to study at the New Hampshire Medical Institution, which would become the Dartmouth Medical School. Knowlton completed his medical degree in 1824, (Although not without his share

<sup>7</sup> Horner, William E. *A Treatise on Pathological Anatomy*. Philadelphia: Carey, Lea, and Carey, 1829.

<sup>8</sup> Horner, William. *Introductory Lecture Before the Medical Class of the University of Pennsylvania, Delivered Nov. 9, 1843*. (Philadelphia: Merrihew and Thompson, Printers, 1843.) 7



of interesting incidents,) and went into private practice, as well as publishing *Elements of Modern Materialism*, and *Fruits of Philosophy*, his most well known work. During his lifetime, Knowlton found himself in many conflicts over his unorthodox views. As demonstrated by the title of his first book, Knowlton was a proponent of materialism, which posits that only physical things exist, and that everything, including such intangibles as light and human consciousness, are the product of interactions of the physical world. The publication of *Fruits of Philosophy*, one of the first manuals on contraception published in the United States, led to a jail sentence for Knowlton, after it was deemed that the work broke Massachusetts' obscenity law. Knowlton's views also led him into conflict with his neighbors in the town of Ashfield, where he eventually settled, although the town eventually learned to tolerate him. Charles Knowlton died in Winchendon, Massachusetts in 1850, succumbing to heart problems from which it appears he suffered from many years.<sup>9</sup> Dr. Knowlton was a more prolific writer than Dr. Horner and the sources on his life and career include his autobiography, posthumously published in two parts in the *Boston Medical and Surgical Journal* as “The Late Charles Knowlton, MD,” and “The Autobiography of the Late Dr. Knowlton.”<sup>10</sup> Sources for Knowlton's unique philosophy include his writing, *Elements of Modern Materialism*, and *Fruits of Philosophy*, as well as his *Two Remarkable Lectures delivered in Boston*.<sup>11</sup>

<sup>9</sup> James Reed, “Knowlton, Charles” <http://www.anb.org/articles/12/12-00501.html> *American National Biography Online*, February 2000.

<sup>10</sup> Knowlton, Charles, and Stephen Tabor. “The Late Charles Knowlton, MD.” *Boston Medical and Surgical Journal* 45 no. 6, 1851.

Knowlton, Charles and Stephen Tabor, “The Autobiography of the Late Dr. Knowlton,” *Boston Medical and Surgical Journal* (1851) 45 no. 8

<sup>11</sup> Knowlton, Charles. *Elements of Modern Materialism: Inculcating the Idea of a Future State, in Which All will be More Happy, Under Whatever Circumstances They May be Placed, Than if They Experienced No Misery in This Life*. A. Oakey: Adams, Mass, 1829.

Oliver Wendell Holmes, Sr. is undoubtedly the most well known figure included in this study, (although one should be careful not to confuse him with his son, Oliver Wendell Holmes, Jr., who served as a supreme court justice.)<sup>12</sup> Holmes was born in 1809, in Cambridge, Massachusetts. His father was a minister, and Holmes has been referred to as a “Boston Brahmin.”<sup>13</sup> Holmes entered the Boston Medical College in 1831, after abandoning studies in law, and also studied at Harvard Medical School, and (more significantly) in Paris, under Doctor Pierre Charles Alexandre Louis, who instilled in Holmes the importance of the *vis medicatrix naturae* (the healing power of nature, which was in contrast to the principles of 'heroic' medicine practiced in the United States at the time, which was based on the humoral principles.)<sup>14</sup> Holmes' devotion to the *vis medicatrix naturae* is the most significant aspect of his career with respect to this study. Holmes became Parkman Professor of Anatomy and Physiology at Harvard in 1847, as

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Knowlton, Charles, *Fruits of Philosophy; A Treatise on the Population Question*, San Francisco: The Reader's Library, 1891.

Knowlton, Charles. *Two Remarkable Lectures Delivered in Boston By Dr. C. Knowlton On the Day of His Leaving the Jail at East Cambridge March 31 1833, Where He Had Been Imprisoned For Publishing a Book*. Boston: A. Kneeland, 1833.

<sup>12</sup> Biographical data for Holmes is more easily obtainable for Holmes than for Horner and Knowlton. The journal *Clinical Anatomy* published a sketch of Holmes' medical career in 2012. Many other studies have focused on analysis of Holmes literary works, including Michael Wienstien's article, “The Power of Silence and Limits of Discourse at Oliver Wendell Holmes' Breakfast Table.” The work which best integrates Holmes literary work with his medical training and career is William Dowling's *Oliver Wendell Holmes in Paris: Medicine, Theology, and the Autocrat of the Breakfast Table*.

Shane Tubbs et. al., “Oliver Wendell Holmes, Sr. (1809-1894): Physician, Jurist, Poet, Inventor, Pioneer, and Anatomist,” *Clinical Anatomy* 25 no. 8 (2012) 992-997.

Michael Weinstien, “The Power of Silence and Limits of Discourse at Oliver Wendell Holmes' Breakfast Table,” *Review of Politics* 67 no. 1 (2005) 113-133.

William Dowling, *Oliver Wendell Holmes in Paris: Medicine, Theology, and the Autocrat of the Breakfast Table*. Hanover: University Press of New England, 2006.

<sup>13</sup> The Editors. “Holmes, Oliver Wendell.” *American National Biography*, <http://www.anb.org/articles/12/12-01980.html>; (Feb. 2000)

<sup>14</sup> Dowling, William C. *Oliver Wendell Holmes in Paris*. (Hanover: University of Press of New England, 2006) 25.

well as dean of the medical school. Holmes finished his tenure as dean in 1853, but continued as professor of anatomy. Holmes' greatest contribution to medicine is considered to be his essay on the origins puerperal fever, which was published in the *New England Journal of Medicine and Surgery* in 1843<sup>15</sup>. He also wrote essays criticizing the spread of homeopathic medicine in the United States, as well as being an opponent of heroic medicine. The only good thing Holmes had to say about homeopathic medicine was that at least it was merely ineffective, as opposed to actually harmful, like heroic practices such as bleeding and the application of emetics.

Holmes was also a literary figure. He was a novelist, poet, and essayist. His best known works are his “Breakfast Table” series, including *The Autocrat of the Breakfast Table*, *The Poet of the Breakfast Table*, and *the Poet of the Breakfast Table*. In his skills as a conversationalist, Holmes has been compared to the likes of Oscar Wilde.<sup>16</sup> Holmes died in Boston in 1891.

Although these three anatomists took vastly differing trajectories, Horner being content to spend his entire career in academia, Knowlton serving as a vociferous troublemaker advocating for materialism and free inquiry, and Holmes being throughout his career a respected Boston patrician known for his conversational skills, their careers demonstrate several common themes. All three had to deal with the intersection of their religious beliefs with their anatomical knowledge, were concerned with spreading the what they saw to be the truth, in both medical and philosophical arenas, and made a

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<sup>15</sup> R. Shane Tubbs et. al. “Oliver Wendell Holmes, Sr. (1809-1894): Physician, Jurist, Poet, Inventor, Pioneer, and anatomist.” *Clinical Anatomy* 25 no. 8 (2012) 996.

<sup>16</sup> Dowling, *Oliver Wendell Holmes in Paris*, 113.

concerted effort to present a carefully crafted public and professional persona. By examining these common themes in the careers of nineteenth century American anatomists, this study will show how and why American anatomists formed a distinct cultural subgroup within the medical community, and what shape that culture assumed.

## **Chapter One: The State of Anatomical Study in Nineteenth Century America:**

Before going into a discussion of the ways in which specific anatomists influenced the discussion on anatomy, it is helpful to examine the shape of that discussion, and the world in which early nineteenth century American anatomists operated. In this chapter, I will briefly discuss the system of medical education in place in America during the period, as well as the state of legislation dealing with anatomy and dissection during the first half of the nineteenth century. These two issues greatly shaped the world in which American anatomists of the early nineteenth century lived and worked. Examining these two aspects of early nineteenth century American society illuminates many of the places where anatomists came into conflict with public opinion, and with other members of the medical profession.

### *The Shape of Medical Education in Early Nineteenth Century Europe and the United States:*

This study will be dealing specifically with the ways in which anatomy was taught and studied in the United States in the first half of the nineteenth century. A working and proficient knowledge of human anatomy is essential for the practice of medicine. However, the proprietary schools common in the United States lacked the resources to allow for the study of anatomy through dissection. As such, anatomy was usually only taught through lectures. Anatomy was taught through dissection in the larger universities, although that in itself was problematic, as it led to problems with the sourcing of anatomical material for dissection. The search for cadavers for anatomical study brought discussions of anatomy into the wider public sphere, as many state legislatures debated

how to solve the problem of providing the anatomists with a legal source of research material while satisfying the concerns of the public about the propriety of the practice of dissection.

Medical education in the United States began along the the lines of the more traditional apprenticeship structure. As more formalized medical education developed in the United States, it largely took the form of proprietary schools. Proprietary schools were owned and run by the professors, physicians who were in private practice and did not devote all, or even most of their time to their medicals schools. They taught because they were mostly interested in the profits that their schools provided.<sup>17</sup> Three university affiliated medical schools existed in the United States in 1800: the University of Pennsylvania Medical School, Harvard Medical School, and the King's College Medical school. However, in the first half of the nineteenth century, the number of proprietary medical schools increased rapidly. In fact, one contemporary nineteenth century critique of American medical education is that the number of schools increased so rapidly, that they could not all have offered their students a credible education.

As it was, education, at even the nation's university affiliated medical schools was fairly brief.<sup>18</sup> At a 1842 lecture given at Geneva College in New York in 1842, one Dr. Webster bemoaned the pitiful state of American medical education, lamenting that:

“An apprenticeship of six years is considered a short period to form a good and skillful mechanic - whilst by the modern high pressure (thanks to the wisdom of our legislature), three years, eight months of which is spent in collegiate exercises, are deemed amply sufficient to make a doctor. Yes, that’s the phrase, to make a

<sup>17</sup> Kenneth Ludmerer. *Learning to Heal: The Development of American Medical Education*, (Baltimore: Johns Hopkins University Press, 1985) 3, 11.

<sup>18</sup> Ludmerer, *Learning to Heal*, 11

doctor! Well, at the end of this probation, many of our young men leave the precincts of the college vainly imagining that their education is complete, and that they are prepared at once successfully to encounter disease in all its varied forms. ... Gentlemen, there is something radically wrong here.”<sup>19</sup>

Subjects covered in these lamentably short courses of lectures included physiology, pathology, materia medica, therapeutics, pharmacy, chemistry, medical jurisprudence, principles and practice of surgery, obstetrics and diseases of women and children.<sup>20</sup> (Materia medica is very similar to therapeutics, and is the study of materials, such as botanicals, that can be used to produce medicines). Various physicians, including anatomists, realizing the short comings of American medical education as it existed in the early nineteenth century, advocated for reform, to align American medical education with the developments occurring in Europe, particularly in France.

By the mid-1840s, many members of the medical profession had recognized the need to reform the United State's system of medical education. The American Medical Association was founded in 1847. Its members were interested in standardizing the requirements for the granting of a medical degree in the United States, although the degree to which the American Medical Association was influential in creating reform in medical education is unclear. For instance, historian Kenneth Ludmerer claims that the American Medical Association, while interested in what he refers to as the “trappings” of a medical degree, did not accept the developments in medical education in France and Germany, and did not “enter the modern era,” until after the American Civil War.<sup>21</sup>

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<sup>19</sup> “Dr. Webster’s Introductory lecture,” *Boston Medical and Surgical Journal*, 27 no. 18 (1842): 304.

<sup>20</sup> Ludmerer, *Learning to Heal*, 11.

<sup>21</sup> Ludmerer, *Learning to Heal*, 62.

However, we see the beginnings of the medical professions' attempts to “enter the modern era” before the civil war. In his 1851 commencement address, William Horner addressed the University of Pennsylvania's deans, and encouraged them to reform the University’s medical program to adhere to the guidelines established by the American Medical Association.<sup>22</sup> This is one example of the ways in which American anatomists influenced the dialogue about the place of anatomy in the professionalization of the medical field. This is significant because the publications of the American Medical Association influenced nineteenth century anatomists' attempts at professionalization, and are also useful in attempting to reconstruct the average physician's religious views. The need for reform in medical education was a factor which contributed to nineteenth century American anatomists' formation of a distinctive subculture, and forms a theme in the public writings of Horner, Knowlton, and Holmes.

*Anatomical Legislation in Early Nineteenth Century America:*

One of the issues for those attempting to teach and study anatomy was how to obtain cadavers for dissection, as the legal means for accomplishing this were very limited in the nineteenth century. Writing in 1881 for the *Annals of Anatomy and Surgery*, Edward Hartwell says, “We should find strange survivals in the United States of mediaeval burial customs and beliefs regarding the spirits of the disembodied which antedate Christianity. We can notice here, however, only two factors in the popular

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<sup>22</sup> William E. Horner, *Medical Commencement of the University of Pennsylvania Held on April 5, 1851, with a Valedictory by W. E. Horner, M.D., Professor of Anatomy*. Philadelphia: L.R. Bailey, Printers, 1851



prejudice against dissection, - namely, the belief in sorcery and the legal sanction of dissection as a mark of infamy.”<sup>23</sup> Hartwell's comments touch on the two most commonly cited reasons that the majority of nineteenth century Americans were opposed to allowing themselves or their loved ones to be dissected: Dissection deprived the dead of a proper and dignified burial, and dissection was strongly associated with criminality.<sup>24</sup> The legal status of anatomy and dissection in early nineteenth century America is important because it both illuminates public opinion of anatomy and provides the bounds for the professional world in which early nineteenth century anatomists operated. Discussions on anatomy and dissection entered the legal record in several ways. Many state legislatures produced statutes which provided cadavers to the anatomists, but the source of these subjects changed over time. Early American anatomy laws allowed anatomists to dissect only the bodies of executed criminals. Later legislation allowed them to also claim the bodies of those who died without friends or family in workhouses and hospitals.

The idea of a sentence of dissection being added to a capital sentence originated in Great Britain. Most famously, dissection was added to the sentence of death by hanging given to William Burke, one half of the infamous pair of murderers, Burke and

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<sup>23</sup> Edward Hartwell, “The Present Legal Status of the Study of Human Anatomy in the United States.” *Annals of Anatomy and Surgery* 4 (1881): 10.

<sup>24</sup> Shultz's writing reinforces Hartwell's nineteenth century statements. Shultz claims that she finds no theological backing in either Catholicism or Protestantism which prohibits dissection. Although she finds that anatomical research has flourished in largely Catholic countries, she does not believe this is related to religion. Shultz also notes that Orthodox Judaism does prohibit dissection and autopsy, except under very limited circumstances. (For example, if the information learned in an autopsy could save someone's life.)

Suzanne Shultz, *Body-snatching: The Robbing of Graves for the Education of Physicians in Early Nineteenth Century America*, (London, McFarland and Co, 1992) 7.

Hare, who killed seventeen people in Edinburgh, Scotland in 1827 and 1828, for the purpose of selling their corpses to the anatomists. Their crimes, and the influence they had on the public perception of anatomy will be discussed in further detail later in this paper. Dissection was also added to the sentence of Thomas Head and John Bishop, who, along with James May, were part of a trio of murderers who committed similar crimes to those of Burke and Hare in London in the early 1830s. Although the Burke and Hare murders were more well known than those committed by Head, Bishop, and May, it was the London murders which influenced the British anatomy act of 1832.<sup>25</sup> The British Anatomy Act of 1832 served as a model for the anatomy acts later proposed and passed in the United States.

The corpses of convicted criminals who had had dissection added to their capital sentence were the first legal source of cadavers for anatomists in the United States. The first piece of legislation in the United States that allowed judges to add a sentence of dissection onto a death sentence was passed in 1789 in New York, The lawmakers in Albany were reacting to a riot that had occurred in New York City the year previous.<sup>26</sup> The authors of New York's 1789 anatomy act were undoubtedly familiar with the British act of 1752, which provided for the dissection of executed criminals. It stated that the purpose of the sentence, in the British case, dissection was “to add some further terror and peculiar mark of infamy...to the punishment of death.”<sup>27</sup> Also of note, when

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<sup>25</sup> Sarah Wise, *The Italian Boy: A Tale of Murder and Body Snatching in 1830s London*. (New York: Henry Holt and Company, 2004) xiv.

<sup>26</sup> Steven Wilf, “Anatomy and Punishment in Late Eighteenth Century New York,” *Journal of Social History* 22 no. 3 (1989): 507.

<sup>27</sup> Wilf, “Anatomy and Punishment in Late Eighteenth-Century New York,” 516.

examining the New York Anatomy Act of 1789, is that it also enumerates punishments for those who are convicted of body-snatching, in an attempt to placate the public. However, these provisions were vague, stating only that punishments for grave robbery could include a fine, the pillory, or imprisonment, at the judge's discretion.<sup>28</sup> This may have been so that a judge could adjust the sentence based on the status of the victim the grave robber had disinterred. Issues of class were a significant part of the conversation that surrounded legislation that touched on anatomy, with many members of the public feeling that members of the regular medical profession were attempting to set themselves up as a new elite.<sup>29</sup> Anatomists contributed to this impression, as their subjects came almost exclusively from the lower classes. However, it appears that the populace of New York was still not satisfied with the New York legislature's solution to the shortage of anatomical material by legalizing the dissection of executed criminals, as the 1789 act also provided penalties for anyone who attempted to rescue the cadaver of an executed criminal from the anatomists. These penalties included a fine of a hundred dollars, or up to a year's imprisonment.

The connection of dissection with criminality is the best documented reason for public discomfort with anatomy and dissection. Other reasons are religious belief and superstitions. The Massachusetts Medical Society, in an "Address to the Community on the Necessity of Legalizing the Study of Anatomy," discusses the 'instinctive horror' that the common person has of dissection.<sup>30</sup>

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<sup>28</sup> Wilf, "Anatomy and Punishment in Late Eighteenth-Century New York," 514.

<sup>29</sup> Anita Fellman and Michael Fellman, *Making Sense of Self: Medical Advice Literature in Late Nineteenth Century America*. (Philadelphia: University of Pennsylvania Press, 1981,) 7.

<sup>30</sup> *Address to the Community on the Necessity of Legalizing the Study of Anatomy. By Order of*

American burial practices were also undergoing significant changes during the nineteenth century. James Farrell describes a trend that he calls “the dying of death” occurring between 1830 and 1920.<sup>31</sup> The dying of death was characterized by the turning away from the medieval conception of death as inherently fearful. This change manifested theologically as less emphasis was placed on the fear of hell. The 'dying of death' manifested in burial practices with the emergence of practices such as embalming, which attempted to hide the physical signs of decay, and the transition from placing burials in church graveyards to picturesque burial parks outside of the city.<sup>32</sup> It appears that the idea of dissection, and the 'horrors of the dissecting chamber' clashed with the developing ideas of death as a peaceful slumber.

The practice of body snatching most commonly came to public view when prominent members of society were removed from their graves. One of the most famous of these incidents was the resurrection of Senator John Scott Harrison in Ohio in 1878.<sup>33</sup> The resurrection was discovered by Harrison's son and nephew. They had heard a rumor that a family friend had been removed from his grave, so they traveled to the Medical College of Ohio to investigate. The pair did not find their friend, but instead arrived in time to see the Senator's body being lifted into the anatomical theater instead.<sup>34</sup> The

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*the Massachusetts Medical Society.* (Boston: Perkins and Marvin, 1829) 70.

<sup>31</sup> James Farrell, *Inventing the American Way of Death, 1830-1920*, (Philadelphia: Temple University Press, 1980) 4.

<sup>32</sup> Farrell, *Inventing the American Way of Death*, 7.

<sup>33</sup> Shultz, *Body Snatching: The Robbing of Graves for the Education of Physicians*, 85.

<sup>34</sup> Aaron Tward, and Hugh Patterson, “From Grave Robbing to Gifting: Cadaver Supply in the United States.” *Journal of the American Medical Association* 287 no. 9 (2002): 1183.

revelation of these incidents frequently led to what have been termed “anatomy riots” in which the public formed a mob either to attack the medical school or the students and anatomists themselves.

The most famous anatomy riot occurred in New York in 1788. Colonel William Heth provided a good account of the riot in a letter to Edmund Randolph, then Governor of Virginia.<sup>35</sup> According to Heth's account, the city was already on edge, as the bodies of “a young gentlemen of the West Indias” and “a very handsome and much esteemed young lady, of good connections also,” had been removed from their graves. Some townspeople, walking past a window of the medical school, saw something hanging in the window. Further examination proved it to be human remains. A mob quickly assembled, destroyed the anatomical theater, and threatened the students. Heth recounted that one student was forced to hide up a chimney, and two more were placed in the jail in order to protect them from the mob. “An innocent person,” stated Heth, “got beat and abused *for being only dressed in black*.”<sup>36</sup> After two days, the mob was only dispersed when the militia arrived. Of interesting historical note here is that this group of militia men included John Jay, Alexander Hamilton, and Baron Von Steuben.<sup>37</sup> Three of the rioters died in the commotion, and Jay and von Steuben were injured. The amount of force required to disperse the mob demonstrates how seriously the people took the crime of body-snatching and how frightened they were of the idea of respectable members of society

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<sup>35</sup> William Heth, “Letter to Edmund Randolph, 1788” in Whitfield Bell, Jr., “Doctor's Riot, New York, 1788.” *Bulletin of the New York Academy of Medicine* 47 no. 12, (1971): 1501-1503.

<sup>36</sup> Heth, “Letter to Edmund Randolph, 1788,” 1502.

<sup>37</sup> Wilf, “Anatomy and Punishment in Late-Eighteenth-Century New York” 513.

being dissected. It was this riot which led to the above mentioned New York act of 1789, which permitted judges to add dissection capital sentences.

It quickly became clear to nineteenth century legislators that the shortage of legally available anatomical material was a problem which needed to be corrected. Despite the public opposition to dissection, anatomists and medical students demonstrated their willingness to take matters into their own hands in their search for cadavers for education and research. Legislators hoped to be able to craft a solution that would satisfy both the interests of the public and the medical community. However, this was more easily said than done. As very few people wished for their mortal remains to end up on the dissecting table, legislators had to decide whose bodies could be given to the anatomists. Most anatomical legislation gave the bodies of those who died in hospitals, whose bodies were not claimed by friends or relatives within a specified period of time, usually twenty four or forty eight hours to the anatomists, in addition to those cadavers which they already received from executed criminals. Part of the justification was that, since they would have to be buried at the public expense, they should provide some benefit to society.

New York's anatomical legislation demonstrates how these arguments were put into practice. A copy of the proposed “Act Regulating the Study of Anatomy” for the state of New York provides:

“That from and after the passage of this act, it shall be lawful for the overseers of the alms-house and penitentiary in the city of New York, to surrender the dead bodies of such persons *as may be required to be buried at the public expense* to the teachers of anatomy in medical school that are or may be hereafter established by this State, or to their authorized agents, to be by them used in their respective schools, for the promotion of the study of anatomy and surgery: provided always,

that no such dead body shall in any case, be surrendered if within twenty-four hours from the time of its death, some relative or particular friend shall claim such body to be inhumed.... provided that every such physician or surgeon so receiving a dead body, before it shall be lawful to deliver him the same, shall in each case, give to said overseers good and sufficient bonds, that the body so received shall be used only for the promotion of anatomical science, and that within this state, and *in such a manner as shall not outrage or disturb public feeling*; and that after having so use it, the remains thereof shall be decently buried.”<sup>38</sup> [emphasis added.]

The end of this passage is particularly interesting, as it demonstrates a sensitivity to public feelings on the matter, and tries to insure that those whom the legislation was likely to affect would be given a decent burial, as this is one reason why people of the period feared being subject to dissection. However, this last provision for decent burial likely did little to reassure the public. One of the reasons that condemned criminals were used as anatomical material was the *intention* of denying them a proper burial.<sup>39</sup> Also, when the 1832 Anatomy Act was instituted in Great Britain, there is evidence that anatomists did not comply with the requirement to their subjects a proper burial.<sup>40</sup>

For comparison, Ohio's anatomy act, which was one of the last to be passed, in 1881, reads:

SECTION 1: Be it enacted by the General assembly of the State of Ohio, that it shall be lawful in this state to deliver to the professors and teachers in medical colleges and schools, and to the members of county medical societies that are or may be auxiliary to a state medical society, and for said professors to receive, the remains or body of any deceased person for the purpose of medical and surgical study: provided that said remains shall not have been interred, and shall not have

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<sup>38</sup> “Dissections- An Act Regulating the Study of Anatomy,” *Workingman's Advocate* 2 no. 33 (1831): 2.

<sup>39</sup> Ruth Richardson, *Death, Dissection, and the Destitute*, (Chicago: University of Chicago Press, 1987) 37.

<sup>40</sup> Richardson, *Death, Dissection, and the Destitute*, 243.

been desired for interment by any relative or friend of said deceased person, or by some county or township officer, within twenty-four hours after death.”<sup>41</sup>

Ohio's Anatomy Act does not appear to differ greatly from that passed in New York in 1831, however, it is important to note that Ohio's anatomy act does not specify that it is those who would be buried at public expense that should be given to the anatomists, but is more permissive, allowing medical schools to appropriate any unclaimed body. Also of note is the specification that this is legal, “provided that the remains have not been interred,” which appears to be a subtle way of making it clear that this legislation does not legalize the process of resurrection.

While these pieces of legislation seem to us today to provide a reasonable solution, newspaper commentators felt that their provisions placed an undue burden on the lower classes, as it was they who were most likely to die in hospitals without friends or relatives who were able to afford the expense of burying them. The debate over the anatomy acts especially raged in those newspapers which catered to the working classes, such as *The Workingman's Advocate*, and *The New York Sentinel*. An anonymous author for the *Workingman's Advocate* pointed out what he saw as the injustices of the New York “Act Regulating the Study of Anatomy.” In his view, this legislation made it a crime to be poor: “In relation to the poor or the criminal -they are classed together- this law does not even allow the wish of the individual to be respected. If the friends of the deceased (and how many of them have friends!) do not apply for the body-no matter what may have been the wish of the miserable object of poverty or crime- it must be taken to

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<sup>41</sup> Linden Edwards, “The Ohio Anatomy Law of 1881,” 12-14.



the dissecting room”<sup>42</sup> He was so offended by the fact that the wishes of the deceased person in question are not consulted that he mentioned it twice.

The same paper, the *Workingman's Advocate*, published another editorial by “One of the People,” who suggested that the proposed solution of allowing anatomists to use unclaimed bodies from prisons and work houses was a necessary evil. He writes: “I will not deny; but it is much to be feared that if we were to wait for anatomical knowledge until bodies are bequeathed, or doctors die, science would not make that progress which it has made the past century<sup>43</sup>. Further it is to be recollected that few persons make objection to their own dissection, so much to their friends, those who leave none behind them are taken for the benefit of society.” This author suggested that, although anatomists of the period could not have been sure of the wishes of the deceased, in order for science to advance, someone must be subjected to dissection, and utilizing unclaimed bodies is preferable to the practices of burking and body-snatching.<sup>44</sup>

The anatomists and medical men, of course, saw things in this debate quite differently. The Massachusetts Medical Society in 1831 published an “Address to the Community on the Necessity of Legalizing the Study of Anatomy.” This address

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<sup>42</sup> “Dissections: An Act Regulating the Study of Anatomy,” *Workingman's Advocate* 2 no. 33 (1831): 2.

<sup>43</sup> One suggested solution to the shortage of cadavers was that doctors should be obligated to donate their bodies to the anatomists as a condition of being permitted to practice medicine. While some doctors may have been amenable to this, some clearly weren't. Dr. Philip Syng Physick, a professor of anatomy at the University of Philadelphia and predecessor of Dr. Horner, took special precautions to make sure that his body did not wind up on the dissecting table upon his death in 1837.

Shultz, *Body Snatching: The Robbing of Graves for the Education of Physicians in Early Nineteenth Century America*. (London: McFarland and Company, Inc. Publishers, 1992): 50.

<sup>44</sup> One of the People. “To the Editor of the New York Sentinal.” *Workingman's Advocate* 3 no. 34 (1832): 1.

eloquently argues in favor of the legalization of anatomy, making several points which were not addressed by the opposition in their writings.

First, the address argues that physicians have a legal responsibility to have a working knowledge of the body, “at a time when it is well known that heavy damages may be obtained in any court of law from practitioners of medicine in cases of mistake or error arising from ignorance of anatomy.”<sup>45</sup> This obligation, to the authors of the address, is nonsensical if medical students are prohibited from studying anatomy legally, due to a lack of material for dissection available from legal sources. They argued, “If this system of prohibiting dissection is to be persisted in, no physician should be held accountable at law for any error arising from ignorance of anatomy.”<sup>46</sup> Second, the authors considered that popular fears about being dissected were superstitions that needed to, and would, when faced with truth, be overcome in order for scientific knowledge to advance. They considered that those who did not wish for themselves or their loved ones to be dissected were being selfish by standing in the way of the discovery of knowledge which could be used to alleviate suffering. Consider this passage:

“We really think that there is a morbid sensibility on this point that out not to stand in the way of a great public improvement. There are some who can feel very keenly for those who have a dread of dissection, but have no sympathy for another class of sufferers, who are laboring under diseases of the most agonizing kind, the cure of which can only be accomplished by an improved state of anatomical knowledge.”<sup>47</sup>

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<sup>45</sup> *Address to the Community on the Necessity of Legalizing the Study of Anatomy. By Order of the Massachusetts Medical Society*, (Boston: Perkins and Marvin, 1829) 64.

<sup>46</sup> *Address to the Community on the Necessity of Legalizing the Study of Anatomy. By Order of the Massachusetts Medical Society*, (Boston: Perkins and Marvin, 1829) 72.

<sup>47</sup> *Address to the Community on the Necessity of Legalizing the Study of Anatomy. By Order of the Massachusetts Medical Society*. (Boston: Perkins and Marvin, 1829) 71.

Here, the members of the Massachusetts Medical Society are highlighted the benefits the study of anatomy gives to society, including surgical cures that would have been fatal in the previous generation. The specific example cited was a surgical repair of an aneurism of an artery in the neck, which could now be successfully tied off and repaired, but that the surgery in question “could never have been devised, and successfully performed, without long, laborious and minute dissections.”<sup>48</sup> Despite the advancements to surgery and other medical sciences that anatomical research provided, anatomists faced an uphill battle in proving the legitimacy of their discipline, both to the public, and to other members of the medical community. Legislation such as the anatomy acts helped to provide support to the anatomical profession, even if such laws were unpopular.

It is more difficult to discuss the passage of American legislation on dissection than it is to discuss the passage of the British Anatomy Act, as only one act needed to be passed for the whole of Great Britain, while in the United States, decisions on anatomy legislation were left to the individual states. This made anatomists' attempts to professionalize all the more important, as the debate had to be repeated across multiple states. This also made it more difficult for anatomists and the medical community at large to professionalize, as medical societies were organized by state, until the founding of the American Medical Association in 1847. According to the *Journal of the American Medical Association*, only one federal law was ever passed concerning anatomy and dissection, and that law, created in 1790, gave federal judges the right to add dissection to

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<sup>48</sup> *Address to the Community on the Necessity of Legalizing the Study of Anatomy. By Order of the Massachusetts Medical Society.* (Boston: Perkins and Marvin, 1829) 68.

a death sentence, in cases of murder.<sup>49</sup> Massachusetts passed its anatomy act in 1831, but many states did not follow suit until much later in the nineteenth century. Ohio passed an anatomy act in 1878, after the above mentioned resurrection of Senator John Scott Harrison. In 1881, Edward Hartwell, surveying the state of American anatomical legislation tells us that:

“To summarize the legislation from 1789 to 1870, we may say that twenty-four states allow dissection; fifteen states have liberal Anatomy Acts, while nine have illiberal one; the laws of fourteen states are silent regarding anatomy, excepting their laws on malpractice; twenty-eight states forbid the desecration of graves, while the laws of six states are silent touching both dissection and disinterment; Dakota only of the eight Territories allows dissection; four Territories forbid exhumation, and four have no enactment regarding it; twelve states and one territory require the burial of *cadavera dissecta*. The District of Columbia occupies a unique position among the capitals of civilized States, in that the studies of its anatomist and the graves of its dead are alike unprotected by statutory enactments.”<sup>50</sup>

Due to the passage of anatomy laws, by the early twentieth century most anatomical subjects were unclaimed bodies, demonstrating that, although these laws were unpopular at the time of their passage, they were successful in dealing with the problem of grave robbing and body snatching. This remained the case until 1968, when the Uniform Anatomy Gift Act was passed, which provided legal provisions to allow those who wished to do so to leave their bodies to science. The Uniform Anatomy Gift Act was adopted by all fifty states.<sup>51</sup> The passage of the UAGA demonstrates a change in the public attitudes towards dissection, but the fact that such a law was not passed until 1968

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<sup>49</sup> Tward and Patterson. “From Grave Robbing to Gifting,” 1183.

<sup>50</sup> Edward Hartwell. “The Present Legal Status of the Study of Human Anatomy in the United States.” *Annals of Anatomy and Surgery* 4 (1881): 8.

<sup>51</sup> Tward and Patterson, “From Grave Robbing to Gifting,” 1183.

shows just how embedded prejudice against dissection was, and how long public attitudes took to change.<sup>52</sup>

The professional Anatomist was a peculiarity produced by the intersection of the Enlightenment and medicine, due to attempts by enlightenment philosophers and scientists to dispel superstition, as well as attempts by individuals in the medical field to professionalize their discipline. The field of anatomy as a profession emerged in the late eighteenth and early nineteenth century, as it became more acceptable, and, with the passage of Anatomy Acts in both the United States and Great Britain, more *legal* to study anatomy. No longer forced to rely upon the flawed texts produced by men such as Galen and Vesalius, physicians and scientists, in keeping with the experimental methods of science introduced during the Enlightenment, took scalpel in hand to see for themselves how the human body was put together. In America the idea of the anatomist as a profession goes back to concerns over the quality of education provided by the proprietary schools which were the main form of medical education in the late eighteenth and early nineteenth century in the United States. As previously mentioned, proprietary schools were run part-time by medical men who were mainly *physicians*, not teachers. One commonly heard lament about the proprietary school system is that it did not provide any space for medical men who were more interested in research than they were teaching.

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<sup>52</sup> There are several different arguments for why the practice of anatomy became more palatable to the public. Paul Starr argues that it was the success of such institution as the American Medical Association, which helped the medical profession to consolidate their authority, and present an image of legitimacy to the public which turned the tide. Shultz suggests new technologies such as refrigeration allowed cadavers to be obtained from legal sources over a longer period of time while classes weren't in session, ending the need for practices such as body-snatching, to which the public so strongly objected. Paul Starr, *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry*. (New York: Basic Books Publishers, Inc, 1982) 80-110. Shultz, *Body-snatching: The Robbing of Graves for the Education of Physicians*, 90.

The rise of the university based medical education system provided medical men the opportunity to have a career as a researcher and educator, rather than as a practicing physician. This included anatomists, who took posts as dissectors, demonstrators, and professors of anatomy, as well as preparing specimens for anatomical museums.

Ludmerer claims that it was after the American Civil war that “to be a medical educator began to take on a separate meaning from being a medical practitioner,”<sup>53</sup> due to reforms to medical education which placed more stringent guidelines on university curricula, with the result that it became nearly impossible for medical educators to both teach and maintain a private practice. However, it appears that begins of this trend are evident earlier, with the American Medical Association arguing for reform to the American system of medical education as early as the 1840s. These reforms, combined with anatomy acts providing anatomists more access to subjects, were all part of the anatomists' campaign of professionalization. Although, it was indeed possible for a person holding a medical degree to make a career as a researcher and educator even before this, as evidenced by the career of William Horner. Anatomists were the doctors who devoted their careers to researching the structure and mechanics of the human body.

These are some of the issues which the nineteenth century's anatomists were facing when they took up their scalpels in pursuit of anatomical knowledge. However, despite the public perception which was stacked against them, anatomists frequently took up their pens as well to address the social issues of society in nineteenth century America. As mentioned previously, anatomists were in possession of privileged knowledge, even

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<sup>53</sup> Ludmerer, *Learning to Heal*, 41.

if this was because the public at large was not prepared to engage with the knowledge produced by a discipline that they saw as both barbaric and undemocratic. There are three areas in which nineteenth century anatomists have used their privileged position to influence the public and to make arguments supporting the legitimacy of their discipline. The first area of contention was religion. Chapter two will show how Horner, Knowlton, and Holmes, although their writings demonstrate that they held widely differing religious views, all in their public writings and speeches provided religious justifications for permitting the study of anatomy. Chapter two will examine what these three anatomists wrote about empiricism and experimental science, further using these arguments to buttress the position of anatomy as a legitimate field of study. The third and final chapter will examine the ways in which Horner, Knowlton, and Holmes influenced the professionalization of the anatomical field and the medical profession at large. The arguments of anatomists concerning religion and empiricism both fed into their arguments for the professionalization of their discipline. In that way, the professionalization of the practice of anatomy form the structural arc of this narrative.

## **Chapter Two: Anatomists and Religion**

Horner, Knowlton, and Holmes influenced the dialogue about the interactions between religion and anatomy in early nineteenth century America. Religion was an inescapable part of life in this period. The nineteenth century was a time of great religious upheaval, which scholars have termed the Second Great Awakening. Although they were men of science, the anatomists of the nineteenth century were not immune to the religious debates of their time. The anatomist's interaction with his research frequently colored his views on religion, or in some rare cases, the anatomist's views on religion informed the avenues of anatomical research that he was willing to pursue. In many cases, the anatomists' privileged knowledge of the human body and the nervous system, in particular, caused their beliefs about religion and human consciousness to be out of step with those held by the rest of society, including other members of the medical profession. Through their public writings, Horner, Knowlton, and Holmes demonstrated several of the ways anatomists conceived of religion and spirituality and its relation to their discipline.

The ideas of Horner, Knowlton, and Holmes were more influenced by materialistic philosophies than the religious ideas of physicians who regularly treated patients. While many practicing physicians (in contrast to anatomists, who were mainly engaged in research and teaching,) held fairly traditionalist religious beliefs until the closing decades of the nineteenth century, the writings of anatomists working in the the first half of that century demonstrate a divergence from the orthodox Christian beliefs of the day. Contrasting the religious views of physicians with those of medical men who made their careers as anatomists will show that anatomists had a distinct mindset on



religion, more influenced by materialistic philosophies than the religious views of their colleagues in the medical profession.

Religion and medicine have a long history of cooperation in the United States. Many of the clergy of New England were known to practice medicine to some degree, and their religious convictions influenced the medicine that they practiced.<sup>54</sup> The dual profession of the cleric/physician made a good deal of sense when one considers the theology of Puritan New England. Puritan ministers were responsible for both the spiritual and physical welfare of their congregations. Disease was frequently considered to be a punishment for sin: a minor illness affecting one person might be seen as a punishment for an individual transgression of theirs, an epidemic might be considered indicative of a larger problem with society. However, Puritan preachers who also practiced medicine were not opposed to seeking out scientific cures for their patients. The Puritans believed that scientific discoveries also came from God, and should be embraced and utilized.<sup>55</sup> Clearly, religion and the practice of medicine were by no means incompatible.

However, developments in both the field of religion and medicine caused a separation of the two professions, which was largely completed by the dawning of the nineteenth century. This is due in part to the professionalization of the medical field.<sup>56</sup> Many who wished to make a career in medicine elected to study at the universities of

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<sup>54</sup> Michael A. Flannery, "Healers at the Pool of Bethesda: Christian Faith in Anglo-American Medical Practice," *Fides et. Historia* 36 no. 2 (2004) 37.

<sup>55</sup> Flannery, "Healers at the Pool of Bethesda," 37.

<sup>56</sup> Flannery, "Healers at the Pool of Bethesda," 38.

Edinburgh and Paris. Paris in particular would have a significant impact on the development of American medicine, as will be discussed later in this period. In the United States, stricter regulations placed on medical practitioners meant that maintaining dual professions as a member of the clergy and as a medical practitioner was virtually impossible. However, most practicing physicians continued to hold fairly conservative religious beliefs until the last decades of the nineteenth century.<sup>57</sup>

The religious views of practicing physicians may be discerned from the writings of Thomas Percival, whose *Medical Ethics* had a major impact on American thinking about medical ethics, and from the 1847 code of ethics published by the American Medical Association, which drew heavily on Percival's *Ethics*. An example of the religious views of an individual physician is the work of E. H. Clarke, who published his article, "Relations of Religion to Medicine," in the *Boston Medical and Surgical Journal* in 1869.

*"The Relation of Religion to Medicine": American Physicians and Religion:*

Thomas Percival's *Medical Ethics* clearly draw much of their rationale from a Christian morality. Percival, an English physician working out of Manchester, published his *Ethics* in 1803. It was to have such an impact on thinking about medical ethics that the American Medical Association would use Percival's work as a model when crafting their own code of medical ethics in 1847.<sup>58</sup> Most obviously, Percival believes that medical men are obligated to keep the Sabbath, "so far as is compatible with the urgency

<sup>57</sup> Flannery, "Healers at the Pool of Bethesda," 40.

<sup>58</sup> Flannery, "Healers at the Pool of Bethesda," 39.

of the cases under their charge.”<sup>59</sup> Percival's work is also peppered with references to “Divine Providence,” “Wisdom,” and “Virtue.” In his study on Percival's *Ethics*, Edmund Pellegrino writes that “The fusion of Enlightenment science with the virtues proper to a Christian Gentleman is the shaping force of Percival's *Medical Ethics*.”<sup>60</sup>

Perhaps more significant than Percival's own views is the fact that the American Medical Association saw fit to use Percival's *Medical Ethics* as a model, indicating that Percival's frequent references to Divine Providence did not sound incongruous to the members of that association.

Indeed, the opening lines of the introduction to the American Medical Association's code of ethics of 1847 state that “medical ethics, as a branch of general ethics, must rest on the basis of religion and morality.”<sup>61</sup> The *Code of Ethics of the American Medical Association* does not utilize religion as explicitly as Percival's *Ethics*. For example, Percival's injunction that physicians should endeavor to observe the Sabbath does not appear, but the idea that the physician must be a man of morals features prominently. The 1847 code states that “There is no profession, from the members of which greater purity of character, and a higher standard of moral excellence are required than the medical; and to attain such eminence, is a duty every physician owes alike to his profession and to his patients.”<sup>62</sup> The American Medical Association also connects public

<sup>59</sup> Thomas Percival, *Medical Ethics*, quoted in Michael A. Flannery, “Healers at the Pool of Bethesda: Christian Faith in Anglo-American Medical Practice.” *Fides et Historia* 36 no. 2 (2004) 39.

<sup>60</sup> Edmund Pellegrino, quoted in Michael A. Flannery, “Healers at the Pool of Bethesda: Christian Faith in Anglo- American Medical Practice.” *Fides et Historia* 36 no. 2 (2004) 40.

<sup>61</sup> *Code of Ethics of the American Medical Association*, (Chicago: American Medical Association Press, 1847) 83.

<sup>62</sup> *Code of Ethics of the American Medical Association*, 98.

hygiene and morality, claiming that physicians are in a unique position to understand and explain this connection.<sup>63</sup> Reference is also made to the “sacred duty” which the physician owes his patients.<sup>64</sup> The *Code of Ethics of the American Medical Association*, while clearly a product of the professionalization of the medical field, still reveals the underlying religiosity of the Association's members.

E. H. Clarke, in writing for the *Boston Medical and Surgical Journal* in 1869, twenty years after the American Medical Association issued their Code of Ethics, attempted to explain what he sees as the proper relation of medicine and religion. E.H. Clarke was himself a physician, and the son of a congregationalist minister. He received his medical degree from the University of Pennsylvania in 1846. Clarke maintained a private practice in Boston, and also served as Professor of Materia Medica at Harvard Medical School from 1855-1872. As his position as Professor of Materia Medica might suggest, Clarke specialized in therapeutics. Clarke was a colleague of Oliver Wendell Holmes, Sr. After Clarke's death in 1877, Holmes produced an edition of Clarke's last work, *Visions: A Study of False Sight (Pseudopia)*, which he himself had edited and written the introduction.<sup>65</sup>

According to his “Relation of Religion to Medicine,” Clarke clearly believes that medicine and religion must work together. Clarke writes that “It is perhaps more difficult to describe the relations of Medicine to Religion than of Medicine to Education, or Law. Yet it is obvious, that between the two, there must be relations of the most intimate

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<sup>63</sup> *Code of Ethics of the American Medical Association*, 86.

<sup>64</sup> *Code of Ethics of the American Medical Association*, 94.

<sup>65</sup> Philip K. Wilson. “Clarke, Edward Hammond.” <http://www.anb.org/articles/12/12-01238.html>. *American National Biography Online*. Feb.2000. Access Date: Sun Mar 24 2013

character. ...Medicine is the science of physical life. Religion is the science of spiritual life.”<sup>66</sup> Interestingly, in support of his arguments for the cooperation of religion and medicine, Clarke points to the fact that “In the earliest age, medicine and religion were the same: The physician and the priest were one.”<sup>67</sup> Clarke further argues that medicine and religion can work together by seeking truth through critical investigation of both medical and religious knowledge, by seeking evidence, and accepting evidence when it is found. According to Clarke, “Religion, I have said, comprehends the divine order of things; and medicine touches a part of that divine order. Hence the two must harmonize.”<sup>68</sup> Clarke believed that it was possible, and even beneficial, for religion to have a place in the practice of medicine.

Clarke also makes a curious comment in “Relations of Medicine to Religion,” which is telling about the way the medical profession was perceived in the nineteenth century. Clarke says “There is mystery all about us. None recognize this more fully than the physician. He deals constantly with the mysterious and the unknown, but he does not people the darkness with hobgoblins. Where he cannot see, he confesses his ignorance and waits for the light.”<sup>69</sup> Anatomists in the nineteenth century pointed out the difference between practicing physicians, who attempted to diagnose diseases from external signs, an inexact science to be sure, and anatomists who could answer questions by visually

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<sup>66</sup> E.H. Clarke, “The Relations of Medicine to Religion.” *Boston Medical and Surgical Journal* 81 (1869): 152.

<sup>67</sup> Clarke, “The Relations of Medicine to Religion,” 152.

<sup>68</sup> Clarke, “The Relations of Medicine to Religion,” 153.

<sup>69</sup> Clarke, “The Relations of Medicine to Religion,” 153.

examining the internal structures of the body. French anatomist Marie Bichat (1771-1802) wrote that a physician could spend as long as he liked examining the outward signs of disease and still find the cause mysterious, however, “open a few corpses, and immediately this obscurity, which observation alone would have removed will disappear.”<sup>70</sup> This neatly illustrates one of the professional divides between anatomists and physicians.

Clarke's article in the *Boston Medical and Surgical Journal* is followed by an editorial commentary which criticizes Clarke for his insistence on holding religion to the same standards of evidence as the sciences. Clarke's writings, insisting that medicine and religion are, or should be, cooperative disciplines seems quite conservative, and Clarke goes out of his way in his article to make clear that he is in no way advocating for materialism. However, the unnamed commentator on Clarke's article writes that “Certain *experiences* of the inner man in his relation to unseen things are testified to, as revealed only by consciousness (just as sensation is taken cognizance of by perception), and which are *ipso facto* not capable of *demonstration* to others. These statements of individual experience are, however, corroborated by acts and courses of action which cannot be fairly accounted for save by accepting the reality of the facts alleged.”<sup>71</sup> This seems to indicate that physicians may have been even more traditional than E. H. Clarke's writing would suggest, at least in the debate over the interaction of science and religion.

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<sup>70</sup> Marie Bichat, quoted in William Dowling, *Oliver Wendell Holmes in Paris: Medicine, Theology, and the Autocrat of the Breakfast Table*, (Hanover: University Press of New England, 2006) xi.

<sup>71</sup> Anonymous editor, “The Relations of Medicine to Religion,” *Boston Medical and Surgical Journal* 81 (1869): 153.

*The Religions of the Anatomists:*

The most conservative of the anatomists who feature in this study was Dr. William Horner, who served as professor of anatomy at the University of Pennsylvania. Horner, rather than being influenced by his anatomical research to change his religious views, instead allowed his religious views to guide his anatomical research. While there is no evidence which speaks to Horner or his family being formally affiliated with any religious denomination, Horner's earliest formal education was under an Episcopalian minister.

In his 1843 introductory lecture, Horner waxed metaphysical about the creation of man and man's place at the head of creation. The first significant evidence of Horner's religious opinions appears at the beginning of the lecture, where he states that:

To study the organization of a being, whose destinies, according to the declaration of Omnipotence, have called him to the headship of animal life- to whom it has been conceded to have dominion over the whole offspring of the earth- the inhabitants of the waters- and the flitting tenants of the air, - to inquire, I repeat, into the structure of such an existence as man, is to engage in a course of philosophy of remarkable extent, beauty, and interest.<sup>72</sup>

The two important ideas here are Horner's mention of Omnipotence, clearly here meaning an all powerful divine being and his remark on philosophy. From this statement, one can surmise that there is a fair probability that Horner believed in a God, and that he conceived of that God as being the all powerful God common to Christian theology. From Horner's remark that to study the structure of man, or to study anatomy, is to

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<sup>72</sup> William Horner, *Introductory Lecture Before the Medical Class of the University of Pennsylvania, Delivered Nov. 9, 1843* (Philadelphia: Merrihew and Thompson, Printers, 1843), 3.

engage in a course of philosophy, it appears that Horner found the study of anatomy to have an almost spiritual element.

William Horner's view of the divine also appears to have some deistic elements, as Horner finds evidence of divinity in the complexities of human anatomy, particularly in the fact that, although man is not the strongest or fastest member of the animals, he is still finds himself at the head of the animal kingdom. Horner attributes this to the belief that in mankind, the senses are perfectly balanced. Later in the same speech, Horner writes that:

“In man, on the contrary, the sight, the hearing, the smell, the taste, the touch, the mechanism and motion of the limbs all combine, in just proportions, to produce the greatest dynamic result We look with admiration upon such mechanism in examining its wonderful adjustment to exterior objects; but we are lost in contemplation, when, to this mechanism, is added, for its direction, man's intelligence – an intelligence only inferior to that of disembodied spirits. . . . And to the metaphysician may be left the analysis and exposition of those mental properties which, whether they consist in a plurality of faculties, or are merely the exercise of one, place man at the head of intellectual animals.”<sup>73</sup>

As demonstrated by the above, Horner's writings bear similarities to those of Holmes, as Horner views the complex mechanism of the human body both as evidence that it was created by the divine, but also, that in Horner's view, human beings are the most perfect of the creatures created by the Divine, (due, as Horner explains, to the proper balance of all of the senses,) places man at the head of creation. This belief of Horner's, however, seems to be evidence to support a previously held religious conviction. Although Horner's religious beliefs appear to be fairly traditional, and not

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<sup>73</sup> Horner, *Introductory Lecture Before the Medical Class of the University of Pennsylvania, Delivered Nov. 9, 1843*, 4-5.



derived from his anatomical research, Horner still used these beliefs to offer in his public writings and speeches arguments in favor of the practice and study of anatomy. Because, according to Horner, man is God's most perfect creation, it is a worthy subject of study.

In contrast to Horner, Oliver Wendell Holmes' writings demonstrate that his study of anatomy and medicine, particularly his studies in Paris under Dr. Pierre Charles Alexandre Louis influenced his religious views. The new medical theories that Holmes encountered in Paris influenced the way he thought about religion, and in turn, some of the ways in which Holmes presented his arguments in favor of anatomy. The most significant thing which Oliver Wendell Holmes learned during his studies in Paris was the philosophy of *vis medicatrix naturae*, or the healing power of nature, a medical philosophy of which Dr. Louis was a major proponent<sup>74</sup>. This medical theory proposed that nature, which contained aspects of divinity, inherently worked to restore the balance which made a person healthy, and that the goal of medicine should be to help nature along, or at the very least, not interfere with nature's healing action.

The followers of *vis medicatrix naturae* also no longer believed that the body was governed by the four humors. This was in contrast to the primary type of medicine practiced in America in the eighteenth century, heroic medicine, which attempted to balance the humors through techniques such as bleeding as the application of emetics. Proponents of the *vis medicatrix* believed many of the techniques utilized by heroic medicine to be actively harmful to the patient.

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<sup>74</sup> William Dowling, *Oliver Wendell Holmes in Paris* (Hanover: University Press of New England, 2006), 84.

Holmes' religious view evolved out of his belief in the *vis medicatrix naturae*. Holmes has been on occasion called a Deist, but that is not entirely correct. While the Deists believed that the universe operated on a set of knowable laws, and that this was proof that an intelligent God had created the universe, but no longer actively participated in the running of the universe, Holmes, because of his belief in the *vis medicatrix naturae*, would have interpreted that the divine was still active in the universe, as nature actively worked to heal injury and illness.<sup>75</sup>

Holmes' Breakfast Table books, his most famous published works, are the most valuable sources for gaining an insight into his religious worldview. The Breakfast Table series includes *The Autocrat of the Breakfast Table*, *The Professor of the Breakfast Table*, and *The Poet of the Breakfast Table*. William Dowling explains how Holmes' studies in Paris changed his worldview and informed the Breakfast Table books, which began as a series of articles published in *The Atlantic Monthly* beginning in 1857. He states that “Holmes speaking as a physician was able to posit the existence of a benign universe and a benevolent Creator in a way that gave his Breakfast Table books a special and important status in the literature of Victorian religious anxiety.”<sup>76</sup> Hence, the Breakfast Table books not only reveal Holmes' religious philosophies, but their popularity with the public demonstrates Holmes' ability to influence the public discussion about anatomy.

The Breakfast Table books are written as a conversation between the residents of a boarding house in New England. Part of Holmes' personality might be ascribed to various characters within the works, most notably the Autocrat and the Professor (who is a

<sup>75</sup> Dowling, *Oliver Wendell Holmes in Paris*, 85.

<sup>76</sup> Dowling, *Oliver Wendell Homes in Paris*, 89.

medical man,) but as it is a work of fiction, one must be cautious in assuming that any character professes the same opinions that Holmes himself held. Nonetheless, the works are instructive.

The Autocrat of the *Autocrat of the Breakfast Table* does not appear to think particularly highly of traditional clergy. The Autocrat early in his discourse with the residents of the boarding house states that, “It is an odd idea, that almost all our people have had a professional education... Now, most decent people hear one hundred lectures or sermons (discourses) on theology every year – and this twenty, thirty, fifty years together. They read a great many religious books besides. The clergy, however, rarely hear any sermons except what they preach themselves. A dull preacher might be conceived, therefore, to lapse into a state of *quasi* heathenism simply for want of religious instruction.”<sup>77</sup> From this, the Autocrat concludes that many average persons, simply by virtue of having heard a lifetimes' worth of sermons, are as qualified to be experts in matters of religion as any doctor of divinity.

Although these comments were intended partly as satire, there is an element of truth in them, as these sentiments echo those professed by the participants of the Second Great awakening, who believed in a democratic form of religion and emphasized the personal and individual readings of the Bible. It has been argued that the Second Great Awakening was the product of the democratization of religion.<sup>78</sup> Revivals rejected religious hierarchy, and emphasized enthusiasm and the personal conversion experience

<sup>77</sup> Oliver Wendell Holmes, *The Autocrat of the Breakfast Table* (New York: Thomas Y. Crowell and Company Publishers, 1900), 25-26.

<sup>78</sup> Lacorne, Denis. *Religion in America: A Political History*, (New York: Columbia University Press, 2011) 45.

of the individual. Whereas Calvinist doctrine dictated that the decision to consider a member of the community a 'saint' was a decision which was undertaken by the church elders, and that only those which had been deemed saints could be full members of the church, the revivals of the Second Great Awakening put the agency for their own salvation back into the hands of the individual participant. The idea of *sola scriptura* was also emphasized at this time, placing more importance on the reading of Bible by the individual, and less emphasis on learned interpretations of theology.<sup>79</sup> This emphasis on a more democratic kind of religion, that one did not need an authority figure to interpret text for him, or to mediate religious experience, reflects a strongly democratic world view held in general by many Americans of the early nineteenth century. These democratic developments in religion reflect similar developments in politics and science as well.

This demonstrates that Holmes' interaction with the intellectual currents of his day, even though he may not necessarily have agreed with them. Holmes was involved in a uniquely American dialogue concerning the proper place of anatomy. In his essay "Homeopathy and its Kindred Delusions," Holmes laments the over-democratization of the Jacksonian era which he believes has led many to think that they no longer require the aid of doctors, merely because they have read the popular manuals on medicine. Holmes writing in the *Autocrat of the Breakfast Table*, and in his medical essays "Homeopathy and It's Kindred Delusions," and "Currents and Counter-currents in Medical Science," shows his displeasure with the trend for democratization of authority in religion and in medicine, making Holmes a strong proponent for medical reform.

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<sup>79</sup> Lacome, Denis. *Religion in America: A Political History*, (New York: Columbia University Press, 2011) 47

The Autocrat also takes direct aim at Calvinism, or at the very least at the way in which children are indoctrinated into Calvinist teachings. The Autocrat says:

Here are children of tender age talked to as if they were capable of understanding Calvin's 'Institutes,' and nobody has the honesty or sense enough to tell the plain truth about the little wretches; that they are as superstitious as naked savages, and such miserable spiritual cowards- that is, if they have any imagination,- that they will believe anything which is taught them, and a great deal more which they teach themselves.<sup>80</sup>

There are several things to unpack in this statement, besides the obvious animosity towards Calvin's *Institutes*. What Holmes is illustrating here is the way in which Puritan theology has been used to as an instrument of social control, as, if the Autocrat is to be believed, it was taught to children in a method intended to frighten them, and that even after they are grown, they continue to believe what they were taught as children, including 'a great deal more which they teach themselves,' which suggests a further corruption of doctrine which is not corrected by their elders. It seems that Holmes is suggesting that it would be more beneficial to teach children to think critically about religion, instead of simply indoctrinating them to the words of Calvin's "Institutes."

Holmes' personal theology also reveals itself in *The Autocrat of the Breakfast Table*. The place where in *The Autocrat of the Breakfast Table*, the reader is most likely hearing Holmes' true voice is in the poem, "The Anatomist's Hymn." According to the Autocrat, the "Anatomist's Hymn," was written by the Professor. The fact that the poem was supposedly written by the Professor but is being quoted to the assemblage by the Autocrat, and that these are the two characters who share Holmes' viewpoint is certainly significant. One must wonder if Holmes wrote the "Anatomist's Hymn" specifically for

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<sup>80</sup> Holmes, *The Autocrat of the Breakfast Table*, 205.

inclusion in *The Autocrat of the Breakfast Table*, or if Homes had written it previously and decided that it would make a good addition.

In the Anatomist's Hymn, Holmes writes that evidence of the glory of God can be found not only in creation in the form of nature, as Holmes writes of it in the form of “belted seas that come and go,” and “endless isles of sunlight green,”<sup>81</sup> but also in the human body. The text of the poem in fact compares the human body to nature. Holmes describes the flow of blood as rivers and streams, while muscles are compared to marble, and his description of “how the rolling surge of sound/ Arches and spirals, circling round/ Wakes the hushed spirit through thine ear,” brings to mind the ocean surging through a seashell. The way in which Holmes uses nature imagery in this poem seems to be an attempt to emphasize both that man is a part of nature and that nature and mankind are equally God's creation. This would work well with Holmes' belief in the *vis medicatrix naturae*, as, if mankind is a part of nature, it would follow that the repairing powers of nature should be able to heal him.

It is peculiar that the Professor names this poem the “Anatomist's Hymn,” but the Autocrat wishes to rename it “The Living Temple.” While, if one realizes what the text of the poem is describing, the two titles have differing connotations. The title “Anatomist's Hymn,” suggests that the poem was written as an act of homage to a divine power, while “The Living Temple,” seems a more Romantic title, and also suggests that the text is a mere description of a phenomenon, but not an act of religious devotion. However, the poem's concluding plea, “O Father! Grant thy love divine/ to make these mystic temples

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<sup>81</sup> Holmes, *The Autocrat of the Breakfast Table*, 174.

thine! ... Take the dust thy mercy warms/ and mould it into heavenly forms!”<sup>82</sup> would seem to emphasize the poem's status as a hymn.

The Autocrat includes in his discussion a section on how a man comes to change his mind, stating that “It does not follow, of course, that I may not recognize another man's thoughts as broader and deeper than my own; but that does not necessarily change my opinion, otherwise this would be at the mercy of every superior mind that held a different one. How many of our most cherished beliefs are like those drinking-glasses of ancient pattern, that serve us well so long as we keep them in our hand, but spill all if we attempt to set them down!”<sup>83</sup> Here, Holmes is saying that one does not change his mind just because a man of superior intellect tells him that he is wrong, but if a man examines his own 'cherished beliefs,' like those of religion, with a critical and logical eye, he may find that they no longer serve. For Holmes, studying new medical philosophies which had originated out of the materialism of such French revolutionary writers such as Voltaire caused Holmes to reevaluate the Calvinism of his upbringing and form a his own spiritual philosophy based around the *vis medicatrix naturae* and the belief of a benevolent divine spirit who was active in the universe. It is important to remember that Holmes' *Breakfast Table Books* were widely popular, and had a wide audience. This indicates that the public accepting of the ideas that Holmes was presenting. Holmes, it should be noted, was involved with the Transcendentalist movement. The works of other transcendentalist writers such as Emerson and Thoreau were also popular in the first half of the nineteenth century.

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<sup>82</sup> Holmes, *The Autocrat of the Breakfast Table*, 176.

<sup>83</sup> Holmes, *The Autocrat of the Breakfast Table*, 14.

Of the three anatomists examined in this study, Holmes did not have the most controversial religious views. Those belonged to Charles Knowlton. Knowlton might be variously described as an agnostic and an atheist. The confusion is due to Knowlton's own writings; in his first published work *Elements of Modern Materialism*, Knowlton appears agnostic, however in his later *Two Remarkable Lectures Delivered in Boston*, Knowlton writing is clearly atheistic, as he calls out all religion as 'superstition.'

Knowlton, whose writings indicate that he was influenced by materialistic philosophy, appears to have based the majority of his philosophical and religious views on his understanding of the nervous system. One of the particulars of anatomical research which had a tendency to alter anatomist's views on religion was their study of the nervous system. This is because of the connection between consciousness and the soul. If the mechanisms which produce consciousness can be proven without referencing the soul, or finding any physical evidence of its existence, what does this say about the possible existence of a soul which continues after physical death? And what does this say about other being which are not posited to have a physical body, for example, God himself? This questioning of the nature of human consciousness had a particularly profound impact on Knowlton.

Knowlton laid out the schema of his understanding of the nervous system in his works *Elements of Modern Materialism* and *Two Remarkable Lectures Delivered in Boston*.<sup>84</sup> He did so most elaborately in *Two Remarkable Lectures*. Knowlton

<sup>84</sup> Knowlton, Charles, *Elements of Modern Materialism: Inculcating the Idea of a Future State in which all will be More Happy Under Whatever Circumstances They May Be Places, Than if They Experienced No Misery in This Life*. Adams: A. Oakey, 1829.

Knowlton, Charles. *Two Remarkable Lectures Delivered in Boston, by Dr. C. Knowlton, on the Day of His Leaving the Jail at East Cambridge, March 31, 1833, Where He Had Been Imprisoned for Publishing a Book*. Boston: A Kneeland, 1833.



differentiated between three different functions of the nervous system, namely, ideas, sensations, and perceptions. According to the doctor, a sensation occurs when something makes an impression upon the nerves, and this impression is transmitted to the brain. Perception occurs when the brain takes notice of this sensation, as a person may be experiencing many sensations, but only take note of one or a few of them. An idea is a product solely of the brain that occurs without input from the nerves, however, one must have first perceived something in the past in order to have a idea of it later. For Knowlton, to have sensations, perceptions, and ideas is to be conscious, and all of these are functions of the nerves. One cannot be conscious without possessing a nervous system. Therefore, Knowlton finds the existence of an immaterial consciousness, such as a divine spirit or a soul which can exist as a separate entity from the corporeal self, to be impossible. Indeed, Knowlton says “Language cannot express a greater absurdity, than an *immaterial being*. If a *thing* be said to be extended, or to have the property of extension, but not that of solidity, or other material properties, why, it is so much space, *empty space*, which is but another term for nothing.”<sup>85</sup>

Knowlton applies this conclusion in order to critique conventional religion in his *Elements of Modern Materialism*. In this work, Knowlton argues against the omnipresence of God on the basis of materialism, having concluded that if God exists, he must be a material being. Knowlton writes:

The doctrine that the Deity exists every where, not only virtually but substantially, is of modern origin. There are hundreds of passages in scripture which speak of the Deity as a Being of determinate dimensions, to one which speaks of him as a

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Knowlton, *Two Remarkable Lectures*, 7.

Being who fills immensity or all space....The notion is unfounded, ridiculous, and degrading. It arose from faithlessness in God's omnipotence. Thinking it impossible for God to sit on his throne in heaven, and know what is going on in every part of his machine; thinking also, that God is too powerless an architect to organize the universe in such a manner that all things may go on it as harmoniously as they do without his looking to it – without his immediate agency – somebody, I do not know who, advanced the notion that God is every where present, upholding and revolving the heavenly bodies, shooting forth vegetables, causing animals to be, operating upon the human heart, &c, &c.<sup>86</sup>

Here we see Knowlton utilizing the metaphor of the universe as a machine, reflecting similarities to the theologies expressed by Holmes and Horner. Holmes, however, appears to have believed that a deity still acted upon the universe, to produce the healing powers of nature, the *vis medicatrix naturae*, while Knowlton's materialism led him to believe that if God exists, he is a material being, and if God is a material being, he cannot be in more than one place at a time, an adjunct of which is, if he is God, why does his creation constantly require assistance? Knowlton examines both the idea that deity is 'virtually' omnipresent, and the idea that deity is 'substantially' omnipresent, and concludes that he does not concur with either.

It is worth noting that *Elements of Modern Materialism* is Knowlton's first published work, and in it Knowlton's views appear more agnostic than in his later works, particularly *Two Remarkable Lectures*, in which Knowlton appears much more the pure atheist. It is probable that in writing *Elements of Modern Materialism* Knowlton was being cautious not to overly offend his audience, as the work was being published for profit, as opposed to his *Two Remarkable Lectures*, which Knowlton delivered upon his release from being imprisoned for writing *Fruits of Philosophy*, which had been deemed

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<sup>86</sup> Knowlton, *Elements of Modern Materialism*, 37-38.

indecent.

Knowlton was imprisoned twice, once for grave robbery, and once for the publication of *Fruits of Philosophy*. These incidents demonstrate the public distaste for anatomists and dissection. Neither Holmes or Horner were ever imprisoned, but Horner does recount some of the violence faced by his predecessors in the post of Professor of Anatomy at the University of Pennsylvania. And Knowlton was certainly not the only anatomist who was imprisoned in the United States for grave robbery. Dr. Thomas Sewell was fined \$800 in 1819 for being found in possession of illegally disinterred remains.<sup>87</sup> This demonstrates those in power neither approved of the anatomist's methods, or the knowledge that they were producing.

The public writings of Horner, Knowlton, and Holmes, not only allow readers to glimpse evidence of the religious and spiritual beliefs of these figures, but demonstrate the ways in which Horner, Knowlton, and Holmes used their religious beliefs in order to affect the public discourse on anatomy in support of their discipline. Horner argued to academic audience that, as man was God's most perfect creation, the human form was a noble and worthy subject of study. Knowlton concluded from his study of the nervous system that there was no god or higher power, and therefore moral arguments against the study of anatomy, or against the application of knowledge gained from anatomical study in order to benefit society, were invalid. Holmes used his platform as a popular writer to present works such as the "Anatomist's Hymn," to a wider section of the public, thereby demystifying the process of anatomy, and making the subject less horrifying through

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<sup>87</sup> Suzanne Shultz, *BodySnatching: The Robbing of Graves for the Education of Physicians* (Jefferson: McFarland and Co, Inc, 1992), 52.

familiarity.

*The Influence of Parisian Medicine:*

The views of both physicians and anatomists were influenced by the dramatic strides which the field of medical research made in the nineteenth century, and particularly by new methods of medical teaching which were being employed in the hospitals of Paris. These developments led to advancements in anatomical research as well as advancements in diagnostics. These developments were most advantageous to anatomists, as new developments in diagnostics were not immediately followed by developments in therapeutics, which would be of practical use to physicians attempting to treat patients. Study in Paris seems to have been particularly popular among middle and upper class medical students and physicians. Holmes knew many of his fellow American students in Paris, such as James Jackson, Jr., Mason Warren, and Henry Bowditch.<sup>88</sup> Holmes himself was from the upper reaches of Boston's social classes, and has been referred to as one of the Boston "Brahmins." While foreign study was limited to those who had the means to travel abroad, what appears to also have been a significant determining factor is the student's interest being on the cutting edge of their field. Paris was the main center of medical research in the Western world at the time.

Foreign study was not a requirement for an American student simply seeking to set up a practice and make a living, although it did help. As Starr explains, being a physician in the nineteenth century did not automatically confer the prestige that it does

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<sup>88</sup> Dowling, *Oliver Wendell Holmes in Paris*, 29.

today.<sup>89</sup> A physician instead gained prestige through having the most illustrious clients. To do this, he needed to earn his clients' confidence. The most advanced education available would have been one way to further this goal. This might be one explanation for the popularity of foreign study. The physician's own social standing would have influenced the clients he was able to serve. Foreign study may have been almost expected for physicians who had the means to undertake it and wished to be respected among their peers.

The influence of materialist philosophies developed during the French revolution created a shift in thinking about medical education in France. The study of medicine in pre-revolutionary France much resembled medical education in the rest of Europe, and consisted largely of reading and committing to memory the works of such ancient scholars of medicine. After the revolution, influenced by the philosophy of such writers as Voltaire, French physicians sought to bring the study of medicine in line with the rest of the sciences, which had been experiencing a great deal of advancement.<sup>90</sup> It was materialist philosophy which made this alteration possible. As stated previously, materialism posits that only physical things exist, and that everything, including such intangibles as light and human consciousness, are the product of interactions of the physical world. Evidence of the materialist philosophy in the Parisian medical world can be seen in the work of Julien Offray de la Mettrie, whose book *L'Homme Machine*, as the title suggests, posited that man was merely a physical system, the same as any other

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<sup>89</sup> Paul Starr, *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry*. (New York: Basic Books Inc, 1982), 81.

<sup>90</sup> Dowling. *Oliver Wendell Holmes in Paris*, 6-7.

machine.<sup>91</sup>

Another of the significant shifts in medical thinking that led to these new opportunities was a new way of thinking about disease. Early physicians and scientists thought that a person could not be sick without feeling sick. However, Jacalyn Duffin, a French epistemologist, suggested that disease was “an entity harbored within the body,” and that a person could be ill without feeling unwell, but that the physician should still be able to detect this illness.<sup>92</sup> This shift in the thinking about disease led to new diagnostic techniques, such as auscultation, the art of listening to the chest with a stethoscope in order to detect changes in the lungs.

Together, this revolution in thought led to the reorganization of the Paris hospital system. In this reorganization, institutions were devoted to specific purposes. For example, the hospital Enfants Malades was the first hospital specifically dedicated to children's diseases. However, the most significant institution for the developments discussed in this study is the Clamart, which was a large space dedicated to anatomical dissection.<sup>93</sup> The Clamart and the Ecole Pratique d'Anatomie were a large draw for foreign students, due to the availability of material. One of Holmes' contemporaries noted that as many as four thousand subjects were available for dissection annually.<sup>94</sup> Many American medical students would spend a good deal of time in these two institutions.

The reorganization of the Paris hospital system also favored teaching students

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<sup>91</sup> Dowling. *Oliver Wendell Holmes in Paris*, 6.

<sup>92</sup> Dowling, *Oliver Wendell Holmes in Paris*, 11.

<sup>93</sup> Dowling. *Oliver Wendell Holmes in Paris*, 9.

<sup>94</sup> Dowling. *Oliver Wendell Holmes in Paris*, 16.

through experience. Antoine Fourcroy, in a 1794 report submitted to the National Convention, described the proposed new method of teaching, saying “The students will do chemical exercises, dissections, operations, and bandaging. Little reading, much seeing, and much doing will be the foundation of the new teaching which your committee suggests. Practicing the art, observing at the bedside, all that was missing, will now be the principle part of instruction.”<sup>95</sup> It is easy to see how a culture which had produced such works as *L'Homme Machine* would be more willing to allow human dissections in the early nineteenth century than the United States, which had not adopted such radically materialistic philosophies. It was the opportunity to experience this new method of teaching medicine which drew American students to Paris, and in the process, they were exposed to such works as *L'Homme Machine*, which they adopted into their own philosophies and theologies.

The structure of a medical student's education in Paris at this time took advantage of the opportunities provided by the large hospital complex. Students likely accompanied teaching physicians on their rounds and attended lectures in the mornings, and preformed dissections in the afternoons.<sup>96</sup> Medical students would have been hard pressed to find the opportunity to observe well known physicians treating patients, and to conduct dissections themselves, elsewhere.

While these shifts in teaching and thought influenced the world views of anatomists, and were transported across the Atlantic to anatomists in the United States,

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<sup>95</sup> Antoine Fourcroy, quoted in William C. Dowling *Oliver Wendell Holmes in Paris: Medicine, Theology, and the Autocrat of the Breakfast Table*. (Hanover: University of New England Press, 2006) 7.

<sup>96</sup> Dowling. *Oliver Wendell Holmes in Paris*, 29.

they were not as influential in altering the religious views of practicing physicians. This is likely because, although new diagnostic techniques were now available to help physicians determine what ailed their patients, there was not a corresponding advancement in therapeutics. This was one reason why most practicing physicians remained conservative in their religious views.<sup>97</sup> New methods of treating disease would not arrive until the last decades of the nineteenth century. Thus, physicians of the early half of the nineteenth century were less likely than their anatomist counterparts to adopt the new medical theories emerging from Paris, and the materialistic views which accompanied them. A reason for this is that during this period, in medicine, unlike other sciences such as physics, there was not yet any replicable proof to support materialism.

*Conclusion:*

Horner, Holmes, and Knowlton demonstrate a spectrum of religious belief across the field of anatomy. Horner stands at one end, allowing his religious convictions to shape his scientific research, and resembling the more traditionalist opinions of physicians of his day. Holmes, who with his Parisian education had of the three anatomists discussed here what was likely the career path most similar to other American anatomists of the early and mid nineteenth century, appears to have merged his religious beliefs with his scientific knowledge to create a workable personal theology similar too. Knowlton stands on the opposite end of the spectrum from Horner, having concluding from his studies of the nervous system that there could be no such thing as an immaterial

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<sup>97</sup> Flannery. "Healers at the Pool of Bethesda," 40.



consciousness, and there was therefore no God and no such thing as the soul. Despite the wide variations in their religious opinions, these anatomists stand as a group because their views, particularly those of Holmes, were demonstrably different than those of practicing physicians.

Although there are no records of how many anatomists were practicing in the United States in first half of the nineteenth century, an examination of the number of medical schools provides some idea of how many there were likely to have been. There were six University medical school in the United States in the early nineteenth century, and many more schools offering private anatomy courses. Of these, there were at least six in Philadelphia alone.<sup>98</sup> Still, if one supposes that there were a similar number of private anatomy courses offered in all major cities, the number of anatomists would remain rather low.

A professional organization for anatomists, the American Association of Anatomists was founded in 1888 at Georgetown University in Washington DC.<sup>99</sup> Nicholas Michels, recounting the history of the American Association of Anatomists at their annual meeting in 1955 wrote that: “From the days of its formative period, our Association has followed the policy of electing to membership not only professional anatomists but men who were distinguished in other fields. As attested by the list of members (244) published in the first volume of *The Anatomical Record* (pages 96-107, 1907), such men comprised: physicians and surgeons, pathologists, physiologist,

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<sup>98</sup> Shultz, *Body-snatching: The Robbing of Graves for the Education of Physicians*, 18.

<sup>99</sup> Nicholas Michels, “The American Association of Anatomists: Its Origins, Aims, and Meetings,” *The Anatomical Record* 122 no. 4 (1955) 685.

biologists, neurologists, and zoologists, anthropologists, and even an artist.”<sup>100</sup> If in 1907 there were at most 244 anatomists in the United States, there were certainly fewer in the first half of the nineteenth century.

The anatomical profession was small enough in the early nineteenth century that anatomists would likely have known most of their colleagues, at least by name, and been familiar with their writings and ideas. One way in which American anatomists of the early nineteenth century formed a distinct subculture separate from that of other members of the medical profession was through their religious views, which tended towards materialism and were largely influenced by their anatomical research.

Horner, Knowlton, and Holmes influenced the discussion on the intersection between anatomy and religion through their public writings. Horner's lectures show the ways in which he worked to convey to his students that the study of anatomy was a noble pursuit, as it was the study of God's most perfect creation. Knowlton's writings and public speeches attempted to convince the public that anatomy had shown that there was no higher power. And Holmes' popular Breakfast Table series conveyed to the public a Romantic and Transcendentalist view in which man was a part of the divinity of nature. Despite their differing religious opinions, the writings of all three of these anatomists provide religious and spiritual reasons why the study of anatomy was an acceptable and worthwhile pursuit.

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<sup>100</sup> Michels, “The American Association of Anatomists: A Sketch of Its Origin, Aims, and Meetings,” 692.

## Chapter Three: Anatomists and Empiricism

### *Introduction:*

The religious opinions of nineteenth century American anatomists demonstrate that the Anatomists formed a distinct sub-culture, separate from that of their colleagues in the medical field. This distinct sub-culture is also demonstrated by the anatomists by their support of the idea of empiricism in their writings.<sup>101</sup> It is logical that Horner, Knowlton, and Holmes would have been investing in supporting the development of new medical theories through experimentation, because experimentation and observation was the core of their discipline. Oliver Wendell Holmes, Sr, while most famous for his fictional *Breakfast Table* series, also published a series of medical essays, including a scathing essay criticizing the popular practice of homeopathy. In “Homeopathy and It's Kindred Delusions,” Holmes writes “If the new doctrine is not truth, it is a dangerous, a deadly error.”<sup>102</sup> The rest of the essays in the series possess a similar criticism of the popular medical disciplines for which Holmes felt that there was not sufficient demonstrable evidence. Similar criticism of theories and treatments accepted without sufficient supporting evidence can be seen in the writings of the other anatomists who serve as the major figures of this study, William Horner and Charles Knowlton. This chapter argues that anatomists had a vested interest in promoting empirical science, more than practicing physicians did. This was because the ideas of empirical science gave weight to their anatomical research. In the early nineteenth century, anatomical research gave rise to new diagnostic techniques. It was more beneficial to practicing physicians to continue

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<sup>101</sup> In this chapter, 'empiricism' is used to mean the use of experimentation and the evidence it provides as a means to support a scientific or medical theory.

<sup>102</sup> Oliver Wendell Holmes, Sr., “Homeopathy and it's Kindred Delusions,” *Medical Essays, 1842-1883* (Boston: Houghton, Mifflin, and Co.1895,) 39.

to use the medical theories that they already practiced, rather than adopting new theories, as these new diagnostic techniques did not offer new treatments. Therefore, they were not as invested in promoting empirical science and research.

Empiricism concerned the physicians and anatomists of early nineteenth century America, as various new, non-standard medical disciplines flourished in the United States during this period. Referred to as 'sectarian' medicine, these new disciplines alarmed both anatomist and practicing regular physicians alike, as these new disciplines threatened both their conceptions of the proper way to practice medicine, as well as threatening their financial livelihoods. Sectarrians, particularly homeopaths, claimed that their treatments were supported by evidence based on observation. However, anatomists and practicing physicians argued that the Sectarrians' experiments were ill-conceived, as their observations did not take into account all of the possible causes of a patient's symptoms, instead assuming that changes in symptoms were caused by their treatments. They also criticized sectarians for supporting treatments which were based on the evidence provided by only one, or a very few cases. On the other hand, anatomists frequently supported theories which were supported by observations based on larger data sets. American practicing physicians of the early nineteenth century continued to use medical theories which had not been subjected to empirical experimentation.

*Sectarian Medicine in Early Nineteenth Century America:*

In the nineteenth century, Americans divided medical practice into two different categories, regular medicine, and sectarian medicine. The number of sectarian disciplines

multiplied drastically during this period. Such disciplines included homeopathy, chiropractics, and Thomsonianism, which emphasized the use of botanical ingredients to treat illness and injury. These disciplines, and others like them have frequently been referred to as sectarian medicine. Referring to these non-standard disciplines in this way is problematic for a number of reasons. The word “sectarian” most often has a negative connotation, as it has been used in politics and religion to refer to groups who follow the tenets of a “false doctrine.”<sup>103</sup> Homeopaths, Thomsonians, disciples of similar disciplines preferred to refer to themselves as members of the “new” or “reformed” school, while referring practitioners of regular medicine as members of the “old” or “majority” school.<sup>104</sup> Samuel Hahnemann, the founder of homeopathy, also coined the term “allopathy” to refer to the practice of regular physicians. The prefix 'allo' derives from the Greek word meaning 'other.' Allopathy was meant to be a derogatory term for regular medicine, in response to the regular's use of the term “sectarian.” However, following the example of other authors in the field, this paper shall use the terms 'sectarian' and 'regular' medicine (the terms preferred by the regulars) in order to distinguish these groups of physicians from each other, for the sake of clarity. Although the non-standard disciplines utilized differing theories, their strong commonalities in opposing what they saw as the growing power and exploitation of the regular physicians allows us to refer to them as a cohesive group. Thomsonianism and homeopathy are treated at length in this chapter because these two disciplines caused the most consternation among anatomists and

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<sup>103</sup> Norman Gevitz, “Sectarian Medicine” *Journal of the American Medical Association* 257 no. 12 (1987): 1636.

<sup>104</sup> Norman Gevitz, “Sectarian Medicine,” 1636.

practicing physicians of regular medicine.

It is important to distinguish sectarian medicine from traditions of folk medicine, as it was sectarian medicine in particular, and not folk or traditional medicine at which anatomists and regular physicians took aim. Medical and social historian Norman Gevitz proposes that sectarian medicine differed from folk medicine in that, while folk medicine was usually part of an oral tradition which its proponents believe cannot be scientifically tested, and yet remain effective, proponents of disciplines of sectarian medicine, like Thomsonianism and homeopathy do claim that their practices and theories will stand up to scientific testing. Sectarian medicine also seeks to parallel all of the services provided by regular medicine, and find the same areas of study, such as anatomy, physiology, pathology, and chemistry, to be essential to the training of their practitioners, although they come to different conclusions than regular physicians in their studies of these subjects.<sup>105</sup> However, David Hufford suggests that folk medicine is any medical system which is at odds with whatever system is considered 'official' in a local context.<sup>106</sup> In this definition, he is including both the sort of traditional treatments that Gevitz included in his definition of folk medicine, and all disciplines of sectarian medicine. However, Hufford distinguishes between two categories of folk medicine: 'rational' folk medicine, which would include disciplines such as homeopathy and chiropractics, and 'non-rational' folk medicine, which would include traditions such as religious healing.<sup>107</sup> These two

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<sup>105</sup> Norman Gevitz, "Sectarian Medicine," 1636.

<sup>106</sup> David Huffman, "Contemporary Folk Medicine," *Other Healers: Unorthodox Medicine in America*, ed. Norman Gevitz (Baltimore: Johns Hopkins University Press, 1988): 229.

<sup>107</sup> David Huffman, "Contemporary Folk Medicine," 255.

definitions of folk medicine in nineteenth century America both distinguish between sectarian medical disciplines and other traditional but non-orthodox remedies.

Practitioners of non-standard medical disciplines attempted to mirror the structures and institutions which supported regular medicine as well, and created their own schools, as well as publishing discipline specific journals, such as the *Boston True Thomsonian*. One can see why a nineteenth century anatomist or regular physician might have considered sectarian practitioners a threat.. A non-standard practice which claimed to be scientifically rigorous might more readily influence the uninitiated public into accepting their practice as respectable. Regular physicians and anatomists believed that, if the public were swayed by sectarian disciplines, then their adherence to ineffective sectarian treatments might prevent them from seeking necessary and potentially life saving treatment from the regular medical establishment. If this eventuality had come to pass, it would have created problems for regular practitioners in both the ethical and the financial arenas. However, while sectarian medicine did flourish in nineteenth century America, it does not appear to have had a significant impact on the stability of the institutions of regular medicine.

Disciplines such as homeopathy and Thomsonianism appealed to the common man's sense of independence, allowing him to treat himself without consulting the medical elite. It has been proposed that these new disciplines emerged because of the emphasis on self-sufficiency and democracy prevalent in Jacksonian America.<sup>108</sup> Many felt that members of the medical profession were creating a new elite class, a sort of new

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<sup>108</sup> Anita Fellman and Michael Fellman, *Making Sense of Self: Medical Advice Literature in Nineteenth Century America*, (Philadelphia: University of Philadelphia Press, 1981) 7.

aristocracy. Further evidence of this inclination to self treatment in medical matters can be seen in the proliferation of medical advice literature which was published for use by the average person. As Thomsonianism and homeopathy were two of the most popular sectarian disciplines, they deserve to be examined more closely, in brief, in an attempt to discover what made them so popular among early nineteenth century Americans.

Homeopathy is of particular interest, as it was the discipline which inspired the most reaction among practitioners of regular medicine, and among anatomists in particular.

Thomsonianism as a discipline illustrates the trend for distrust of the established medical field and the popularity of self treatment. Samuel Thomson developed his system of medicine in the first decade of the nineteenth century, after being dissatisfied with the treatment that he and his family members received at the hands of regular physicians. Thomson recounts his life's story and his development of Thomsonianism in his book, *New Guide to Health: or Botanic Family Physician*. After several illnesses suffered by himself, his wife, and his children, Thomson came to believe that the treatments of regular medicine, such as bleedings and the administration of powerful medicines, caused more harm to patients than good. According to Thomson's system, all disease was the product of a lack of heat in the body. Thomson therefore objected to standard treatments on the grounds that they did not compensate for this lack of heat. Bleeding, for example, increased cold in the body by removing blood and heat. The administration of mineral compounds used by allopathic physicians increased cold in the internal organs, and moves heat to the skin producing a fever. In his *New Guide to Health*, Thomson writes:

The consequence [ of administering 'physic'] is that perspiration ceases, because internal heat is the sole cause of this important evacuation; and a settled fever



takes place, which will continue as long as the cold keeps the upper hand. My experience has taught me that by giving hot medicine, the internal heat was increased and by applying the steam externally, the natural perspiration was restored, and by giving medicine to clear the stomach and bowels from canker, till the cold is driven out and the heat returns, which is the turn of the fever, they will recover the digestive powers, so that food will keep the heat where it naturally belongs, which is the fuel that continues the fire or life of man.<sup>109</sup>

In order to restore the proper balance of heat to the body, Thomson prescribed a variety of natural remedies. The most popular included the application of steam, the use of Lobelia, which was an emetic, as well as cayenne pepper. Thomson never prescribed any remedies made of mineral compounds, as he believed that these compounds were aligned with the element of 'earth,' which would increase cold in the body. The influence of Thomsonianism began to wane in the middle of the period covered by this study, in the 1830s. The decline of Thomsonianism has been attributed to the decline the democratic ideals of Jacksonian America, which emphasized literacy, education, and self-sufficiency. As these ideals were replaced by an emphasis on progress, Thomsoniansim declined and was replaced by new sectarian disciplines which aligned themselves with the language of progress.<sup>110</sup> Jacksonian ideas concerning the importance of self-sufficiency and independence are important to our study of empiricism because they influence who was considered to have the authority to practice medicine, or propose new medical theories and treatments. A proponent of the Jacksonian idea of self-sufficiency would have felt his own observations enough to propose and utilize his own medical treatments. The decline

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<sup>109</sup> Samuel Thomson, *New Guide to Health: Or Botanic Family Physician* (Brockville: Wm. Buell Jr and Co., 1831) 32.

<sup>110</sup> Michael A Flannery, "The Early Botanical Medical Movement in as a Reflection of Life, Liberty, and Literacy in Jacksonian America." *Journal of the American Medical Association* 90 no. 4 (2002): 452.

of the Jacksonian ideal of self-sufficiency led to a decline of confidence in the authority on which disciplines such as Thompsonianism were based.

Contemporaneous with the decline of Thomsonianism, the practice of homeopathy was gaining followers in the first half of the nineteenth century<sup>111</sup>. The discipline of homeopathy was founded by Samuel Hahnemann, a German physician. Hahnemann was first educated as a regular physician, and held an MD from the University of Erlangen. Hahnemann, who thought that some of the treatments practiced by regular physicians, such as bloodletting, could be disadvantageous, or even dangerous to the patient, began to search for an alternative. While experimenting with cinchona bark, which contains quinine and was used to successfully treat malaria, Hahnemann noticed that the bark produced in a healthy person symptoms similar to that of the disease it was being used to treat. From this, Hahnemann extrapolated the doctrine of *similia similibus*, that like cures like. Hahnemann first published his findings in an article in 1796. *Similia similibus*, along with dilution, the practice of dissolving a miniscule amount of the intended curative substance in water, were to become the cornerstones of homeopathy.

Homeopathy was carried to the United States by German and Swiss immigrants. Dr. William Wesehoefts, originally from Germany, and Dr. Henry Detwiller, originally from Switzerland, are considered to have been the first homeopathic practitioners in the

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<sup>111</sup> Much of the history of homeopathy in the United States has concentrated on the conflict between homeopaths and practitioners of regular medicine. This includes Martin Kaufman's 1971 book, *Homeopathy in America: The Rise and Fall of a Medical Heresy*, published by Johns Hopkins University Press, and Natalie Robins 2005 book, *Copeland's Cure: Homeopathy and the Between Conventional and Alternative Medicine*, published by Knopf. More recent works include John Haller's *The History of American Homeopathy: From Rational Medicine to Holistic Health Care*. Kaufman's *Homeopathy in America* appears to be the seminal work on the history of homeopathy.

United States. Both set up their respective practices in eastern Pennsylvania. is considered to have been first practiced in the United States by Dr. William Wessehoeft, a German immigrant, and Dr. Henry Detwiller, a Swiss immigrant, both of whom practiced in eastern Pennsylvania. Homeopathy became popular among the German immigrant community. The world's first school of homeopathy opened in Allentown, Pennsylvania, in 1835.<sup>112</sup> Homeopathy was quickly attacked by regular physicians, who doubted the efficacy of its therapies. Regular physicians found the dilutions used by homeopaths to be particularly problematic, as a solution diluted to the degree recommended by Hahnemann was unlikely to contain even a single molecule of the active agent which was intended to cure the patient's disease. Holmes writes: "Is there not in this [the practice of dilution] as great an exception to all the hitherto received laws of nature as in the miracle of the loaves and fishes?"<sup>113</sup>, indicating that Holmes believes that it would require a miracle of biblical proportions for the preparations of homeopaths to be effective, given their level of dilutions, would require a miracle. Holmes publicly argued against disciplines such as homeopathy because their theories went against the observable evidence of natural laws. He considered that sectarian theories were not supported by sufficient experimental evidence.

Advice literature was another component of popular medicine in the early half of the nineteenth century. This trend, which was a product of the public's desire for self

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<sup>112</sup> P. Thomas, "Homeopathy in the USA," *British Homeopathic Journal* 90 (2001) 99.  
Martin Kaufman, "Homeopathy in America: The Rise and Fall and Persistence of a Medical Heresy." *Other Healers: Unorthodox Medicine in America*, ed. Norman Gevitz, (Baltimore: Johns Hopkins University Press, 1990) 101.

<sup>113</sup> Oliver Wendell Holmes, Sr., "Homeopathy and Its Kindred Delusions," 54.

sufficiency and distrust of the medical establishment, which many felt were forming themselves into an elite class or pseudo-aristocracy, was also strongly influenced by sectarian medicine.<sup>114</sup> Samuel Thomson's *New Guide to Health: or Botanic Family Physician* was published in the 1820s, and paved the way for the publication of other domestic advice manuals, which were designed to allow the public to treat their ailments themselves, without the aid of a professional physician. Anita and Michael Fellman, writing on the early nineteenth century explosion of self-help medical manuals, write that “the first generation of popular health reformers, inheritors of both Enlightenment and evangelical legacies, asserted that the laws of nature, established by a benevolent God, would soon be discovered in toto by truly rational, faithful individuals. As a consequence, ill health and perhaps even death would be eliminated.”<sup>115</sup> This perhaps explains why so many branches of sectarian medicine were so keen to claim that they had found the singular cause of all disease, such as Thomson's assertion that all disease was a product of the body being too cold, while Hahnemann claimed that all disease was a manifestation of the psora, or itch.

Thomsonianism and homeopathy were popular with different segments of the population. Thomsonianism, with its emphasis on self treatment, was most popular with rural populations who may have lacked access to more conventional medical treatment. Homeopathy was popular with a larger segment of the population, including both the rural and urban working classes, and even the some members of the educated urban upper

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<sup>114</sup> Anita Fellman and Michael Fellman, *Making Sense of Self*, 7.

<sup>115</sup> Anita Fellman and Michael Fellman, *Making Sense of Self*, 5.

classes.<sup>116</sup> Because of its popularity, and because homeopathic practitioners frequently began their careers in regular medicine, homeopathy presented more of a threat to the regulars than Thompsonianism. While homeopathy may not have destabilized the regular medical tradition, the regular medical establishments' reactions to homeopathy influenced ideas about medical licensing and education. Horner, Knowlton, and particularly Holmes demonstrated the anatomical field's distrust of sectarian medicine in their public writings

*Practicing Physicians on Empiricism and Sectarian Medicine:*

In seeking to compare the views of anatomists to those of practicing physicians concerning the disciplines which composed American sectarian medicine of the nineteenth century, one runs into a problem of identities. Where as in our previous chapter, it was fairly simple to distinguish anatomists from practicing physicians, and to then analyze their religious views or lack thereof, here the waters become much muddier, making it more difficult to distinguish practicing physicians of the regular profession from sectarian practitioners. Sectarian medicine, unlike religion, is not a thing which is separate from the medical field. Many practitioners of sectarian medical disciplines started their careers as regular physicians. And not all sectarian physicians adhered to their chosen discipline with cultish fanaticism. Instead, many saw their duty to their patients as more important than adhering to or obtaining evidence for their chosen discipline. Therefore, many did not hesitate to use orthodox medicines and methods in treating their patients when they felt that such were called for.<sup>117</sup> Such physicians might

<sup>116</sup> Norman Gevitz, "Three Perspectives on Unorthodox Medicine," *Other Healers: Unorthodox Medicine in America* ed. Norman Gevitz, (Baltimore: Johns Hopkins University Press, 1988) 14.

<sup>117</sup> Norman Gevitz, "Sectarian Medicine," *Journal of the American Medical Association* 257 no. 12 (1987):

be considered part of the “eclectic” movement in medicine, whose practitioners used whatever remedies they found to be beneficial to their patients, whether these treatments originated in regular or sectarian medicine. Holmes offered his predictions on physicians who dabbled in sectarian medicine in his “Homeopathy and its Kindred Delusions,” supposing that “The semi-Homeopathic practitioner will gradually withdraw from the rotten half of his business and try to make the public forget his connection with it.”<sup>118</sup>

However, there was certainly a conflict between those practitioners who subscribed solely to regular medicine, and those who in any way practiced sectarian medicine. The American Medical Association, founded in 1847, included a clause in their charter which prohibited members of the association from calling upon sectarian practitioners for consultations. Chapter two, article three of the AMA's 1847 code reads:

In consultations, the good the patient is the sole object in view, and this is often dependent on a personal confidence, no intelligent regular practitioner, who has license to practice from some medical board of known and acknowledged respectability, recognized by this association, and who is in, good moral and professional standing in the place in which he resides, should be fastidiously excluded from fellowship, or his aid refused in consultation when it is requested by the patient. But no one can be considered a regular practitioner, or a fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology, and organic chemistry.<sup>119</sup>

This clause demonstrates the way in which the American Medical Association used licensing as a mechanism to hinder the work of sectarian practitioners (those 'whose

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1638.

<sup>118</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions.” 99.

<sup>119</sup> *Code of Medical Ethics of the American Medical Association: Originally Adopted at the Adjourned Meeting of the National Medical Convention in Philadelphia, May 1847.* (Chicago: American Medical Association Press, 1847) 100

practice is based on an exclusive dogma,” and discouraged association members from consulting with them and thereby lending them legitimacy. This clause is also intriguing, as the first of the 'aids' which the American Medical Association claims that sectarian practitioners lack is anatomy. As many homeopaths began their careers in regular medicine, many who choose to pursue homeopathy after 1847, the date of the American Medical Association's code of ethics, had been granted licenses by the AMA. This led to an unresolved debate over whether regular physicians who adopted homeopathy should be allowed to keep their licenses.<sup>120</sup>

All of this creates an odd intersection between the practitioners of sectarian medicine, the practitioners of regular medicine, and the non-practicing anatomists. Anatomist agreed with the argument of some sectarians that treatments of regular medicine, particularly those of the lineage of 'heroic' medicine, including bleedings and purgings could be harmful to the patient, as is demonstrated by Holmes' writings in his “Currents and Counter Currents in Medical Science”. However, anatomists also agreed with practitioners of regular medicine that sectarian medicine could also be dangerous for patients, as seeking the aid of practitioners of sectarian medicine might prevent the patient from receiving effective treatment. Thus, as Holmes demonstrated in his speeches, he felt that all proposed medical theories needed to be supported by experimental evidence. Theories and doctrines which were not thus supported were to be considered dangerous.

Regular physicians attempted to oppose practitioners of sectarian disciplines

<sup>120</sup> Martin Kaufman, “Homeopathy in America: The Rise and Fall and Persistence of a Medical Heresy,” *Other Healers: Unorthodox Medicine in America* ed. Norman Gevitz (Baltimore: Johns Hopkins University Press, 1988) 104.

from insinuating themselves into mainstream public consciousness both in order to protect the public and to protect their own livelihood. Both of these views are represented in an article published in the *American Medical Intelligencer* in 1842. The *American Medical Intelligencer* was a collection of important medical literature which had been published in the United States, and covered five volumes. The compilation appears to have first appeared in 1838. Here, New York Medical Society presents their arguments against a petition put before the state legislature by Thomsonian practitioners, requesting that Thomsonian practitioners be able to sue in court to recover unpaid fees. At the time this article was written in 1842, this particular privilege was only granted to physicians who met the state's qualifications for licensure. Thomsonians, educated at the State Thompsonian Society, did not meet these qualifications. The regular physicians whose views are expressed in this article are concerned, because the state legislature in Michigan had recently passed a similar law, which would allow non-standard practitioners to sue for non-payment of fees. The physicians writing for the *American Medical Intelligencer* write that:

“The circumstance, indeed, that a legislature has granted such privileges and immunities to a class of uninformed individuals, merely because they support a preposterous doctrine- if doctrine it can be called – exhibits, that there is a sad lack of knowledge and discretion amongst those who ought to be the representatives of the better intelligence of the community.”<sup>121</sup>

The regular physicians are here suggesting that the members of the state legislature are supposed to be the 'better intelligence of community,' and imply that, if they were, in fact, living up to that title, they would support the regular physicians and uphold the licensure

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“Thomsonianism in Michigan and New York,” *American Medical Intelligencer* 1 (1842): 219.



laws which prohibited unlicensed practitioners from suing to collect fees. The regular physicians also argue that, if the Thomsonians are truly practicing a scientifically rigorous medical discipline, they would have no qualms about complying with the licensing laws already in place. The regular physicians claim that:

The present laws regulating the practice of physic and surgery are doubtless designed to encourage the cultivation of science, to guard against the evils of ignorance in that most responsible profession which has the charge of the public health, and to secure to the people that guaranty of safety which is afforded in the assurance, that he who is authorized to practice medicine has at least devoted a reasonable time in acquiring a knowledge of his profession, and has submitted to the ordeal of an examination of his qualifications, by an authorized and competent tribunal.<sup>122</sup>

In these comments, the regular physicians demonstrate that they are opposed to Thomsonians, or other sectarian practitioners, from being granted legal privileges, as sectarian practitioners do not conform to what they believe to be 'good' medical practice. The statement about 'guarding against the evils of ignorance' is particularly interesting, as it implies that regular physicians feel that if sectarian practitioners were properly educated, they would cease to advocate for the treatments prescribed by sectarian disciplines. As demonstrated by these legal arguments, Horner, Knowlton, and Holmes were not the only members of the medical community to have qualms about the soundness of sectarian disciplines and the qualifications of their practitioners.

*Anatomists on Empiricism and Sectarian Medicine:*

Anatomists were aware of the emerging disciplines of sectarian medicine. They

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<sup>122</sup>

“Thomsonianism in Michigan and New York,” 219.

found the theories of sectarian disciplines to be problematic on a scientific level, and felt that it was their ethical obligation to inform the public that they were being fleeced by sectarian practitioners. Anatomists had a vested interest in promoting medical theories which had been subjected to empirical experimentation and observation, because this gave value to their own work and research. Sectarian disciplines were particularly dangerous, as they claimed scientific legitimacy, and anatomists (and practicing physicians) were concerned that this would be enough to convince the public. Anatomists argued that sectarian practitioners did not have evidence which conformed to empirical standards. Early nineteenth century American anatomists proved themselves to be a distinct group in their strong support of empirical research. Practicing physicians were more threatened by the competition that sectarians posed, while anatomists argued against sectarians on the grounds of their research methods.

Oliver Wendell Holmes was of course not the only American anatomist to write on the medical trends of his day, and the importance of truth or empiricism in medicine. Charles Knowlton was also deeply invested in presenting the public with all available information on medical matter, particularly when he felt that information was being withheld from the public in order to support the agenda of any certain group.

While anatomist Charles Knowlton did not write any works specifically denouncing non-standard medical practices, both his philosophical and medical works indicate that Knowlton was invested in empiricism, that is, in having the evidence of the senses to support his philosophical and medical assertions. This is clearly seen in his *Two Remarkable Lectures* in which Knowlton explains the connection, or more accurately,

lack thereof, between the nervous system, sensation, and God. Knowlton's writings on this topic have been discussed in more detail previously in this study, but essentially, Knowlton finds that the concept of an immaterial God is illogical, as one cannot have thought without sensation, and one cannot have sensation without something physically acting upon the nerves. (According to Knowlton's conception, one could not have a thought about a thing, without having experienced it sensorially in the past. For example, one could not imagine a blue sky, if one had never before seen the color blue.) I would suggest that this ties in with the intellectual history of empiricism as something for which one must have the evidence of the senses.

Knowlton's writings also take an empirical turn in his most well known work, *Fruits of Philosophy*. *Fruits of Philosophy* is widely credited as being the first manual on contraception written and published in the United States. Knowlton, explaining his reason for publishing this then-controversial work, writes:

“I hold the following to be important and undeniable truths; That every man has a natural right both to receive and convey a knowledge of all the facts and discoveries of every art and science, excepting such only as may be secured to some particular person or persons by copyright or pate (*sic*); that a physical truth in its general effect cannot be a moral evil; that no fact in physics or in morals ought to be concealed from the inquiring mind.”<sup>123</sup>

In this particular case, Knowlton is speaking specifically about providing the public with access to knowledge about reproductive health, claiming that if this public had access to this information it would not led to immorality, but would instead benefit society by reducing the numbers of the population. Knowlton feels that the public will be able to

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<sup>123</sup> Charles Knowlton, *Fruits of Philosophy: A Treatise on the Population Question*. (San Francisco: The Reader's Library, 1891): 26.

make responsible and reasonable choices if they are only provided with all available information. In his advocacy for the spreading of truthful information, Knowlton's writing bears a striking similarity to that of Oliver Wendell Holmes, Sr, in that they both had faith in the public to make logical decisions about their healthcare, which they assumed would lead them to regular medicine, if only they were provided with all of the available and relevant information.

Holmes was probably the most vocal of the opponents of non-standard medical disciplines. His most scathing critique of sectarian medicine, and the most frequently cited of his medical essays is Holmes' "Homeopathy and its Kindred Delusions." This essay originally began as two lectures, which were delivered before the Boston Society for the Diffusion of Useful Knowledge in 1842.

In the first lecture, Holmes compares homeopathy to past medical theories which were considered disproven and had fallen out of practice by the 1840s. Holmes selected for discussion the use of the royal touch to cure Scrofula in medieval England, the use of 'weapon ointment' and 'sympathetic powder' to cure wounds<sup>124</sup>, the use of 'tar water' as a cure, and the doctrine of Perkinism, Perkinism, invented by Dr. Elisha Perkins, involved drawing a pair of metal rods, one of brass, and the other of iron, over the affected part of the body in order to affect a cure. These instruments were known as Perkinian "Tractors." Holmes points out that, given the materials out of which the tractors were made, they were ridiculously over-valued, selling for five guineas. (Holmes claims that

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<sup>124</sup> 'Weapon Ointment' was a formula applied to the weapon which had inflicted a wound in order to cure it, and 'Sympathetic Powder,' was applied to the clothes or someone who was ill or injured to affect a cure. Sympathetic powder purported to be able to cure even across distances.

they were only worth ninepence.<sup>125</sup>) Holmes spends the majority of the first lecture comparing the arguments in favor of Perkinism, noting how similar they are to the arguments used in favor of homeopathy. Physicians began to doubt the efficacy of Perkins tractors soon after Perkins death in 1799. In 1803, author Thomas Fessenden published a satirical poem titled “Terrible Tractoration,” which Holmes quotes in his discussion. By the time of Holmes' lecture in the 1840s, Perkinism was widely considered disproven and subject to ridicule. The failure of Perkinism would have been known to Holmes' audience, and would have added an additional element to Holmes' strong critique of homeopathy.

Perkinism, Holmes states, like homeopathy, faced objection from regular practitioners. Proponents of Perkinism argued that of course regular physicians couldn't be expected to recommend Perkinism, as if patients could cure themselves by purchasing and using the tractors, then physicians would lose their livelihood. Proponents of Perkinism also attempted to support their assertions as to the effectiveness of Perkinian tractors through 'evidence,' publishing lists of cases which they claimed that the application of tractors had cured. Holmes finds this to be an unconvincing argument, as some patients of Perkinism are likely to improve simply due to the effects of nature, as application of Perkinian tractors was unlikely to make their condition worse. (Holmes, it will be remembered, was a proponent of the *vis medicatrix naturae*, the healing power of nature.)

One of the interesting things about Holmes' examination of the rhetoric of

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<sup>125</sup>

Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 22.

Perkinism is that he states that “the vast majority of the sensible part of the medical profession were contented, so far as we can judge, to let it die out by itself,”<sup>126</sup> as well as pointing out that “it may be questioned whether they [subscribers to Perkinsim] would at that time have changed their opinion though one had risen from the dead to assure them that it was an error.”<sup>127</sup> If this is the case, one wonders why Holmes has taken it upon himself to give these lectures pronouncing against homeopathy. Perhaps this is evidence of the combative and argumentative nature frequently found among members of the anatomist's sub-culture in early nineteenth century America. Interestingly, Perkinsim itself did die out, after the deaths of its founder Elisha Perkins in 1799, and his son, Benjamin in 1810. In 1799, Dr. John Haygarth conducted tests, in which he proved that patients responded the same when treated with Perkinian metallic tractors, or a pair of tractors made of wood.<sup>128</sup> Haygarth published his findings in *On the Imagination as a Cause and a Cure of Disorders of the Body*.<sup>129</sup>

In his first lecture, Holmes used the example of Perkinism to demonstrate the tricks of rhetoric which homeopaths, and Perkinians before them had used to defend their disciplines to the public, against the criticisms of the regular medical profession. He demonstrates that the arguments of homeopaths are remarkably similar to those that Perkinians made before them, indicating that their claims in support of their discipline

<sup>126</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 36.

<sup>127</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 36.

<sup>128</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 36.

<sup>129</sup> John Haygarth. *Of the imagination, as a cause and as a cure of disorders of the body; exemplified by Fictitious Tractors, and Epidemical Convulsions. ``decipimur Specie." Hor. Read to the Literary and Philosophical Society of Bath. By John Haygarth, M. D. F. R. S. Lond. and Edinb. Of the Royal Medical Society at Edinburgh, and of the American Academy of Arts and Sciences. Bath: R. Cutwell, 1800. Eighteenth Century Collections Online.*

are likely equally baseless. In his second lecture, Holmes takes on the task of examining the doctrines of homeopathy itself, saying that he intends to treat the subject of homeopathy “not by ridicule, but by argument, perhaps with great freedom, but with good temper and in peaceable language, with very little hope of reclaiming converts, with no desire of making enemies, but with a firm belief that its pretensions and assertions cannot stand before a single hour of calm investigation.”<sup>130</sup> In all fairness, Dr. Holmes does not quite keep his word on this matter, and occasionally appears not to have been able to resist the temptation to ridicule the doctrines of homeopathy. Despite the fact that Holmes is not able to restrain his condescension for the homeopaths, he bases his critiques of homeopaths on logic and enlightenment, empirical science. Thus, Holmes is showing that homeopaths, and by extension, other sectarian disciplines, are not conducting their scientific research properly.

Holmes turns his attacks on the doctrines of homeopathy itself, seeking to disprove homeopathy's three main tenets: *similia similibus curantor* (like cures like), that dilution increases the potency of homeopathic remedies, and the doctrine of the psora, Hahnemann's assertion that all diseases which afflict humankind are just variations on the 'itch.' Holmes draws his arguments against homeopathy's doctrines from the application of logic. He points out that the doctrine of *similia similibus curantor* is not entirely unreasonable, as certain treatments in regular medicine do in fact produce symptoms in their patients similar to those of the disease they are meant to cure. However, Holmes disagrees with the homeopaths' assertion that this should be the main law on which

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Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 39.

medicine is based. He explains that:

“Improbable though it may seem to some, there is no essential absurdity involved in the proposition that diseases yield to remedies capable of producing like symptoms. There are, on the other hand, some analogies which lend a degree of plausibility to the statement. There are well-ascertained facts, known from the earliest periods of medicine, showing that, under certain circumstances, the very medicine which, from its known effects, one would expect to aggravate the disease, may contribute to its relief. I may be permitted to allude, in the most general way, to the case in which the spontaneous efforts of an overtaken stomach are quieted by the agency of a drug which that organ refuses to entertain upon any terms. But that every cure ever performed by medicine should have been founded upon this principle, although without the knowledge of a physician; that the Homoeopathic axiom is, as Hahnemann asserts, "the sole law of nature in therapeutics," a law of which nothing more than a transient glimpse ever presented itself to the innumerable host of medical observers, is a dogma of such sweeping extent, and pregnant novelty, that it demands a corresponding breadth and depth of unquestionable facts to cover its vast pretensions.”<sup>131</sup>

Holmes believes that the doctrine of *similia similibus curantor* is over-reaching. Just because some diseases can be mitigated with substances which produce similar symptoms, Holmes does not believe this to be the case with every disease. And, of course, that Holmes refers to *similia similibus curantor* as homeopathic 'pretensions' indicates how little regard he had for homeopathic theories.

After a lengthy description of the way in which homeopaths prepare their greatly diluted remedies, Holmes explains that dilutions do not, in fact, hold the curative powers that homeopaths claim, as it is illogical to think that the strength of a curative's powers increase as the amount of the substance decreases. Indeed, in most homeopathic preparations are diluted to such a degree that there is unlikely to be a single molecule of the active substance present in the dose consumed by the patient. Holmes argues against the homeopaths' faith in their dilutions by pointing out:

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<sup>131</sup>

Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 51-52.



Yet this is given only at the quadrillionth, or fourth degree of potency, and various substances are frequently administered at the decillionth or tenth degree, and occasionally at still higher attenuations with professed medicinal results. Is there not in this as great an exception to all the hitherto received laws of nature as in the miracle of the loaves and fishes? Ask this question of a Homoeopathist, and he will answer by referring to the effects produced by a very minute portion of vaccine matter, or the extraordinary diffusion of odors. But the vaccine matter is one of those substances called morbid poisons, of which it is a peculiar character to multiply themselves, when introduced into the system, as a seed does in the soil.<sup>132</sup>

Homeopathic dilutions, according to Holmes, do not contain the same properties as vaccine matter, which would allow them to multiply their effective properties. Holmes also points out that the belief held by many homeopaths that taking an inert substance, such as the shell of an oyster, and subjecting it to the process of dilution will imbue the substance with curative powers is similarly illogical.<sup>133</sup> Holmes' argument against homeopaths is that observation with the senses, the key element of empirical science, is not the only element to medical research, but that one must take measures to make sure that one knows what caused the effects that one is observing. Homeopaths failed to do this, and therefore the theories which they espouse are not sound.

Holmes also takes issue with the evidence provided by homeopaths for the effectiveness of their treatments. After administering once dose of a treatment to a patient, the homeopathic physician would record all minute sensations experienced by the patient for a rather lengthy period of time. Holmes describes this practice for his audience, stating that, “According to Hahnemann, the action of a single dose of the size mentioned does not fully display itself in some cases until twenty-four or even thirty days

<sup>132</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 54

<sup>133</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 47.

after it is taken, and in such instances has not exhausted its good effect until towards the fortieth or fiftieth day, --before which time it would be absurd and injurious to administer a new remedy.”<sup>134</sup> Since, for this extended period of time, the physician records every time the patient sleeps, winks, or has an itch on their hand, Holmes suggests that very few of these are related to the effects of the administered homeopathic remedy, and are instead the “common accidents of sensation.”<sup>135</sup>

As for the homeopaths' third doctrine, that of the psora, Holmes devotes little time to attempting to disprove this doctrine, rather writing that “the doctrine of the origin of most chronic diseases in Psora, notwithstanding Hahnemann says it cost him twelve years of study and research to establish the fact and its practical consequences, has met with great neglect and even opposition from very many of his own disciples.”<sup>136</sup> If homeopaths themselves do not subscribe to the doctrine of the psora, the Holmes does not need to worry about convincing his audience of the invalidity of this doctrine. Hahnemann's research was not empirically sound, and Holmes is suggesting that, if homeopathic practitioners themselves find the doctrine of the psora to be unsound, perhaps they should reexamine the evidence which has been used to support other homeopathic doctrines.

Holmes predicts that homeopathy will suffer the same fate as other sectarian disciplines before it, writing that “the semi-Homeopathic practitioner gradually withdraw from the rotten half of his business and try to make the public forget his connection with

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<sup>134</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions.” 47.

<sup>135</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 59.

<sup>136</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 49.

it.”<sup>137</sup> Oliver Wendell Holmes was more or less correct in this assertion, as, after the introduction and adoption of homeopathy in the United States, homeopathic practitioners quickly began to stray from the doctrines offered by Hahnemann, offering their patient homeopathic remedies in less dilute concentrations than those dictated by Hahnemann, as well as offering the remedies of regular medicine.<sup>138</sup>

The above demonstrates the criticisms of homeopathy and sectarian medicine which Holmes offered in his public speeches and writings. However, it was not only the anatomists and the regulars who were skeptical of the practices of the sectarians. Sectarian practitioners also questioned the theories and treatments which regular physicians offered to their patients. Homeopaths criticized allopathic (or regular) practitioners, claiming that they were ignoring evidence that their own treatments were harmful to their patients. Homeopaths argued that 'allopaths' were more interested in preserving their source of income than they were providing the best treatment for their patients. In an article published by the *Boston True Thomsonian* in 1843 titled “Thomsonianism Versus Regularism,” the pro-Thomsonian author provides an allegory demonstrating a doctor's continued use of the harmful treatments of regular medicine, despite being aware of the treatments harmful effects, as well as illustrating the doctor's fear of being discovered when the people of his town start reading literature on medical reform. The townspeople are all gathered about at a party, recounting how they had all benefited from the treatments of Dr. M.D. And Dr. Leech. One woman wonders:

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<sup>137</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 58.

<sup>138</sup> Norman Gevitz, “Sectarian Medicine,” *Journal of the American Medical Association* 257 no. 12 (1987) 1637

'What must have become of me in all my sickness,' said Mrs. Cripple, 'without calomel? Why I should not now be alive.' 'and would you believe it, interrupted Mrs. Afterwit, 'Some are foolish enough to think that is what has occasioned your present lameness; but I always knew the doctor called it a fever sore.' The doctor coughed and bit his lip.<sup>139</sup>

Calomel, it should be noted was a name used for the chemical compound mercury chloride. This allegorical story is attempting to demonstrate that the diseases which afflict the townspeople could have been cured without the use of harmful calomel, that Dr. M.D.'s administration of calomel has in fact caused more harm than good. When one of the townspeople ask the doctor if patients might be cured without “subjecting the patient to consequences even worse than the disease,”<sup>140</sup> The doctor assures her that this is not possible, and reads aloud from an article railing against Thomsonian treatments until it is time for his guests to depart, so that he cannot be contradicted. In this article, the Thomsonians portray practitioners of regular medicine as unethically promoting harmful treatments in order to save their pride and their financial livelihood.

The volumes of the “Materia Medica” of homeopathy produced by homeopathic physicians are particularly interesting evidence of homeopaths adopting the structures used by regular practitioners in order to try and establish their legitimacy. Samuel Hahnemann published his *Pure Materia Medica* in 1810, a work which contained the pharmacopeia of homeopathy<sup>141</sup>. “Materia Medica” was the branch of nineteenth century medicine which concerned itself with therapeutics and treatments, and could be most closely compared to modern pharmacology. This work, and others like it, demonstrates

<sup>139</sup> “Thomsonianism Versus Regularism,” *Boston True Thomsonian*, 3 no. 10 (1843) 149.

<sup>140</sup> “Thomsonianism Versus Regularism,” 149.

<sup>141</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 41.

the difference between strands of sectarian medicine and folk medicine, mentioned above. In his *Pure Materia Medica*, Hahnemann is both attempting to displace standard medicine by claiming that the remedies contained in their volumes of materia medica were erroneous, and also attempting to prove the legitimacy of his own discipline of homeopathy by adopting the forms of regular medicine in publishing his own 'materia medica.'

Despite mimicking the institutions of regular medicine in order to lend themselves legitimacy by, for example, creating volumes of homeopathic materia medica, sectarians did not gain the respect they sought, their remedies being continuously scrutinized by regulars. A particularly interesting aspect of Holmes' critiques of homeopathy is the emphasis he places on the importance of experimentation. Namely, although homeopathic doctors were claiming that they had conducted experiments, the results of which served as supporting evidence for their claims, Holmes takes issue with the rigor of these so called experiments. Holmes asks, speaking to homeopaths in particular, and any who would offer a new medical theory in general, "have you submitted the doctrines you are professing to examine to the test of long-repeated and careful experiment; have you tried to see whether they were true or not?"<sup>142</sup> While the homeopaths might say that they had, in fact done so, Holmes appears to disagree, pointing out that the homeopaths, while they had written down every sensation felt by their patient after taking a homeopathic remedy, had made no attempt to be sure that the patients sensations were actually the result of the remedy. Holmes offers as evidence the experiments of Dr. Andral, "a Professor of

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Oliver Wendell Holmes, "Homeopathy and its Kindred Delusions," 41.

Medicine in the School in Paris.” Andral experimented with several of the most common homeopathic remedies. Holmes tells us that “ His experiments lasted a year, and he stated publicly to the Academy of Medicine that they never produced the slightest appearance of the symptoms attributed to them.”<sup>143</sup> He also cites the experiments of M. Double, who, “had occasion so long ago as 1801, before he had heard of Homoeopathy, to make experiments upon Cinchona, or Peruvian bark. He and several others took the drug in every kind of dose for four months, and the fever it is pretended by Hahnemann to excite never was produced.”<sup>144</sup> The key element of these experiments mentioned by Holmes which differentiates them from those which homeopaths conducted to prove the effectiveness of their treatments is that homeopaths' experiments only considered evidence from one or two cases. Andral studied homeopathic remedies for a year before offering his conclusions, while Double persuaded several individuals over a period of four months to dose themselves with calomel, before they concluding that it did not act as Hahnemann claimed. Holmes points out that the difference between the 'experiments' conducted by homeopathic practitioners and Andral and Double is that Andral and Double had much more data to work with, lending more weight to their conclusions than the experiments produced by the homeopathic practitioners themselves.

Holmes stipulates “that nothing but the strictest agreement of the most cautious experimenters, secured by every guaranty that they were honest and faithful, appealing to repeated experiments in public, with every precaution to guard against error, and with the most plain and peremptory results, should induce us to lend any credence to such

<sup>143</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 61.

<sup>144</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 61.

pretensions,”<sup>145</sup> as are offered by homeopathy and other new sectarian disciplines. It seems that Holmes would have held physicians of the regular school, as well as anatomists, to the same standards that he criticizes the homeopaths of ignoring. In his “Currents and Counter-currents in Medical Science,” Holmes writes:

“A medical man, as he goes about his daily business after twenty years of practice, is apt to suppose that he treats his patients according to the teachings of his experience. No doubt this is true to some extent; to what extent depending much on the qualities of the individual. But it is easy to prove that the prescriptions of even wise physicians are very commonly founded on something quite different from experience. Experience much be based on the permanent facts of nature.”<sup>146</sup>

Holmes seems to be implying that even regular physicians need to occasionally reexamine their practice, and not continue to treat patients as they had always done, merely out of tradition. Holmes continues his critique to explain why medical treatments are not always in alignment with the “permanent facts of nature.” Holmes claims that:

“The truth is, that medicine, professedly founded on observation, is as sensitive to outside influences, political, religious, philosophical, imaginative, as is the barometer to the changes of atmospheric density. Theoretically it ought to go on its own straightforward inductive path, without changes of government or to fluctuations of public opinion.”<sup>147</sup>

But, as Holmes goes on to explain, it doesn't. In his view, both the practitioners of the regular school who continue to offer their patients heroic treatments, and those practitioners who have been convinced by new sectarian disciplines such as homeopathy, are reacting to the intellectual trends of the day. This trend, according to Holmes is the “observing and computing mind of the nineteenth century,” which believes

<sup>145</sup> Oliver Wendell Holmes, “Homeopathy and its Kindred Delusions,” 50.

<sup>146</sup> Oliver Wendell Holmes, “Currents and Counter-Currents in Medical Science.” *Medical Essays 1842-1882*, (Boston: Houghton, Mifflin, and Co., 1895) 175.

<sup>147</sup> Oliver Wendell Holmes, “Currents and Counter-currents in Medical Science.” 177.

that it can reduce the entirety of the world to laws and averages.<sup>148</sup>

In discussing Holmes' critiques of sectarian medicine in terms of empiricism, it is fair to say that, while he does not use the word 'empiricism' in his writings, Holmes was invested in the philosophical and scientific methods of finding truth. In "Currents and Counter-currents of Medical Science, Holmes writes that, "Such are some of the eddies in which we are liable to become involved and carried back out of the broad stream of philosophical, or, in other words, truth-loving, investigations."<sup>149</sup> Holmes also comments on the place of observation in science and medicine, writing that "A pretty strong eddy, then, or rather many eddies, setting constantly back from the current of sober observation of nature, in the direction of old superstitions and fancies, of exploded theories, of old ways of making money, which are very slow to pass out of fashion."<sup>150</sup> This statement demonstrates that Holmes found "sober observation" to be the way to progress, which "superstitions and fancies" were likely to set science and society backwards. This is Holmes' central argument in this essay, which is Holmes' attempt to convince his fellow medical men to reexamine their practices to assure that there are concurrent with the 'permanent facts of nature' and not unduly influenced by the fashions of the day.

*The French Connection:*

As mentioned in the previous chapter one of the factors which differentiated

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<sup>148</sup> Oliver Wendell Holmes, "Currents and Counter-currents in Medical Science." 180.

<sup>149</sup> Oliver Wendell Holmes, "Currents and Counter-currents in Medical Science," 190.

<sup>150</sup> Oliver Wendell Holmes, "Currents and Counter-currents in Medical Science," 191.



anatomists from their colleagues who were practicing physicians was their training. A great many American anatomists were influenced by the innovations in teaching and research which were occurring in France during the period, which influenced their ideas about medicine and science. Exposure to the Paris teaching hospitals of the nineteenth century gave anatomists the experiential knowledge which is so necessary in empiricism. Having conducted their own dissections, and followed well known physicians on their rounds, nineteenth century anatomists believed from experience that their views were the most scientifically advanced and correct. Anatomists and physicians who studied in Paris, or were influenced by imported French ideas no longer held with the traditional treatments of 'heroic' medicine, but also found the treatments proposed by new 'sectarian' disciplines to be equally nonsensical. (Heroic practitioners, and those subscribing to the new theories originating in the Paris hospital system would have both been considered part of the 'regular' or 'allopathic' establishment.)

Anatomists faced different professional circumstances than practicing physicians, however, which allowed them to might subscribe to the theory which they believed to be most scientifically sound, because they did not have to contend with the treatment of patients. Anatomical research and technological developments, such as the invention of the stethoscope, led during this period to the development of new diagnostic techniques. However, new treatments which could work in conjunction with these new diagnostic techniques were not developed until the late nineteenth century. Practicing physicians were faced with patients who wished for their doctor to *do* something in order to cure whatever condition they suffered from. Having no superior alternatives, and wishing to

satisfy their patients, regular physicians continued to use the old techniques of heroic medicine. Anatomists, on the other hand, criticized them for this, without providing them with suggestions for alternative methods of treatment.

Practicing physicians did not immediately adopt the ideas and theories which were being imported from France, and were less inclined to do so than anatomists. There were several reasons for this. For one, although new techniques were being developed which allowed physicians to more accurately diagnose their patients, there were not similar advancements in treatments and therapeutics until the end of the nineteenth century. Another, and connected reason, was because attempting to apply the new French medical theories such as the *Vis Medicatrix Naturae* adopted by Oliver Wendell Holmes, Sr, could actually be detrimental to their practice, as patients wished for something to be *done* to help ease their condition. Thus, the practices of heroic medicine, such as bleedings and purgings through the use of emetics remained popular, as well as new kinds of medicine, such as the Thomsonian practice of using botanicals for treatment of illnesses were of more use to practicing physicians than theories such as the *vis medicatrix naturae*. Holmes explains this phenomenon in his essays “Currents and Counter-currents in Medical Science.” Attempting to point out to his audience some of the trends in practices of the days which Holmes believes to be detrimental to progress, Holmes blames the superstitions about disease and medical treatment which have remained in the public mind long after they have been disproven. In explaining how this leads to physicians treating their patients with medicines or therapeutic practices such as bleedings, Holmes writes that “one of the most ancient [superstitions] is, that disease is a

malignant agency, or entity, to be driven out of the body by offensive substances, as the smoke of the fish's heart and liver drove the devil out of Tobit's bridal chamber, according to the Apocrypha."<sup>151</sup> If Holmes is to be believed, this 'superstition' explains the popularity of prescribing substances such calomel among regular physicians, as well as the homeopaths' assertion that substances which produced a certain set of symptoms in those that ingested them would cure the disease with a similar set of symptoms. Holmes is offering the intriguing opinion that regular physicians were nearly as guilty as sectarian practitioners of using empirically unsound medical treatments.

*Conclusion:*

Interaction with sectarian medicine in the early nineteenth century illuminates the relationship between anatomists and practicing physicians of regular medicine during the period. Both regular physicians and anatomists found sectarian disciplines to be problematic. While American anatomists of the nineteenth century were closely aligned with their colleagues who practiced what has come to be known as 'regular medicine' in treating their patients, anatomists still formed a distinct group from these regular colleagues, as many of the regulars continued to practice heroic medicine, with which anatomists, particularly those of the French school, were prone to disagree. The main cause of division here between anatomists and regular practicing physicians is the experience of treating patients. There is much more of a blurring of divisions between practicing regular physicians and homeopathic practitioners, and both frequently utilized

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<sup>151</sup> Oliver Wendell Holmes, Sr. "Currents and Counter-currents in Medical Science." 187.

the treatments of the other. Anatomists, on the other hand, had very little sympathy for sectarian philosophies and treatments. Anatomists were able to conceptualize medicine as theoretical, which practicing physicians had to balance their own theories about medicine and disease against their patient's desire that they *do* something to threat their condition. The final chapter will further discuss the distinction between anatomists and their colleagues among the practicing physicians of regular medicine, and demonstrate the attempts of nineteenth century American anatomists to legitimize their profession, arguing for the necessity of the practice of dissection to developing successful medical treatments.

## Chapter Four: Anatomists and Professionalism

### *Introduction:*

In 1831, William Horner, professor of Anatomy at the University of Pennsylvania gave the annual introductory lecture for a course on anatomy. In his speech, Horner described the early history of the medical school, focusing in large part on the previous professors of anatomy, Dr. William Shippen and Dr. Caspar Wistar. Upon the conclusion of his lecture, Horner stated, “In this sketch has been exhibited the mirror of professional history, by which every spectator may be taught what he ought to attempt.”<sup>152</sup>

One of the major reasons for which anatomists formed their own subculture separate from that of practicing physicians was that anatomists faced a larger challenge than practicing physicians in proving the necessity and legitimacy of their profession. While early nineteenth century America experienced a trend of distrust of established physicians and a turn towards self-treatment of disease and injury, the idea of consulting a professional, even if he did practice a sectarian medical discipline, was still widely accepted.<sup>153</sup> However, many members of the public, who had moral and quasi-religious objections to dissection, argued that the study of anatomy through human dissection was distasteful and unnecessary. Anatomists of the early nineteenth century used their public rhetoric to attempt to prove that their professional pursuits were, in fact, useful and necessary. The writings of Horner, Knowlton, and Holmes demonstrate the ways in which they attempted to alter the dialogue on anatomy, demonstrating the importance to

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<sup>152</sup> William Horner. *Introductory Lecture to a Course of Anatomy in the University of Pennsylvania*. (Philadelphia: J. G. Auner, 1831) 24.

<sup>153</sup> Anita Fellman and Michael Fellman, *Making Sense of Self: Medical Advice Literature in Late Nineteenth Century America* (Philadelphia: University of Pennsylvania Press, 1981) 19.

anatomical study and research to the medical community and to the general public.<sup>154</sup>

In response to public concerns about the propriety of the practice of studying anatomy through human dissection, and conflicts with other members of the medical community, who placed less emphasis on the study of anatomy as a necessity for a physician, American anatomists of the early nineteenth century began to professionalize, attempting to reform their public image, in order to be viewed as scientists, rather than disrespectful grave robbers, and to emphasize their discipline's importance to the rest of the medical community by working within new educational reforms which made anatomy an essential item of the curriculum of medical schools which wished to appear credible.

The most well known writer who discusses the subject of anatomists and professionalization is Michael Sappol, who in his 2002 book, *A Traffic of Dead Bodies: Anatomy and Embodied Social Identity in Nineteenth Century America*, argues that the study of anatomy was a marker of professional identity for all American medical men of the early nineteenth century.<sup>155</sup> Sappol claims that, by performing dissections, the medical student or practitioner was demonstrating his power over death, and that this served as an induction into a cult of medical knowledge. This argument does not take

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<sup>154</sup> For more on the professionalization of medicine in America, see: Paul Starr, *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry*. New York: Basic Books, Inc, 1982. See also John Duffy, *The Rise of the Medical Establishment*. New York: McGraw Hill Book Co., 1976. As well as William Rothstein, *American Physicians in the 19<sup>th</sup> Century: From Sects to Science*. Baltimore: Johns Hopkins University Press, 1985.

For more on the professionalization and its relationship to medical education, see Kenneth Ludmerer, *Learning to Heal: The Development of American Medical Education*. Baltimore: Johns Hopkins University Press, 1985.

<sup>155</sup> Michael Sappol, *A Traffic of Dead Bodies: Anatomy and Embodied Social Identity in Nineteenth Century America* (Princeton: Princeton University Press, 2002) 3.

into account the evident distinction between those physicians who treated patients and those who were professional researchers and instructors. The later career path was, although not the most common choice, increasingly becoming an option during this period.<sup>156</sup> Where Sappol is arguing that anatomists contributed to the formation of an American professional medical identity, meaning the professionalization of the entire medical class, including both researchers and practicing physicians, this chapter argues that American anatomists of the early nineteenth century were obligated to define their own professional identity as anatomists, and separate from other medical practitioners, in an attempt to prove the legitimacy of their profession to the public and to other medical practitioners.

The professionalization of the American medical profession at large, (rather than the anatomists in particular) has been discussed by several other prominent authors. In *Learning to Heal: The Development of American Medical Education*, Kenneth Ludmerer discussed the transformation of the American system of medical education from a system which was largely based on apprenticeship, to the rise of rudimentary American medical schools in the late eighteenth and nineteenth centuries, to the debate over regulation of American medical schools and the need for licensing.<sup>157</sup> It is this discussion about the state of American medical education in the early nineteenth century and the conflict between medical schools where were associated with respected universities and those which were private academies which is most most relevant to this current study, as one of

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<sup>156</sup> Kenneth M. Ludmerer, *Learning to Heal: The Development of American Medical Education*. (Baltimore: Johns Hopkins University Press, 1985,) 41.

<sup>157</sup> Kenneth M. Ludmerer, *Learning to Heal*, 24-28.

the ways in which University medical schools attempted to set themselves apart as superior was in their ability to teach anatomy through dissection. Private medical schools, often called 'proprietary' schools, were operated for profit by physicians, often as supplementary source of income for these physicians, in addition to their work treating patients. The facilities for these proprietary schools were often rudimentary at best, and their curriculum consisted entirely of courses of lectures. A student could graduate from one of these proprietary schools with a degree in medicine without ever having seen a patient, or performed a dissection. The rapid expansion of the number of proprietary schools operating in the United States in the early nineteenth century was a cause for concern among the medical community, as it created doubt about the competency of physicians holding degrees from proprietary schools.

In part as a response to this dilemma, the American Medical Association was founded in 1847, and worked with medical educators to establish guidelines for what a student must study to obtain a medical license. The institution of licensing for physicians was a way to combat the poor education of proprietary schools, because while the American Medical Association could not prevent proprietary schools from issuing diplomas, they could refuse to grant licenses to those graduates who did not meet their standards, as was the case with graduates from Thomsonian medical schools in the 1840s. Medical schools associated with universities were in favor of licensure and education reforms, as their superior facilities made it more practical to implement suggested curriculum reforms. University medical school usually were able to teach anatomy by dissection, although frequently the students did not have the chance to perform the



dissection themselves, instead observing the work of a designated 'demonstrator,' while the professor of anatomy explained the demonstrator's work.

Ludmerer also writes on how attempts to reform medical education in the United States led to a change in the way knowledge was treated, "Knowledge," writes Ludmerer, "was no longer seen as a fixed body of dogma but as something that grows and evolves...Medical scientists, like scholars in all fields, were charged with the same new mission: to discover knowledge, not merely to conserve it."<sup>158</sup> This trend can also be seen in an examination of the way in which American anatomists attempted to create a professional image for themselves in early nineteenth century America. Anatomists answered their opponents objections with the argument that the practice of human dissection, while distasteful, did indeed create knowledge which in turn would be beneficial to society at large.

*Public Objections to the Practice of Dissection:*

The public at large was frequently uncomfortable with the practice of human dissection. This was a result both of the anatomists' own actions, as well as the result of long held cultural beliefs about the body and propriety. The majority of the public believed that having one's remains subjected to dissection was disgraceful. However, there was no theological barrier to dissection, and anatomists decried objections to their work on the basis of impropriety to be due to mere superstition.<sup>159</sup>

One of the largest objections the public had to the study of anatomy through

<sup>158</sup> Kenneth Ludmerer, *Learning to Heal*, 40.

<sup>159</sup> Michael Sappol, *A Traffic of Dead Bodies*, 3.

dissection was the ways in which anatomists obtained their subjects for study. Due to a widespread distaste for allowing oneself or one's relatives to be dissected, anatomists frequently sourced their subjects from a variety of unsavory places. These included the bodies of executed prisoners, and unclaimed bodies from workhouses, and hospitals. As even these did not provide enough material, anatomists and their students frequently turned to resurrection, the practice of removing corpses from their graves, either by the students themselves or by 'resurrection men' who sold the corpses for a hefty profit. Anatomists believed that dissection was essential in order for new physicians to learn how most effectively to practice medicine, as well as being necessary for research, and the creation of more effective diagnostic and therapeutic techniques, and that therefore these ends justified the means<sup>160</sup>.

The methods which anatomists used to obtain their material, even those which fell within the law, faced strong opposition from the public. While one would think that it would be difficult to object to the anatomizing of executed criminals, reformers objected to this practice on the grounds that this practice would cause distress to their surviving family members. Survivors had already faced the ignominy of having their relative executed for a serious crime. Having their family member then subjected to dissection was seen by opponents to be unduly traumatic. While the institution of anatomy acts which made the dissection of executed criminals legal, were intended to be a deterrent to criminals, it was argued that it was rather, in fact, a punishment against the victim's families, who in fact, were not the guilty party. (There is evidence, that while perhaps the

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<sup>160</sup> Suzanne M. Shultz, *Body Snatching: The Robbing of Graves for the Education of Physicians in Early Nineteenth Century America*. (Proper citation to come if I ever get the book from ILL.)

added sentence of dissection did not deter crime, it did have an effect on criminals when they were informed of their sentence. A highwayman who was sentenced to be executed in Boston in 1788 wrote describing his fear of dissection, saying “my knees smote together and my tongue seemed to cleave to the roof of my mouth.” Another criminal, sentenced to be executed in 1791, claimed that it was fear of the anatomist's scalpel, rather than fear of death, that prompted an ineffective escape attempt.<sup>161</sup>

The objection to using unclaimed bodies from hospitals and workhouses was that anatomy acts which legalized this practice essentially conflated the poor with the criminal element of society, due to the connection between execution and dissection. The members of the Massachusetts Medical Society addressed this confusion when they wrote their “Address to the Community on the Necessity of Legalizing the Study of Anatomy,” in which the Massachusetts Medical Society argued in favor of the proposed Massachusetts Anatomy Act which would provide anatomists with additional legal sources of material, including the bodies of those who died in poorhouses or hospitals and were not claimed by family or friends. In discussing the debate over legalization of this practice, the Massachusetts Medical Society acknowledge the connection between dissection and criminality in the public mind and admits that “it is not desirable to attach an odium to dissection, and make it appear as if it were part of the punishment of the crime of the individual.”<sup>162</sup> However, the members of the Massachusetts Medical Society do not feel that this is a significant reason to dismiss the proposed act, arguing

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<sup>161</sup> Stephen Wilf. “Anatomy and Punishment in Late Eighteenth Century New York,” *Journal of Social History* 22 no. 3 (1989): 509.

<sup>162</sup> “Address to the Community on the Necessity of Legalizing the Study of Anatomy. By Order of the Massachusetts Medical Society.” *The North American Review* 32 no. 70 (1831) 70.

“that in our country, few will become so poor as to depend on the public bounty who do not bring their poverty on themselves by their vices; and that we have as much right to dispose of their bodies at their decease, as we have to determine how they shall be provided for while living; as that, for example, they shall live in buildings of a particular description, be furnished with brown bread instead of white, and sleep on straw instead of feathers.”<sup>163</sup> Of course, it is possible that statements like this coming from the medical community only contributed to the idea held by some members of the public that members of the regular medical community were attempting to set themselves up as a class of elites. The poor and middle classes were unconvinced of the necessity or utility of the provisions of the anatomy acts which allowed the dissection of unclaimed individuals, questioning the right of the legislature to dictate what happened to these individuals after their death.

The arguments made by the Massachusetts Medical Society in favor of legalizing the practice of using the unclaimed bodies of the poor as anatomical material, that those who would be subject to dissection under this bill had only become poor through their own vices, fits into a larger intellectual trends concerning how society should be structured. Thomas Malthus first published his *Essay on the Principle of Population* in 1798. In this essay, Malthus argues against laws which offer relief to the poor, as these laws upset the natural checks which are designed to keep the human population under control. Malthus also argues that the constant threats of starvation and poverty are intended to encourage man to better himself and his situation, writing that “had

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<sup>163</sup>

“Address to the Community on the Necessity of Legalizing the Study of Anatomy,” 70.

population and food increased in the same ratio, it is probable that man might never have emerged from the savage state."<sup>164</sup> Malthus' ideas influenced Darwin's work on the development of the theory of natural selection, published in his 1859 *Origin of Species*. Darwin's work would be later adopted theories concerning human society in the theory of Social Darwinism. Anatomy acts which suggested using the unclaimed bodies of the poor are also connected to an idea which was prevalent at the time, that the poor were inherently sinful. This is reflected by the Massachusetts Medical Society's *Address to the Community on the Necessity of Legalizing the Study of Anatomy*, in their assertion that the poor were poor because of their own fault.<sup>165</sup>

Even after the passage of anatomy acts which provided anatomists with an increased supply of cadavers from unclaimed inmates of hospitals and workhouses in the majority of states, the cadavers sources from prisoners and the unclaimed deceased of the hospitals and workhouses were not enough to supply the needs of the country's medical students. They were forced to turn to illegal sources of procuring cadavers, namely, resurrection. Other than the fact that it was obviously illegal, one objections to the practice of resurrection was that it was predominantly the marginalized classes of society whose remains found their way to the dissecting table. This was because mostly because of burial location. Those with means were buried in church yards, which were frequently guarded, and attempts to rob the graves of these cemeteries would have led to outrage among the community of that church. Paupers and African Americans, on the other hand,

<sup>164</sup> Thomas Malthus. *Malthus- Population: The First Essay*. (Ann Arbor: University of Michigan Press, 1959) 127.

<sup>165</sup> *Address to the Community on the Necessity of Legalizing the Study of Anatomy*. By Order of the Massachusetts Medical Society. Boston: Perkins and Marvin, 1829.

were buried in the Pottersfield cemetery, where they had neither guards, nor an organized community to advocate for them. In 1788, the free black community in New York city organized to ask the city to prevent medical students from taking bodies from Pottersfield. They proposed that instead, anatomists should be permitted to dissect the bodies of criminals.<sup>166</sup> In the American south, anatomical subjects were frequently African American. In cities of the north, the ranks of anatomical subjects also included impoverished Irish immigrants. Evidence for the ethnic demographics of nineteenth century Anatomical subjects can be found in the collections of skeletal remains still held by some medical institutions and universities.<sup>167</sup>

Opposition to dissection, and resurrection in particular often erupted into violence in the first half of the nineteenth century. As mentioned previously, so called 'anatomy riots' were a fairly common occurrence. Sappol finds that between 1785 and 1855, there were no fewer than seventeen such riots, as well as more minor outbreaks of violence.<sup>168</sup> William Horner described for his students some of the violence against the school that took place in the early years of the University of Pennsylvania, during the tenure of his predecessor, Dr. William Shippen. Horner writes:

“Having thus started, it is not to be understood, that the lectures proceeded without occasional interruptions from popular indignation; for the city being small, almost everyone knew what was going on in it. The house was frequently stoned, and the windows broken, and on one occasion Dr. Shippen's life was put into imminent danger. The public mind continually in an inflammable state, created doubt whether the teaching of anatomy could be continued; hence the

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<sup>166</sup> Robert Wilf “Anatomy and Punishment in Late Eighteenth-Century New York,” 511.

<sup>167</sup> Kenneth Nystrom. “Postmortem Examinations and the Embodiment of Inequality in the Nineteenth Century United States.” *The International Journal of Paleopathology* 1 (2011) 166.

<sup>168</sup> Michael Sappol, *A Traffic of Dead Bodies*, 4

actual accommodations for demonstrating and dissecting were very insufficient, and the students themselves had to perform the part of resurrectionists.<sup>169</sup>

What is particularly interesting here is Horner mentioning the students performing the part of resurrectionists. One assumes that the violence against the university had something to do with the procurement of anatomical material, and that the school was unable to get their cadavers from their usual sources.

Of course, while anatomists argued that dissection was a necessary evil which would benefit the public by producing new medical knowledge and better medical practitioners, the public still had reason to doubt the professed noble objectives of the anatomists, as stories circulated about the disrespect with which anatomical students treated their cadavers. The inciting incident of the New York Doctor's riot of 1788 is one of the most famous examples. According to a Colonel William Heth, a participant in the events who helped to quell the riot, the incident began when the people of New York discovered that the remains of several prominent members of society had been resurrected and dissected. These included “a very handsome and much esteemed young lady of good connections.”<sup>170</sup> However, according to other accounts, the inciting incident of the riot was when a medical student waved the arm of a cadaver at a young boy whose mother had just died, in an attempt to scare him.<sup>171</sup> Clearly, the anatomical profession had a great deal to work against in attempting to make a respectable image for

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<sup>169</sup> William Horner. *Introductory Lecture to a Course of Anatomy in the University of Pennsylvania*. (Philadelphia: J.G. Auner, 1831) 11.

<sup>170</sup> William Heth, “Letter to Edmund Randolph, 1788” in Whitfield Bell, Jr., “Doctor's Riot, New York, 1788.” *Bulletin of the New York Academy of Medicine* 47 no. 12, (1971) 1502.

<sup>171</sup> Wilf “Anatomy and Punishment in Late Eighteenth-Century New York.” 512

themselves.

If anyone outside of the medical profession happened to read Charles Knowlton's autobiography when it was published in the *Boston Medical and Surgical Journal* in 1851, they would have been appalled by his description of the pranks the medical students played on their classmates. Some of the medical students took it upon themselves to use the bones, "human and various other," which were to be found in the basement of the medical school, and proceeded to use them to make a great deal of noise, knocking over boxes, and leaving the bones all strewn about so that the other students would think that the building was haunted. Their plan, apparently, was successful. Knowlton brags that he and his compatriots had managed to frighten not only their fellow medical students, but other members of the college as well.<sup>172</sup> This is an example of the sort of things that the average member of American society in the early nineteenth century was afraid of. While the remains used for dissection were supposed to be given a decent burial, this was most often not the case, and it would be easy for some to imagine their loved ones' remains, or even their own, mouldering in a medical school basement and becoming props in a student's ghoulish prank.

The public frequently held a view of anatomists as unscrupulous grave robbers who lacked respect for the human dignity of their subjects. This view is understandable, given the occurrence of the dissecting room pranks and hijinks such as those recorded as the inciting incident of the New York Doctor's riot of 1788, and those recorded in Charles Knowlton's autobiography from his days as a student at the medical school which would

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<sup>172</sup> Charles Knowlton and Stephen Tabor, "The Late Dr. Knowlton's Autobiography," *The Boston Medical and Surgical Journal*. 45 no. 8 (1851) 8.



become Dartmouth. One can see why members of the public would be keen on suggesting different methods by which medical students could gain knowledge of the structures of the human body.

Those opposed to the practice of dissection suggested various alternatives, such as the use of wax models. In 1827, French anatomist Louis Auzoux would begin producing what would become the most well known of these models. Now that such excellent anatomical models had been produced, what was the need for digging corpses from their graves, or unfairly placing the burden of dissection on the friendless poor? Anatomists were concerned by the proliferation of these models on several levels. Some anatomists were concerned that students would find the use of artificial models preferable to doing the work of dissection themselves. However, the anatomists found alternatives to be unsatisfactory, wax models, they argued, were no substitute for the knowledge gained by performing a dissection with one's own hands<sup>173</sup>.

Public objections to the practice of anatomy through dissection were well founded, given the previous behaviors of anatomists and their medical students. In response to this image, anatomists attempted to professionalize. This impulse towards professionalization can be seen in the public writings of Horner, Knowlton, and Holmes, as they fought to see anatomy included as a key element in the professionalization of the medical field at large.

*Anatomists on the Legitimacy of the Study of Anatomy:*

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<sup>173</sup> Ruth Richardson, *Death, Dissection, and the Destitute* (Chicago: University of Chicago Press, 1987) 104.

Anatomists argued staunchly for the legitimacy and necessity of their profession, claiming that anatomy did indeed provide benefits to the public, and that wax models and books were insufficient substitutes for the hands on knowledge gained by dissection. In order to improve the image of their profession, anatomists both attempted to prove the value of their work to the public, as well as to encourage their students to approach dissection with greater gravity and cease harming the image of their respective schools with their hijinks.

William Horner, Professor of anatomy at the University of Pennsylvania, who also contributed many prepared specimens to the Wistar Anatomical Museum, frequently addressed the subject of public opposition to anatomy and dissection in his annual introductory lectures, of which three survive. In his 1831 lecture, Horner states that:

“To these difficulties may be added the inveterate hostility with which all unimproved communities view the cultivation of anatomy by dissection. It is not our business at present to inquire whether this sentiment has a rational or a superstitious foundation, the fact equally remains in history, that mankind in all ages have felt it a sacrilege to violate in this way the bodies of the dead and in their penal enactments have placed it on a footing with the most atrocious crimes.”<sup>174</sup>

His use of the word 'unimproved' here is telling, as it reinforces the notion held by many nineteenth century American anatomists that bringing anatomical knowledge into the public sphere would have an improving effect upon society. They thought that pursuing scientific knowledge in this way was a sign of a civilized society not held back by superstition.

The lineage of the discipline of anatomy is an important theme in Horner's

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<sup>174</sup> William Horner. *Introductory Lecture to a Course of Anatomy in the University of Pennsylvania*. (Philadelphia: J. G. Auner, 1831) 7.

writings. In the remainder of his 1831 lecture, Horner recounted of the lives and work of the previous professors of anatomy at the University. This narrative bears an interesting similarity to historical genealogies and serves a similar purpose. This lecture is a plea to his students to take their work in the dissecting room seriously, by impressing upon them the illustrious lineage of the institution to which they belonged. He takes a similar approach in his surviving introductory lecture from 1843, rather than giving his students the lineage of the university, he gives them the lineage of the anatomical profession as a whole, going back to its origins in ancient times, as well as mentioning Vesalius, the great anatomist and author of *De Humani Corporis Fabrica*. According to Horner, the seventeenth century was the golden age of anatomy, seeing the work of such prominent members of the profession as Harvey, Asellius, Malpighi, Borelli, and Ruysch, who are, Horner claims, “the classical authorities of our profession, where we may look for the precious treasures of thought, of invention and of discovery.”<sup>175</sup>

Horner's admiration of Ruysch is particularly noteworthy, because of Ruysch's anatomical museum. Emphasis on the importance of anatomical museums appear several times in Horner's introductory lectures, perhaps because of the work which Horner put in to enlarging the anatomical collections of the University of Pennsylvania's Wistar Museum. Many of the specimens in this collection had been prepared by Horner's own hands.

Horner attempted to stress to his students the importance of the work in which they were involved, and the honor of the institution which was at stake, as well as the

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<sup>175</sup> William Horner, *Introductory Lecture before the Medical Class of the University of Pennsylvania Delivered Nov. 9, 1843* (Philadelphia: Merrihew and Thompson, Printers, 1843) 23.

importance of keeping the feelings of the lay public in mind. He specifically makes a nod at the Christian mentality which many feel contributed to the general public feeling against anatomy in his 1843 lecture, writing that “The Institutes and habits of Christianity, should always be treated with the most marked respect by physicians, notwithstanding we may deprecate the professional amalgamation just alluded to as injurious to both.”<sup>176</sup> Here, Horner is dealing with two separate issues which affected the professional image of the anatomical profession. He is saying that the religious views of the public must be respected, which would be of importance for the repairing of the public image of anatomy, however, the 'professional amalgamation' to which Horner alludes is the fact that, in the early years of the United States, physicians had served as doctors of the body, as well as of the soul. The practice was declining by the nineteenth century, as a system of formal medical education began to take shape in the United States, but was apparently still prevalent enough that Horner felt the need to warn his students against it.

Also in his 1843 lecture, Horner explains to his audience the various paths that the discipline of anatomy can follow, including comparative and pathological anatomy. Pathological anatomy, which specialized in the identification of defects in the anatomy which signaled particular diseases, was a specialty of Horner's. Horner writes;

“I have been induced to give this sketch because there may be among you persons who pursue medicine as a liberal, rather than a professional study, and by pointing out some of its numerous paths which lead to the highest grade of intellectual acquirement, I may possibly apply the first spark to the enthusiasm of an American Cuvier, or a Bichat.”<sup>177</sup>

<sup>176</sup> William Horner. *Introductory Lecture before the Medical Class of the University of Pennsylvania Delivered Nov. 9, 1843* (Philadelphia: Merrihew and Thompson Printers, 1843) 17

<sup>177</sup> William Horner. *Introductory Lecture before the Medical Class of the University of*

By 'liberal,' Horner implies that some of the university's students are studying medicine purely out of interest, or for their intellectual development and improvement, without the intention of going into practice. Those students who were making a 'professional' study can be assumed to have intended to use their medical degree in pursuit of a career in the field. What is particularly interesting here is that Horner is delivering this lecture not to a class of anatomy students, but to that year's entire medical class at large, and attempting to convince them of the usefulness and importance of anatomical study. It is striking that Horner was speaking to a class of future physicians, and yet felt that many of them might pursue medicine as a 'liberal rather than a professional study.' While Horner claims to be addressing the study of 'medicine,' he might have easily have used the word 'anatomy,' as both Cuvier and Bichat were anatomists. Horner here is trying to convince students who, most likely, will go on to be practicing physicians, or even not make a career of medicine at all, of the worth and importance of the study of anatomy. This instance shows an anatomist arguing for the necessity of the study of anatomy to other members of the medical community, and is representative of that same debate in the larger medical community, not just the setting of the University of Pennsylvania. By invoking the names of Cuvier and Bichat, Horner is encouraging his students to follow their model of scientific rigor and professionalism in the field of anatomy.

In addition to being a professor of anatomy, Doctor Horner was also known for his preserved anatomical preparations. Horner's contributions to the Wistar museum

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*Pennsylvania Delivered Nov. 9, 1843* .(Philadelphia: Merrihew and Thompson, Printers, 1843) 12.

constitute a considerable portion of his life's work, and of the museum's holdings in the first half of the nineteenth century. The contemporary debate about the anatomical museums, what sort of specimens should be housed in them, and who should be their audience embodies the debate over the merits of studying anatomy by dissection and the professionalization of the discipline. The museum was another arena where the debate over the proper place of anatomy in society played out.

While the previous two chapters of this study have argued that these three anatomists were quick to adopt new ideas which they encountered in France, or which were imported, the subject of anatomical museums shows a departure from this trend. English and American anatomical museums show a marked difference from those of France. The medical museums of France did not need to contain preserved specimens, as students had the wards of the Paris hospitals at their disposal, and plenty of material for dissection. Preserved specimens contained in French anatomical museums usually served to illustrate unique pathologies<sup>178</sup>. American anatomical museums, on the other hand, consisted mainly of prepared and preserved specimens, like the many prepared by Dr. Horner. These specimens were meant to be typical and to show normal variations in anatomical structures. This is a distinctly different practice from French anatomical museums, which generally kept preserved specimens only if they demonstrated a rare and unique pathology. This was because American medical students did not have the same access to material for dissection, and as such, specimens in American anatomical museums served to teach students the anatomy itself, as well as to demonstrate good

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<sup>178</sup> Constance Malpas, "Organizing Pathology: European and American Approaches to Medical Museology in the Nineteenth-Century." Philadelphia: Transactions of the College of Surgeons of Philadelphia, 22 (2000) 43.

surgical and dissecting technique. Some visitors to France were even concerned by the prevalence of models and replicas in anatomical museums, afraid that students would prefer using models to facing the horrors of the dissecting room.<sup>179</sup>

However, Horner, in discussing the museum founded by Wistar, proudly points out to his students the items in the collection that were imported. Among these items were drawings “executed by Rimsdyke, a distinguished artist of London, from dissections made by Jentry, an anatomist, and were occasionally superintended by Dr. William Hunger, in their progress.”<sup>180</sup> It is interesting that these prized drawings in the University of Pennsylvania's collection were from England, and that Horner emphasized the origins of the specimens from which the drawings had been made, giving the students, again, a lineage of the anatomists who had been involved in the project. This demonstrates again that Horner was attempting to use illustrious lineages to demonstrate to his students the legitimacy of the study of anatomy, and also demonstrates that the Wistar Collection was built in what Malpas terms the “Anglo-American” tradition of anatomical museums, rather than the French tradition.

Anatomical museums were, for Dr. Horner, clearly of importance, and a mark of distinction of the institution which created them. In addition to his discussion of Wistar's anatomical collection (which would become the anatomical museum of the University of Pennsylvania,) in his 1843 lecture, Horner describes two more distinguished collections for his students, that of Dr. Frederick Ruysch, a Dutch anatomist, and that of Dr. William

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<sup>179</sup> Constance Malpas. “Organizing Pathology,” 43.

<sup>180</sup> William Horner. *Introductory Lecture to a Course of Anatomy in the University of Pennsylvania*. (Philadelphia: J. G. Auner, 1831) 9.

Hunter, the famed founder of the Hunterian Museum in England. The Hunterian museum (more properly the museum of the Royal College of Surgeons of England), is still well known in medical circles today, holds such specimens in its collections as the skeleton of the 'Irish Giant,' Charles Byrne.

Ruysch was known for his skill in creating anatomical preparations which were able to withstand the ravages of time. In describing the Ruysch's anatomical preparations, Horner relates for his students an anecdote of the reaction of Peter the Great upon seeing Ruysch's collection in Holland:

“On his arrival in Holland, in 1698, he hastened to visit Ruysch's Museum, and was transported with admiration at the sight. History states that he kissed tenderly the body of a little child whose features had been preserved in all their loveliness, and who appeared to smile at him. To enjoy such a spectacle more at leisure, he frequently ate at Ruysch's.”<sup>181</sup>

Horner took a similar interest in the collections of John Hunter, writing that:

“John Hunter established a museum upon a scale of extent, variety, and neatness, which made it among the most valuable in Europe, to say nothing of his uncommon merits as a physiologist and pathologist. He was remarkably nice in his processes of injecting, dissecting, and putting up preparations, in which respects his cabinet was unique.”<sup>182</sup>

What is significant about these statements is Horner's interest in the care that both of these anatomists, Ruysch and Hunter, show in creating preparations for their museums. This shows that Horner was more involved in the Anglo-American tradition of anatomical museums, which centered around creating preserved specimens used to teach students anatomy, as well as demonstrate good surgical and dissecting technique, as

<sup>181</sup> William Horner. *Introductory Lecture Before the Medical Class of the University of Pennsylvania, Delivered Nov. 9, 1843.* (Philadelphia: Merrihew and Thompson, Printers, 1843) 21.

<sup>182</sup> William Hunter, *Introductory Lecture Before the Medical Class of the University of Pennsylvania, Delivered Nov. 9, 1843* (Philadelphia: Merrihew and Thompson, Printers, 1843) 23.



opposed to the French tradition of anatomical museums, which only displayed preserved specimens if they served to demonstrate a particularly interesting pathology.

Horner's statements about the work preparations of Ruysch and Hunter also demonstrate that Horner and his professional colleagues, did not view anatomical specimens as the product of the "horrors" of the dissecting theater. Horner's comments on Ruysch's preparations demonstrate that anatomy could be used to preserve the loveliness of a deceased child, while his remarks on Hunter's 'nice' preparations shows an appreciation for Hunter's skill in creating his specimens.

The creation of anatomical museums intended for an academic audience, and containing prepared and preserved specimens as opposed to the replicas used in museums and exhibitions intended for general, public audiences shows an attempt at professionalization on the part of American anatomists. The European collections upon which American anatomist modeled their collections are discernible from the remaining catalogs of these collections. Malpas, offers, for example, evidence that the collection of Caspar Wistar (which Horner worked with and contributed to,) was conceptually based on the collections of the Hunterian museum, while the collection Thomas Mutter was based on the collection of French anatomist, Gulliam Dupuyten, and William Osler's collection was modeled after that of German pathologist Rudolph Virchow.<sup>183</sup> Here, American anatomists were attempting to professionalize by creating intellectual connections between their own work, and that of the more established and respected

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<sup>183</sup> Malpas. "Organizing Pathology," 44.

European anatomical sub-culture.

Anatomical exhibitions also helped to prove that the study of anatomy provided knowledge which was useful to the general public. Members of the public were, frequently unwillingly, the ones who ended up on the dissection table. They wanted to see that anatomical studies, if they were to be carried out, provided some benefit to them. In response, some members of the medical community argued that anatomical knowledge would have an improving effect on the public. Anatomists argued that anatomical research and the knowledge gained from it was beneficial to the public because anatomical knowledge was liberating, especially for women, who would then be able to make informed decisions on their own reproductive health.<sup>184</sup> One result of this was anatomical museums and exhibitions aimed at the general public. These exhibitions predominantly featured models and replicas, and their proprietors were often denounced as 'quacks' by other members of the anatomical profession.

The public, however, appears to have accepted the idea of anatomical exhibitions providing useful and improving knowledge, as demonstrated by the newspaper advertisements which record several anatomical exhibitions from throughout the American Northeast in the early nineteenth century. One of the earliest was William's Anatomical Exhibition, which ran in Boston in 1818 and 1819, before traveling throughout the eastern United States during the 1820s. The exhibition displayed the private collection of a Boston artist by the surname of Williams, and consisted of wax anatomical models he had made. The exhibition was originally housed in the Scollay

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<sup>184</sup> Sappol, *A Traffic of Dead Bodies*, 6-7.

Buildings, before being moved to William's residence. Advertisements for Williams'

Anatomical exhibition appear in several local newspapers, including the *Boston*

*Intelligencer* and the *Columbian Centinel*. An advertisement of the exhibition from 1818

reads:

Open! Williams Anatomical Exhibition Removed to his house, no. 6 School Street, for the accommodation of those ladies and Gentlemen who have not had an opportunity of seeing them and having them explained.- They will be described by Mr. and Mrs. Williams, who will spare no pains to render it gratifying and intelligible. They will therefore avail themselves of the present opportunity of viewing the only and most scientific Exhibition ever offered to an enlightened public. There stay will be only four weeks, after which they will be removed to the Southern States. The Ladies and Gentlemen may rest assured there is nothing in this Exhibition that would offend the most delicate eye. Days of admittance for Ladies, Mondays, Tuesdays, Wednesdays, and Gentlemen, Thursdays, Fridays, and Saturdays. Admittance 25 cents. August 29. <sup>185</sup>

This advertisement reveals several interesting things about the exhibit. First, the separate days of admittance offered for ladies and gentlemen is indicative of Victorian morals, as it offered the assurance that “there is nothing in this Exhibition that would offend the most delicate eye.” The other significant aspect of Williams' Anatomical Exhibition is that Williams himself was not a member of the medical community, but an artist, who appears to have been well known for his portraits.<sup>186</sup> Despite Williams lack of medical credentials, advertisements referred to his exhibition as a “noble work” and “intrinsically worthy of attention.”<sup>187</sup> This reinforces the idea these exhibits were intended to have an improving effect upon their audiences. However, the nature of the exhibit, demonstrating

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<sup>185</sup> *Columbian Centinel* 3593 (1818) 4.

<sup>186</sup> *Boston Intelligencer* 37 no. 4 (1818) 3

<sup>187</sup> “Williams Anatomical Exhibition” *Columbian Centinel* 3691(1819) 2

*Columbian Centinel* 3548 (1818) 4

waxworks crafted by a non-physician, demonstrates the delineation between professional American anatomical exhibitions, displaying prepared specimens, and those put on by amateurs.

Another, and perhaps more well know anatomical exhibition of the period was Sarti's anatomical exhibition, which was held in Boston in 1850. Sarti's exhibition was also a collection of waxwork anatomical models, and like Williams' Anatomical exhibition, scheduled visitation for ladies and gentlemen on separate days. It was also billed as an improving educational experience. The *Boston Evening Transcript* writes that “the whole preaches a good sermon, most pure and touching for the heart of man.”<sup>188</sup> Interestingly, Sarti's exhibition had some support from the medical community, as it was also visited by renowned surgeon, Dr. John Warren, who preformed the first surgical procedure for which the patient was sedated by the use of ether. The *Boston Evening Transcript* records that Dr. Warren “expressed himself highly delighted with the correctness and beauty of the wonderful works before him.”<sup>189</sup> Sarti's exhibition was shown internationally, as revealed by a broadside advertising the exhibition in England. This broadside is also of note, as it reveals that Sarti's anatomical models were Florentine in origin, as opposed to those of Williams' exhibition, which were rather homemade.<sup>190</sup> Both Williams' and Sarti's anatomical exhibitions reinforce the idea that anatomical exhibitions intended for the general public displayed different objects, namely waxwork

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<sup>188</sup> *Boston Evening Transcript* 21 no. 6086 (1850) 1

<sup>189</sup> *Boston Evening Transcript* 21 no 6086 (1850) 2

<sup>190</sup> "Know Thyself: The Late Sarti's New Florentine Anatomical Model" (Advertisement)  
<http://www.sciencemuseum.org.uk/hommedia.ashx?id=7529&size=Large>

replicas, than those intended for a professional audience, which displayed preserved specimens demonstrating skill in surgery and dissection. Exposure to exhibitions of anatomical waxworks may have lead some members of the public to believe that dissection was no longer necessary as a teaching tool.

Anatomical museum exhibitions were not the only way that the public consumed information about anatomy. Mediums such as lectures and books were also used to disseminate knowledge. Public lectures demonstrating anatomical models were also popular. The *National Aegis* in 1844 advertised for a lecture to be held in Worcester,<sup>191</sup> Massachusetts. The lecture was conducted by a Dr. Cutter, who explained for his audience 100 anatomical plates, and two full size 'mannikins,' life sized anatomical models which could be taken apart to demonstrate the different systems. Unfortunately, the brief advertisement in the *National Aegis* does not offer any information on Dr. Cutter's qualifications, or the provenance of his anatomical models.

Books and pamphlets were a third way in which the public consumed anatomical knowledge. The writings of anatomist Charles Knowlton, particularly his *Fruits of Philosophy*, which is frequently credited as being the first contraceptive manual written and published in the United States, fits well into the strain of anatomists who felt that it was proper that the public be educated on the subject of anatomy in order to make their own informed medical decisions. In the introduction to his *Fruits of Philosophy*, Knowlton lays out three different reasons for writing and publishing his book. First, he claims that having the knowledge which he offers in *Fruits of Philosophy* will make the

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<sup>191</sup> *National Aegis* 9/25/1844 page 4.

reader more happy. Knowlton writes that:

“Owing to his ignorance, a man may not be able to gratify a desire without causing misery (wherefore it would be wrong for him to do it), but with knowledge of means to prevent this misery, he may so gratify it that more pleasure than pain will be the result of the act, in which cause the act, to say the least, is justifiable. Now, therefore, it is virtuous, nay, it is the *duty*, for him who has a knowledge of such means, to convey it to those who have it not, for by so doing he furthers the cause of human happiness.”<sup>192</sup>

Knowlton claimed that as an anatomist and physician, he had such knowledge, felt that it is his duty to share it. (And it was profitable for him to do so as well. Knowlton's first book, *Elements of Modern Materialism* sold terribly and nearly bankrupted Knowlton, as he had to pay the costs for the printing. *Fruits of Philosophy* was a much more successful work, and was frequently sold at meetings of Abner Kneeland's Society of Free Enquiry.<sup>193</sup>)

To Knowlton, also feels that this anatomical knowledge benefited not only his individual readers, but to society as a whole. This is one example of the ways that anatomist thought that anatomical knowledge could have an improving effect on the quality of life for large sections of the populace, particularly the poor and the working classes. Knowlton writes:

“Second – *In a social point of view* – is it not notorious that the families of the married often increase beyond what a regard for the young beings coming into the world of the happiness of those who give them birth, would dictate. In how many instances does the hard-working father and more especially the mother, of a poor family remain slaves throughout their lives, tugging at the oar of incessant labor, toiling to live and living to toil; when if their off spring had been limited to two or three only, they might have enjoyed comfort and comparative

<sup>192</sup> Knowlton. *Fruits of Philosophy*, 14.

<sup>193</sup> Roderick French, “Liberation from Man and God in Boston: Abner Kneeland's Free Thought Campaign,” *American Quarterly* 32 no. 2 (1980): 217.

affluence?”<sup>194</sup>

This is connected to Knowlton's other arguments in favor of disseminating anatomical knowledge: that knowledge of reproductive anatomy is beneficial because being able to limit the number of one's children will prevent hardships. This also connects to the argument proposed by Knowlton and others that anatomical knowledge is particularly liberating for women. Here, Knowlton is arguing that being able to limit the number of her children will prevent a woman from spending the entirety of her life raising them. (Of course, this is likely one of the reasons why Knowlton was such a controversial author, as statements like this were seen as a threat to the status quo.)

Secondly, Knowlton argued that the dissemination of anatomical knowledge specifically related to reproduction will benefit society, because this would prevent overpopulation and the myriad problems, such as famine and crime resulting from it. In

*Fruits of Philosophy*, he says:

“Some check then there must be, or the time will come when millions will be born but to suffer and perish for the necessities of life. To what an inconceivable amount of human misery would such a state of things give rise! ... Besides starvation, with all its accompanying evils, over population is attended with other public evils, of which may be mentioned, ignorance and slavery. Where the mass of the people must toil incessantly to obtain support, they must remain ignorant; and where ignorance prevails, tyranny reigns.”<sup>195</sup>

Knowlton's remarks here about tyranny are interesting. They seem to echo early socialist thought which suggested that those who had to spend their entire lives toiling for the means necessary for survival had no time to educate themselves, and were therefore

<sup>194</sup> Knowlton. *Fruits of Philosophy*. 20.

<sup>195</sup> Knowlton, *Fruits of Philosophy*, 18-19.

likely to be taken advantage of by the ruling classes.

Lastly, Knowlton argues that it is, in fact, mankind's right to have access to all knowledge. He writes:

“I hold the following to be important and undeniable truths; That every man has a natural right both to receive and convey a knowledge of all the facts and discoveries of every art and science, excepting such only as may be secured to some particular person or persons by copyright or pate (*sic*); that a physical truth in its general effect cannot be a moral evil; that no fact in physics or in morals ought to be concealed from the inquiring mind.”<sup>196</sup>

Knowlton's phrasing, “That every man has a natural right both to receive and convey knowledge,” echoes the language used by Jefferson in the declaration of independence, suggesting that Knowlton is making a nationalistic argument that the dissemination of all knowledge, even anatomical knowledge, is beneficial to the development of the United States. This works well with his early argument that keeping the population in ignorance through constant toil is likely to breed tyranny. Knowlton's comments on the interaction between knowledge and morality, namely, that merely having or providing someone with knowledge is not immoral, are also interesting because Knowlton himself was imprisoned for the publishing of *Fruits of Philosophy*, on the grounds that it violated Massachusetts' obscenity laws.<sup>197</sup>

One might ask how representative was Knowlton of the community of anatomists in nineteenth century America? Certainly, his ideas and actions seem to be a bit extreme. However, the themes found in Knowlton's writings are indeed echoed in the writings of

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<sup>196</sup> Knowlton, *Fruits of Philosophy*, 26.

<sup>197</sup> While Knowlton's language in this passage is remarkably similar to that used by Jefferson in the American Declaration of Independence, and he may well be deliberately making this reference, there is no evidence in the rest of the text which would allow us to say so definitively.



other American anatomists, such as Oliver Wendell Holmes, Sr. In his 1842 essay, delivered before the Boston Society for the Diffusion of Useful Knowledge, titled “Homeopathy and its Kindred Delusions,” Holmes feels that it is his duty to provide his audience with the knowledge what he sees as the logical inconsistencies in the doctrines espoused by practitioners of homeopathic medicine. If the public is only educated, Holmes feels, they will no longer be prey to the ineffective or even potentially harmful practices of sectarian medicine.<sup>198</sup> This feeling that it is a duty to share the knowledge that they possess is a theme that runs through the writings of many American anatomists.

Knowlton's arguments that knowledge, and anatomical knowledge in particular, should be freely available to the public echoes that used by other anatomists, that anatomical knowledge will have an improving effect upon the public. Although Knowlton appears to be saying that knowledge should be freely available regardless of whether or not it has an improving effect on the public, he clearly does believe that anatomical knowledge will be of use to his readers.

Convincing the public that anatomical research would benefit them in their everyday lives was an important aspect of the anatomists' campaign of professionalization. Knowlton's writings in *Fruits of Philosophy* showed the public one way in which they could benefit from anatomical knowledge. However, convincing the public of the importance of their discipline was an informal way in which anatomists sought to legitimize their field. Anatomists also sought to have the study of anatomy included among the requirements for medical licensure.

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<sup>198</sup> Oliver Wendell Holmes, Sr. “Homeopathy and Its Kindred Delusions.” *Medical Essays, 1842-1882* (Boston: Houghton, Mifflin, and Co., 1895) 100-101.

***The Public and Practicing Physicians on the Legitimacy of Anatomy***

Practicing physicians also contributed to the debate over the legitimacy of practicing dissection. As discussed by Sappol, the study of anatomy was one way in which America's regular practitioners attempted to distinguish themselves as professionals, in contrast to practitioners of non-standard disciplines. This returns us to the blurred line between practicing physicians of regular medicine, and those practitioners of sectarian disciplines. However, as regards the study of anatomy as a marker of professional identity, both groups seemed to think that anatomy had some value. It has been proposed that sectarian practitioners attempted to make themselves appear on the same footing as regular practitioners by mirroring their institutions. This included the subjects taught at their academies, which are thought to have included anatomy.<sup>199</sup> Sappol comments that “In the late 1830s popular alternative medical cults the botanics and homeopaths who had originally defined themselves in opposition to anatomical medical orthodoxy, reversed field and began criticizing regular medicine for being insufficiently anatomical, and for monopolizing anatomical knowledge.”<sup>200</sup>

Anatomists also argued that the teaching of anatomy at a particular university was a marker which set that university apart from the myriad of medical schools which were appearing in the United States at this time, without any particular oversight or regulation.<sup>201</sup> In early nineteenth century America, a medical education could be obtained

<sup>199</sup> Sappol, *A Traffic of Dead Bodies*, 6

<sup>200</sup> Sappol, *A Traffic of Dead Bodies*, 6.

<sup>201</sup> Ludmerer, *Learning to Heal*, 43.

through two means. One could either become an apprentice, or attend one of the new proprietary medical schools which were appearing rapidly throughout the country. The course of study at proprietary schools was usually brief, averaging two years. Students learned merely from lectures, and the chance to observe a patient with one's own eyes, or to perform a dissection was exceedingly rare. The quality of the education provided by proprietary schools may be exemplified by their entrance requirements, which only stated that students must be able to read and write. Even this was not contently enforced, and schools were known to waive this requirement if the student could afford the fees. The desire of the owners of proprietary schools to turn a profit was of great concern, as incidents were uncovered of schools merely selling a medical diploma for a fee, without requiring anything of the student. Those few medical schools which were connected to Universities attempted to set themselves apart from the proprietary schools, modeling their curriculum on those in place at the universities of Europe. As members of the medical profession began to attempt to reform the system of medical education in the United States, some began to make careers as researchers and teachers.<sup>202</sup> Anatomists used reforms to medical education to emphasize the necessity of their discipline and to legitimize the idea of a physician making a his career as a researcher or instructor of anatomy.

**Conclusion:**

Nineteenth-Century American anatomists faced criticism from the public over the

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<sup>202</sup>Ludmerer. *Learning to Heal*, 41.

nature of their work and the sources from which they obtained their material. Anatomists even faced opposition from other members of the medical profession, particularly from the practitioners of sectarian medicine, who claimed that they were monopolizing on knowledge and forming a new aristocracy in opposition to the democratic ideals which were supposed to form the foundation of American society. Opponents to dissection even suggested that modern society had produced sufficient alternatives to the practice of human dissection, such as models and drawings, that the practice of human dissection was no longer necessary.

As opposed to the regular physicians who were threatened for their financial security when they were challenged by the growth of sectarian medicine in the United States, anatomists were less concerned for their monetary well being and more concerned for the future of their research, as they believed that hands-on dissection was the best way for medical students to train, and was the method which would produce the most skilled practitioners.

In order to convince the public of the importance of the practice and study of anatomy, American anatomists had to strive to make their discipline appear more professional in the eyes of the public. This was occurring at the same time as the professionalization of the medical profession in America at large. While the medical profession utilized the discipline of anatomy to emphasize their own professional identity, as opposed to practitioners without sufficient training, be they practitioners of sectarian medical disciplines, or students of sub-standard medical schools. However, anatomists faced suspicion and opposition from the public which forced them to put significant

effort into proving the worth of their discipline.

Anatomist sought to do this in two ways, through reforming the image of the discipline by attempting to curtail the indelicate behavior of their students, and through providing useful knowledge to the public in the form of published, printed works, and exhibitions of anatomical models, as they felt that this knowledge would have an improving affect upon society, as well as helping to prove to the public the usefulness of the study of anatomy.

The attempted program of rehabilitation demonstrates that anatomists were conscious of their discipline as an entity which was not entirely subsumed by the medical profession, and this separate professional identity supports an argument for a separate sub-culture among anatomists in early nineteenth century America.

## **Conclusion:**

American anatomists of the early and mid-nineteenth century helped to alter the dialogue on anatomical knowledge. They contributed to the debate over how much anatomical training was necessary for medical students to become effective physicians, as well as the debate over the most ethical methods for sourcing cadavers for anatomical teaching and research.

The three main areas of contention that William Horner, Charles Knowlton, Oliver Wendell Holmes, Sr. discussed in their writings can all be connected to the anatomist's advocacy for the increased utilization of anatomical knowledge in American society. They wrote about religion, about empirical science, and about professionalism in pursuit of making their specialty more palatable both to their colleagues and to the American public. In all three areas of debate, Horner, Knowlton, and Holmes placed arguments in favor of their discipline into the public discourse on anatomy.

Religion is often considered to have been one of the major reason for which the American public objected to the practice of dissection in the early and mid-nineteenth century. Although historians have shown that there was no official theological position in either Protestant or Catholic Christianity which would have prevented the practice of dissection,<sup>203</sup> belief in the doctrine of the resurrection of the body at the second coming of Christ made being dissected, which virtually assured that the deceased would not receive a proper burial, rather distasteful. American anatomists of the early and mid-nineteenth century held different views on divinity and the relationship between the divine and the body. Horner believed that the study of the body was a 'noble' endeavor, and that the

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<sup>203</sup> Suzanne Shultz, *Body Snatching: The Robbing of Graves for the Education of Physicians in Nineteenth Century America*. (Jefferson: McFarland and Co., 1992) 18.

perfect arrangement in man, which, according to Horner, placed him at the head of the animal kingdom, was evidence of God's hand in creation. As such, Horner believed that the study of human anatomy was beneficial, as it allowed one to have a better understanding of God's creation, although Horner did not believe that the study of anatomy could provide answers to questions about nature or existence of the soul. Oliver Wendell Holmes similarly believed that the body provided evidence of the hand of the divine in creation. Horner believed in a more traditional conception of deity, Knowlton held an atheistic viewpoint, and Holmes crafted a personal theology in which he found the divine in nature, and considered mankind to be a part of that divine nature. Although these three anatomists held widely differing theologies, all three of them used their religious beliefs to argue for the legitimacy of anatomical study.

The dialogue on anatomy in nineteenth century America was not only on the morality of the practice of anatomy, but also about supporting one's medical theories with experimental evidence. American anatomists of the early and mid-nineteenth century felt the best way to practice medicine was to base one's theories, diagnostic methods and treatments on empirical science. Oliver Wendell Holmes was perhaps the anatomist who most significantly contributed to this debate, with his widely read essay, *Homeopathy and Its Kindred Delusions*. In this essay, Holmes attempted to steer his audience away from the dangerous of homeopathy and other sectarian disciplines. Holmes was opposed to sectarian medical disciplines because he felt that their proposed treatments had not been sufficiently rigorously tested. The threat posed by sectarian medicine was cause for concern among both regular practicing physicians and anatomists. Regular physicians

lobbied for the maintenance of licensing legislation, which prohibited a license to practice medicine to anyone without a degree from an accredited university. Sectarian practitioners, Thompsonians in particular, wished these laws to be repealed so that they might have legal standing to sue for non-payment of fees, however Thomsonian schools did not meet the established guidelines. The American Medical Association was tasked with setting the guidelines that medical schools had to meet in order for their graduates to receive licenses. Among these requirements were courses in anatomy. Thus, the fight to maintain licensing legislation benefited both the anatomists, whose field was acknowledged as an essential part of a medical education, and the practicing regular physicians protected their legal privileges against encroachment from sectarian practitioners.

In order for their ideas to be taken seriously, American anatomists of the early and mid-nineteenth century were required to reform the way their public image. The public largely connected anatomists with grave robbers and body snatchers, and with the filthy work of the dissecting theater. To change this perception, anatomists began to professionalize. The culmination of this campaign of professionalization was the founding of the Association of American Anatomists in 1888. In order form a professional identity, anatomists concentrated on two things: reining in the behavior of medical students, and proving to the public that the research they were conducting had use for the everyday man. William Horner contributed to this discussion by frequently reminding his students that they were part of a respectable tradition, and they were responsible for upholding the honor of their school. Horner's work in creating preserved



specimens for the University of Pennsylvania's also contributed to the professionalization of the anatomical profession, as possessing an anatomical museum or collection lent an institution prestige. Collections of wax-work anatomical specimens were also used to spread anatomical knowledge to the public, providing them information which might be beneficial to their health, and helping to demystify the practice of anatomy and dissection in a 'safe' and acceptable way. This idea promoted by these anatomical exhibits which were intended for public audiences, that anatomical knowledge would have an improving effect on the audience, echoes the religious ideas purported by Oliver Wendell Holmes that the human body was divine. In his own roundabout way, Charles Knowlton also contributed to creating the public image of the professional anatomist. Knowlton, who was known for his controversial opinions, which frequently got him into trouble with his neighbors, nonetheless made a significant contribution to the idea that the public was entitled to access to anatomical knowledge by publishing his *Fruits of Philosophy*, the first contraceptive manual published in the United States. Knowlton's connections with Abner Kneeland's Society of Free Enquirers demonstrate his commitment to the free spread of new ideas and information. It should be noted that Abner Kneeland was, in fact, the original publisher for *Fruits of Philosophy*. Horner's encouraging respectable behavior among the University of Pennsylvania's students, Knowlton's demonstration of how anatomical knowledge could be useful to the public in their daily lives, and Holmes' firm belief that the regular medical professionals should distance themselves from sectarian practitioners demonstrate the ways in which these three influenced the debate over the professionalization of medicine in the United States, and anatomy's place within that

discussion.

As with any group, there were variations among American anatomists. The disrespectable stigma attached to the study of anatomy through the practice of dissection affected different anatomists in different ways. Oliver Wendell Holmes, who has been described as a Boston 'Brahmin,' clearly a member of the elite social circle of early nineteenth century Boston, appears to have been untouched by the stigma of anatomy. The figure of William Horner has nearly been lost to history, although the dim picture which can be gleaned of him from his writings shows us a serious man concerned with the respectability of his profession and his research. Charles Knowlton is remembered for the contributions that he made to the literature on contraception, but it is impossible to discuss his works without discussing his contentious personality. The ways in which these men's social standings were influenced by their contact with anatomy influenced how effective they were able to be in altering the debate on the place of anatomical knowledge in nineteenth century America. As mentioned in the introduction, these three anatomists were selected for their diversity in social class, and this influenced their available audience. For example, Knowlton's works likely only reached a select audience who were sympathetic to the Free Thought movement, while Holmes' *Breakfast Table* books might have been encountered by anyone who picked up the *The Atlantic Monthly*. However, despite their differing audience, all three anatomists contributed to the dialogue on the place of anatomy in American society.

Two developments influenced the decline of the figure of the anatomist in America. The first was the increasing respectability of the study of anatomy, and the

institutionalization of medical education in America. The anatomists themselves were the authors of many of these changes. Anatomists successfully integrated their ideas about the importance of anatomical knowledge to medical education and society into the discourse of the larger medical community.

Over time, the sourcing of cadavers for anatomical study became less of an issue. This development is a factor of the passage of anatomy acts in the majority of states, as well as improvements in technology which allowed cadavers obtained from legal sources to be collected over a longer period of time when classes were not in session, rather than anatomists and their students having to hurriedly obtain subjects from any source available. However, it was not until 1968 that one was legally able to bequeath one's body for the purposes of teaching and research.<sup>204</sup> Through legislation and public dialogue, dissection became less of a horror and more accepted as a necessary part of medical research and education.

The importance of anatomy to medicine has not faded. The American Association of Anatomists still exists, and continues to publish its journal, *The Anatomical Record*. As demonstrated by the 1968 Uniform Anatomical Gift Act, anatomical research conducted through dissection is no longer abhorrent to the general public, as the passage of legislation concerning this practice indicates that enough people wished to donate their remains to make it of legal concern. The voluntary donation of one's remains to anatomical education and research indicates that one finds the practice of anatomy to be an important and worthwhile endeavor. This is what Horner, Knowlton, and Holmes

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<sup>204</sup> Aaron Tward and Hugh Patterson, "From Grave Robbing to Gifting: Cadaver Supply in the United States." *Journal of the American Medical Association* 287 no. 9 (2002) 1183

were attempting to convince their readers of in their writings on religion, empiricism, and professionalization.

In his essay, *Currents and Counter Currents in Medical Science*, Holmes described the physician as a rower who is attempting to keep his boat on course while contending with currents which would pull him astray. This study has examined some of these adverse currents which anatomists in particular faced in the early and mid-nineteenth century, including objections to their research from the public, as well as from sectarian and regular physicians. Horner, Knowlton, and Holmes in their writings addressed the religious concerns of the public, the place of empiricism in medical practice and research, and the need for professionalization among the members of the anatomical profession. Through their contributions to the dialogue concerning the place of anatomical knowledge and research in medicine and society, Horner, Knowlton, and Holmes helped to steer the boat of medical science into its current configuration amid the cultural and intellectual currents of their day.

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