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**Students for Life: The Professionalization of American Medicine Before and During
the Civil War**

Jonathan Mills

Whenever the phrase “Civil War medicine” is mentioned in casual conversation, it’s immediately followed by strong expressions of revulsion and disgust. One can’t escape the horrible images of amputation, infection, gangrene, dysentery, and death. We remember the origin of the phrase “bite the bullet” and shudder at the images that arise.

This has quite naturally led to a negative perception of Civil War physicians among the general public. Many of us realize, upon further reflection, that they did the best they could with the tools they had and that ignorance of modern science tied their hands. It’s tempting to assume that Civil War physicians were ignorant and unscientific, since they didn’t have to jump all the hurdles doctors do today. The important thing to remember, however, is that while there were undoubtedly many charlatans and unqualified amateurs hanging out their shingles as doctors, there were also dedicated practitioners who stayed current, read widely, and showed a high level of professionalism and dedication to excellence. The focus of this paper will be on *how* these doctors continued to learn and improve their skills through research, and through dialogue with each other and the outside world, stressing the fact that American medicine was more original and less derivative than many have previously thought.

Historiography

Many different historians have extensively researched the topic of medicine in the Civil War. This is largely because of the abundance of firsthand documentation available on it. Many of them¹ made use of the *Medical and Surgical History of the War of the Rebellion*, especially the statistical sections. The wealth of information available from this source, and many others, has allowed researchers to write some amazingly informative works in this area.

The book *Civil War Medicine: Challenges and Triumphs* by Alfred Bollet is a thorough and highly regarded work that is both scholarly and readable.² Its purpose is to re-evaluate Civil War medicine and shine light on some unsung heroes, while also providing a detailed look at the medical practices themselves. He talks a great deal about the surgical techniques, epidemics, prison camps, and ambulances, giving a broad overview with useful sidebars and boxes containing specific case studies. He wrote a chapter entitled "Sects and Science: Civil War Medicine in Context" that I found particularly helpful, as it described the state of medical understanding in the 1860s, and how medical knowledge spread.

¹Two examples include: Smith, Dale C. "Military Medical History: The American Civil War." *OAH Magazine of History* 19, no. 5 (September 2005): 17-19. Academic Search Premier, EBSCOhost (accessed September 26, 2007) and Freemon, Frank R. *Gangrene and Glory: Medical Care During the American Civil War*. (Madison NJ: Fairleigh Dickinson University Press, 1998).

² Greg Burke, writing in the *Annals of Internal Medicine*, (136, no. 10, May 21, 2002, 784-784) called it "the most informative on the subject." Dale Smith, a reviewer from *OAH Magazine of History* (19, no. 5 (September 2005): 17-19) described it as "The best single volume on medicine in the American Civil War," and recommended it without question.

Another respected work in this area was written by Frank Freeman, entitled *Gangrene and Glory: Medical Care During the American Civil War*. It was published a few years before Bollet's book and is quite different in scope and style. It's written in what's called the "fog theory approach," where he provides a narrative account (most vividly of Gettysburg and Vicksburg) written from the perspectives of wounded soldiers, without giving the reader any more knowledge than they had at the time the battle was fought. He was more concerned with the organization of medical officers and recounting specific experiences, leaving the more technical appraisals of medical practices to authors like Bollet.³

Gangrene and Glory has a useful chapter on American Medicine in the 1850s that gave some fine examples of foreign correspondence.⁴ It describes how sectional conflicts impacted the American medical community as well, and how the different theaters of combat presented different challenges to the physician.

Two older, more foundational works on Civil War medical history are: *Doctors in Gray* by H.H. Cunningham, and *Doctors in Blue*, by George Worthington Adams. *Doctors in Gray* was published in 1958, and represents a major scholarly achievement. Cunningham states in his bibliography that "my basic sources for this work have been manuscripts of an official nature."⁵ He did exhaustive primary research and gave a

³ For a recent review of *Gangrene and Glory*, see Wegner, Ansley Herring. "Gangrene and Glory (Book)." *North Carolina Historical Review* 79, no. 4 (October 2002): 480. Academic Search Premier, EBSCOhost (accessed October 2, 2007).

⁴ Freeman, Frank R. *Gangrene and Glory: Medical Care During the American Civil War*. (Madison NJ: Fairleigh Dickinson University Press, 1998), beginning on 19.

⁵ Cunningham, H.H. *Doctors in Gray* (Baton Rouge, LA: Louisiana State University Press, 1958), 291.

thorough description of Confederate medical organization. He also gave a concise, well-organized description of the surgical and therapeutic techniques employed by Confederate doctors. While his analysis isn't quite as deep as Bollet's in this area, it's more organized and concentrated than Freemon's.

Doctors in Blue is also well-researched and is an excellent general overview of medicine in the Union army. Like Cunningham, Adams focuses mostly on the organization of medical officers, hospitals, and the ambulance corps, but he also wrote a substantial chapter on surgical technique and therapeutic medicine.⁶

All of these works are well done, and represent major contributions to our knowledge of Civil War medicine. They frequently overlap, and occasionally disagree (typically over trivial facts), but they all agree that many Civil War physicians did their utmost to maximize their skills and professional abilities.⁷ This project only tackles a small segment of the topic as a whole, but it couldn't have been done without their previous scholarship.

These authors have all conducted their studies by thorough analysis of primary sources. I have attempted to do likewise, examining the extensive records kept by the Union Surgeon General's Office as well as the personal papers of various American medical pioneers.

⁶ Adams, George Worthington. *Doctors In Blue*, (Baton Rouge, LA: Louisiana State University Press, 1952).

⁷ One small disagreement I observed pertained to stethoscope usage among American doctors. George Worthington Adams claimed that the stethoscope was a "novelty," and Bollet disputed this with evidence from a biography of Oliver Wendell Holmes. See *Civil War Medicine: Challenges and Triumphs* p. 64.

My goal with this research is to expand our picture of the American medical community in the nineteenth century, hopefully shedding some light on its intellectual life and the dedicated, enterprising individuals that participated in it. This picture is highly significant for us today because our current medical community has its roots in this time period. By studying its development and the context in which it took place, we can better understand the processes that drive the exciting medical innovations we see around us today.

Foreign Exchange and the Surgeon General's Office

It's an embarrassingly undeniable fact that American medical education in the mid-nineteenth Century was highly inadequate. Most doctors in this period went to "proprietary" schools where there were no premedical requirements, and the student need only be male and pay his tuition in order to graduate. Medical schools were typically seen as a supplement to apprenticeship, which was the preferred method during colonial times. Medicine was still viewed as more trade than science, and the lack of clinical and laboratory training reflected this. Professors would lecture extensively and assign textbook readings, but many doctors would graduate from medical school without having attended a delivery, or seen surgery performed.⁸

Clearly, any American physician practicing medicine during the Civil War who wanted to excel in their field needed to go beyond his medical school education. Many American physicians decided to supplement their medical school education with

⁸ Ludmerer, Kenneth M. *Learning to Heal: The Development of American Medical Education*. (New York: Basic Books, Inc., 1985), 10-15.

postgraduate studies in Europe. Some prominent names include Oliver Wendell Holmes (who was dean of Harvard Medical School), Henry I. Bowditch (who was instrumental in creating the ambulance system), and Alfred Stillé (a prominent medical professor and hospital inspector). They all studied in Paris and learned therapeutic techniques as well as scientific methodologies that were cutting-edge and highly effective. All of these men later put their exceptional training to use during the Civil War as surgeons passed their learning on to future generations of American physicians.⁹

These doctors (and many others) were riding a surging wave of medical progress that started in Western Europe in the first half of the Nineteenth Century. Pioneers like Johannes Müller (in physiology), Rudolph Virchow (in microscopy), Hermann von Helmholtz (ophthamology), and Pierre Louis (diagnosis) were conducting scientific studies that would influence many American physicians. Many American physicians studied personally with Pierre Louis, and spread his teachings widely throughout the United States.¹⁰

The Surgeon General's Office played a vital role in the continuing education of American physicians. Though both Surgeons General (including the Confederate counterpart) were concerned with all aspects of public health, during the war most of their efforts were given to battlefield medicine and the logistical difficulties that came with it. Both departments tried to make reference books available to their medical

⁹ Bollet, Alfred J. *Civil War Medicine: Challenges and Triumphs*. (Tuscon, AZ: Galen Press, 2002), 43-44.

¹⁰ Encyclopædia Britannica. History of medicine. Accessed October 29, 2007, Encyclopædia Britannica Online: <http://search.eb.com/eb/article-35663>

officers. At least three general-reference medical textbooks (published by American physicians) were being used by the Union Surgeon General's Office at the time of the war's onset.¹¹ Since most doctors at the beginning of the war had had little experience with surgery and gunshot wounds, several specific handbooks on these topics were rushed into print in 1861, for immediate distribution.¹²

The Surgeon General's Office also maintained a library of medical books and treatises that could be readily referenced by any physician that took the time. It contained works from America as well as Europe (in Latin, French, German, and Italian), and a few of the books were written as early as early as 1721.¹³

Not every doctor had this much time, however, and large medical textbooks couldn't easily be shipped out to army doctors working in the wilderness. The Surgeon General's Offices (both Union and Confederate) had to send out circular letters to their officers on a regular basis, describing new methods that might provide "immediate and practical benefit" to surgeons in the field.¹⁴ These educational notices would provide up-to-date information on various diseases and treatment as information became available.¹⁵

¹¹ *Medical and Surgical History*, volume 1, part 3, 70-75, and 534 refer to major works by Wood, Watson, and Bennett on general medical practice. Vol. 2 part 3, 35 refers to Dr. Julian Chisolm's *Manual of Military Surgery for the use of Surgeons in the Confederate States Army*.

¹² Bollet, Alfred J. *Civil War Medicine: Challenges and Triumphs*. (Tuscon, AZ: Galen Press, 2002), 56.

¹³ *Medical and Surgical History*, volume 2, part 2, 128.

¹⁴ *Medical and Surgical History*, volume 2, part 2, 30 it tells how anatomical diagrams were also given out to medical officers by the Union Surgeon General's Office, to aid in diagnosis and description.

¹⁵ It should be noted that not all of these circulars provided information from reliable studies. The *Medical and Surgical History* refers disparagingly to one Confederate

One example can be found in Circular No. 6, which was sent out in 1864 and described cases of gunshot victims suffering from reflex paralysis. Doctors working at Turner's Lane Hospital in Philadelphia closely observed the progression of gunshot wounds, and their effects on surrounding nerves. They compiled their case studies and the Union Surgeon General's Office went on to distribute the book to their medical officers in the field.¹⁶

They would also provide instructions to the medical personnel. Much of the time these were clinical in nature, describing and authorizing various new treatments. There were some memos, however, that ordered various experimental remedies to be tested on the troops. One assistant surgeon was specially ordered to administer peanuts to soldiers suffering from diarrhea and dysentery, and replied that he found them to be "utterly worthless in either stage of each disease." Another surgeon was ordered to test Bismuth on soldiers suffering from diarrhea, and stated that it "has certainly proved the most successful of any [treatment] hitherto employed, and is worthy of further trial."¹⁷

Some of the time, however, these circular letters had to do with bookkeeping. The Union Surgeon General's Office in particular made sure their medical officers kept meticulous records for historical and scientific reasons, and when the nomenclatures or classifications changed, a memo was circulated.¹⁸ The information collected from these

circular that prescribed the bark of dogwood, poplar, and willow bark combined with "whiskey 45 degrees strength" as a substitute for quinine in the treatment of malaria (volume 1, part 3, 74).

¹⁶ *Challenges and Triumphs*, 56.

¹⁷ *Medical and Surgical History*, vol. 1, part 2, p. 50 contains both replies.

¹⁸ *Medical and Surgical History*, vol. 2 part 3 64-65 cite information gathered at the instruction of these circular letters, on gunshot wounds and their treatment.

doctors was massive, and allowed the office to compile information on approximately 6.5 million illnesses with the cases of 250,000 wounded soldiers.¹⁹ Surgeons that were actively serving on the front lines were also participating in one of the largest medical research projects of all time.

The doctors that participated in this government-sponsored research project were extremely thorough in their cataloging, and they were clearly interested in furthering medical knowledge as they worked. This project represents one of the largest, most authoritative medical research projects in American history, and it helped many American doctors continue their medical education.

The Medical and Surgical History

This research project culminated in the publication of the *Medical and Surgical History of the War of the Rebellion*, which is a massive six-volume work compiled by the Union Surgeon General's Office between 1870 and 1888.²⁰ It was the largest American medical research project of its time, and because it involved hundreds of American doctors all over the country, it had a massive impact on their continuing education and professional growth. These books are an amazing catalog and of nearly every casualty of the war and reflect the organization and dedication of hundreds of Union physicians. In one chapter on "tubercular ulceration of the intestines" I found a footnote with references

¹⁹ *Challenges and Triumphs*, 23. This data was later assembled in to the *Medical and Surgical History of the War of the Rebellion*, a large primary source that will be discussed in the next section.

²⁰ This work is primarily composed of reports from Union officers. Confederate losses were recorded as well, but the vast majority of their data came from Union medical officers and their assistants.

to 16 different articles in French and German medical journals.²¹ There are also many references to ancient medical writings by Greek physicians (such as Herophilus, Erasistratus, Aretaeus, Archigenes, and Galen) and physicians from the Italian Renaissance (Mundinus, Benivieni, and Morgagni in the 1700s).²² The compilers were voracious readers of foreign medical literature.

It's also clear from the *Medical and Surgical History* that American physicians were communicating extensively among themselves and building on each other's work. When analyzing instances of dysentery, for example, the compilers cited an article in the *New Orleans Medical and Surgical Journal* that "refers to local epidemics on certain plantations in south Alabama during 1851-52 and 54."²³ There is also a reference to *The Monthly Microscopical Journal*, regarding the histological process we now know as a frozen section.²⁴

The scholarly work done by the Surgeon General's office in the compilation of these books shows a thriving scientific community that stayed abreast of current medical developments while charting their own course of research. The compilers intended it to be "not only a contribution to science, but an enduring monument to the self-sacrificing

²¹ United States, Surgeon-General's Office. *The medical and surgical history of the war of the rebellion (1861-65)*. (Washington: G.P.O., 1870-88). [Part of Thomas Memorial Collection], vol. 1, part ii, 592.

²² *Ibid*, 432-436.

²³ *Ibid*, 431.

²⁴ A frozen section is a process where tissue is biopsied and rapidly frozen for microscopic analysis and diagnosis while surgery is still in progress.

zeal and professional ability of the Volunteer and Regular Medical Staff...²⁵ The work lives up to its name. It is an exhaustive collection of case studies, statistical analyses, illustrations²⁶, and clinical discussion that gives the modern reader an amazingly complete picture of Civil War medicine.

Much of the information in this work was gathered from monthly reports submitted by all commissioned surgeons, and by the “Discharges from service on the surgeon’s certificate of disability.”²⁷ There were also a large number of drawings, diagrams, and other illustrations commissioned (most completed before 1870)²⁸ that are spread liberally throughout all six volumes.

Three of the six volumes are designated “medical” and the other three “surgical.” The medical volumes deal primarily with the diseases and non-traumatic maladies treated by physicians during the Civil War. The surgical volumes deal with the wounds and injuries themselves, and how they were handled. Both parts enrich our understanding of medical practices during the Civil War, but in different and complimentary ways. They also show how American doctors were using their own data with European research to synthesize new and improved medical techniques.

The three medical volumes give us an excellent idea of the state of clinical medicine during this time, and show how well they understood the causes of disease.

²⁵ United States, Surgeon-General’s Office. *The medical and surgical history of the war of the rebellion (1861-65)*. (Washington: G.P.O., 1870-88). [Part of Thomas Memorial Collection], Vol. I, Preferatory, IX.

²⁶ These remarkable and painstaking illustrations were drawings, some of the actual specimens (or people) and some of wood-etchings rendered by other artists. All are carefully preserved by surrounding pages of wax paper.

²⁷ *Ibid.*, Introduction, XIII.

²⁸ *Ibid.*, Vol. II, part 2, Memorandum, III.

Much of this can be deduced from their terminology and nomenclature. In the first parts of volume I, for example, they include “Miasmatic diseases” as a category.²⁹ Alfred Bollet describes miasmas as “invisible poisons that floated through the air,” and notes that the lack of microbiological knowledge grounded them in this faulty thinking.³⁰ It’s fascinating to note, however, that the compilers of later volumes of this same work were actually aware of various types of bacteria. This may show a significant advance in knowledge between the publication of the first book (1870) and the second (1879).³¹

The surgical volumes also contribute to our understanding of Civil War medical practices. But rather than focusing on the nature of the ailments, most of the volumes are dedicated to descriptions and case studies. Many of these injuries are shown in extremely detailed illustrations that could prove extremely useful for researchers interested in the weaponry and technology of the Civil War, and their efficacy in combat. The various types of ammunition (minie balls, cannon balls, etc.) led to different types of wounds, and medicine was forced to evolve alongside technology. New wars always incorporate new technology, making them unique. The compilers were aware of this and sought to preserve as much as they could for future generations to study.

The surgical volumes also show frequent overlap between medical and technological innovation. New types of splints were employed, new surgical devices

²⁹ Ibid, Vol. I, part 1, Introduction, XVIII.

³⁰ Bollet, Alfred J. *Civil War Medicine: Challenges and Triumphs*. (Tuscon, AZ: GalenPress, 2002).

³¹ *Medical and Surgical History*, Vol. I, part 2, p. 478. See also the Encyclopedia Britannica online article entitled “Lister, Joseph, Baron Lister, Of Lyme Regis”. Lister published his first studies on microorganisms and sanitation in 1867, probably explaining how the compilers of the *Medical and Surgical History* increased their understanding of bacteria between 1870 and 1879.

were used, and new diagnostic equipment was coming into vogue.³² Some of these were borrowed from European physicians. The compilers mentioned one notable splint invented by a certain Dr. Stromeyer with a footnote reference to a German journal article.³³ They also described and illustrated Olm's inhaler, which helped greatly in administering chloroform anesthesia.³⁴

One of the most useful features of the *Medical and Surgical History* is the statistical analysis that is present in both the surgical and medical volumes. Most of these are in the form of tables that tell how many casualties occurred, and from which ailments. Most of these are organized by region, and separate numbers are given for African-American casualties. These numbers show us both the horrific scope of the war and where the gaps in nineteenth century scientific knowledge led to the greatest loss of life.

Perhaps the most striking feature of the *Medical and Surgical History* is the artwork. Many of the wounds are depicted in extraordinary detail, showing the full extent of the injuries, and how they mended over time. These before and after images were highly useful in displaying the long-term effects of bone excisions (as opposed to amputations) and the shortened limbs that would often result from it. There are also many depictions of gunshot wounds, saber wounds, and gangrene.

The creation of the *Medical and Surgical History* was one of the best possible means of professional development available to Civil War physicians. Recording,

³² Bollet gives an excellent description of the use of stethoscopes, thermometers, microscopes, and ophthalmoscopes. See *Civil War Medicine: Challenges and Triumphs* p. 64-70.

³³ *Medical and Surgical History*, Vol. II, part 2, p. 888.

³⁴ *Medical and Surgical History*, Vol. II, part 3, p. 87.

compiling, and exchanging this data helped codify existing methods and spread new ones. It also provided American medical researchers with a uniquely American project: their big chance to make a splash on the international medical community. Though their first priority was minimizing casualties and easing suffering, they also used the unique wartime environment to expand and improve the practice of medicine as a whole.

Medical Societies and Journals

The scientific spirit shown by the compilers of the *Medical and Surgical History* didn't simply appear from thin air; it came from a long tradition carried on by American medical societies. These societies published many well-respected medical journals long before the Civil War years. The peer-reviewed *American Journal of Medical Science* was first published in 1820 and served as the official publication of the Southern Society for Clinical Investigation.³⁵ The *Boston Surgical and Medical Journal* began publication in 1828, in coordination with two prominent New England medical societies.³⁶ The *New York Journal of Medicine* had been in circulation since 1843, and also sent out a weekly pamphlet, called *American Medical Times*.³⁷

³⁵ Southern Society for Clinical Investigation, homepage, <http://www.ssciweb.org/> (accessed October 25, 2007).

³⁶ Massachusetts Medical Society, and New England Surgical Society. 1828. *The Boston medical and surgical journal*. Boston: Cupples, Upham & Co. (accessed October 25, 2007).

³⁷ Forry, Samuel, Charles A. Lee, Samuel S. Purple, Stephen Smith, and H. D. Bulkley. 1843. *The New York journal of medicine*. New York: J. & H.G. Langley, and American medical times, being a weekly series of the New York journal of medicine. 1860 (accessed October 25, 2007).

The important thing to notice here is that each journal was published by a particular medical society to promulgate the new information generated by their research. The *Companion Encyclopedia of the History of Medicine* states that American medicine from 1800-1850 was “very much dependent on European and particularly British medicine.” Only two Americans are mentioned as having done any clinical research.³⁸ Yet the *Medical and Surgical History* cites many studies published in American journals that predate the Civil War. One study from the *Philadelphia Journal of Medical and Physical Sciences* focused on “A sketch of the most remarkable diseases of the Negroes of the Southern States,” and was published in 1826.³⁹ Another from the *Missouri Medical and Surgical Journal* was entitled “Epidemic dysentery,” and was published in 1847. The *Medical and Surgical History* cited articles from many other American publications, such as *The Stethoscope*, *the Iowa Medical Journal*, *the Western Lancet*, *The Medical Independent*, *The Cincinnati Medical Observer*, and *The Buffalo Medical Journal*, and treated their data as useful and authoritative.⁴⁰

The *Medical and Surgical History* also refers to the activities of medical societies that weren't published in their journals. “Transactions of the Medical Society of Pennsylvania, Sessions of 1853 and 1854” studied the frequency of intermittent fevers with acute dysentery. Statistical data on dysentery deaths originally presented at the “63d annual convention of the Connecticut Medical Society in 1855” was reproduced in the *Medical and Surgical History*.

³⁸ Bynum, W.F. and Roy Porter, eds. 1993. *Companion Encyclopedia of the History of Medicine*. London : Routledge, 209.

³⁹ *Medical and Surgical History*, vol. 1, part 2 431.

⁴⁰ *Ibid*, 424-5.

There were also individual essays published by medical researchers that weren't in medical journals. One researcher named Macculloch wrote an *Essay on Malaria* in 1829 dealing with the supposedly miasmatic (or airborne) nature of malaria.⁴¹ Joseph Jones published a paper on malaria in 1859 that gave extensive description and analysis of its symptoms. D.A. Doniphan also published his own individual research on malaria that he did in Louisiana in 1846.⁴²

The robustness of the American medical community can be clearly seen in the history of the American Medical Association. At the time of its founding in 1847, there were delegates from 40 different medical societies and 28 colleges.⁴³ Though the association was still in its early stages, (the famous *Journal of the American Medical Association* wasn't published until 1883 and there were no official licensing practices yet in place) the *Medical and Surgical History* refers to several publications put out by the AMA regarding dysentery epidemics in Ohio and Indiana in the 1850s that display sophisticated clinical technique.⁴⁴ Through their wide constituency and constant activity, we see a picture of American medicine that is not at all parochial or backwater.

While it's true that many of the most celebrated advances in medical science happened in Europe at this time (Lister's work on antiseptics and Virchow's application of microscopy to pathology are both good examples), we shouldn't ignore the flourishing medical societies in America at this time. They put out many hundreds of studies

⁴¹ *Medical and Surgical History*, vol. 1 part 3, 159.

⁴² *Medical and Surgical History*, vol. 1 part 3 121.

⁴³ Encyclopædia Britannica. American Medical Association. Accessed November 14, 2007, Encyclopædia Britannica Online: <http://search.eb.com/eb/article-9006124>

⁴⁴ American Medical Association homepage. AMA History. <http://www.ama-assn.org/ama/pub/category/1923.html> (accessed November 15, 2007).

independently of European research and provided a major venue for American physicians to advance their learning and refine their methods.

Independent Research

This self-improvement process also occurred through hands-on practice and independent research projects. The war forced many hundreds of country doctors to become expert trauma surgeons, and taught them anatomy and physiology in ways they never saw before. Treating the plethora of new and dramatic wounds broadened their knowledge of how the human body works, and allowed many scholarly contributions to be made.

Though it may make some of us squeamish, one of the main ways Civil War surgeons would further their medical understanding was through autopsies of fallen soldiers. The *Medical and Surgical History* contains many thousands of case studies, and many of these that had fatal terminations were immediately followed by autopsies, which were often illustrated.⁴⁵

Perhaps the most important way American physicians stayed on top of their field was through their own independent studies, carried out before, during and after the war. There are quite a few outstanding figures in this period that made many contributions to the progress of medical science, and helped spread their knowledge to their peers.

John Julian Chisolm, from Charleston, South Carolina, was a prodigious researcher and medical school professor who studied extensively in Europe, observing

⁴⁵ *Medical and Surgical History*, vol. 2, part 2, p. 150 describes a rare autopsy of a soldier with a bayonet wound, and on p. 185 there is an extensive description (with illustration) of a post-mortem performed on a soldier wounded in the thorax by a musket ball.

military hospitals during the Second Italian War of Independence and studying diseases of the eye and ear. He was one of the world's foremost experts on eye surgery who wrote more than 100 articles for various medical organizations and later became the dean of medicine at the University of Maryland. One of his most important contributions was his *Manual of Military Surgery for the Use of Surgeons in the Confederate States Army* in 1861, which proved invaluable for Confederate surgeons. The demand for this book was so great that two more editions (with additions) were hastened into print before the war was over.⁴⁶

Francis Peyre Porcher, also from South Carolina, was a rigorous scientist who studied in Paris, receiving training in pathology and microscopy from highly regarded European scholars. His most important work was his *Medical Botany of the Confederate States*, that provided invaluable aid to Confederate surgeons who were strapped for medicines and resources.⁴⁷

In the preface to this work, Porcher reveals his dedication to scientific accuracy, as well as his extensive correspondence with other authorities, both European and American. His approach to medicinal botany is strictly chemical and empirical, setting him far above the many quacks and peddlers that offered natural remedies at this time. He explained that chemical analysis of medicinal plants could "reveal precisely what it is upon which their powers depend." Through applying the scientific method to botany,

⁴⁶ *American National Biography*, s.v. "Chisolm, Julian John" 1999. See also Ruehlman, Debra Chisolm. "J.J.Chisolm,Civil War surgeon." *American Journal of Health-System Pharmacy* 59, no. 21 (November 01, 2002): 2118-2119. Academic Search Premier, EBSCOhost (accessed November 5, 2007).

⁴⁷ *American National Biography*, s.v. "Porcher, Francis Peyre."

Porcher not only expanded physicians' knowledge of herbal medicines and how they worked--he helped medicine evolve into a more rigorous and tightly governed discipline.⁴⁸

Another example of fine medical scholarship is found in the life of Dr. Joseph Jones, from Georgia. He followed the traditional course of study for physicians of this time, getting his MD from the University of Pennsylvania. Jones was remarkable for his work during the Civil War, and the extensive studies he made of Confederate military hospitals. He was determined to learn as much as possible from the war, and his inspections of Confederate military hospitals (most notably the Andersonville Prison) contributed a great deal to their knowledge of gangrene. He, like many others, did his best to promote sanitary conditions, and share his knowledge with his contemporaries. He published more than 100 different papers in many prominent medical journals.⁴⁹

Dr. Jones's love for medical science is clearly revealed in his personal letters. He frequently wrote home about his more interesting patients as well as his own pet projects. In a letter to his father he writes: "My great design in analyzing the blood of various animals has been to fit myself for investigations in the diseases of man."⁵⁰ He (like Francis Porcher) was also interested in the chemical virtues of plants and minerals. He took on the sizeable responsibility of organizing the large collection of a German

⁴⁸ Porcher, Francis Peyre. *Southern Fields and Forests, Medical, Economical, and Agricultural, being also a Medical Botany of the Confederate States*. (Charleston, SC: Steam-Power Press of Evans & Cogswell, 1863).

⁴⁹ *American National Biography*, s.v. "Jones, Joseph."

⁵⁰ Myers, Robert Manson. *The Children of Pride* (New York: Popular Library, 1972), vol. 1, 375. These books record the personal letters of this large Confederate family, including Dr. Jones.

naturalist, with the goal of “showing not only the appearance but also the chemical constitution of nearly every mineral upon the face of our globe.”⁵¹

He was also closely involved with medical academia. He wrote to his mother while serving on the faculty of the Medical College of Georgia, telling her of his recent nomination to the chair of physiology and chemistry at a medical school in Brooklyn. The post was offered to him by a Dr. Austin Flint, who Jones described as “one of the most celebrated American medical writers and teachers.”⁵² He also studied with the German chemist Justus von Liebig, who pioneered the study of biochemistry.⁵³

Chisolm, Porcher, and Jones exemplify the spirit of scholarship in American medicine, but they are only a few examples. Many other physicians throughout the nineteenth century were actively engaged in their own research projects, contributing to the ever-growing body of medical knowledge.⁵⁴

Many more contributions were made by doctors working in hospitals, who observed patterns of recovery and correlated them with the types of wounds sustained. Drs. Mitchell, Morehouse and Keen (Civil War surgeons that worked in the Christian Street Hospital, in Philadelphia) published seminal research on “flesh wounds involving the larger nerves” that they made through treating and observing wounded soldiers.⁵⁵

⁵¹ Ibid, 307.

⁵² Ibid, 518.

⁵³ *Challenges and Triumphs*, 46.

⁵⁴ For more information on American medical scientists during this time see Bollet’s chapter in *Challenges and Triumphs* on “Sects and Science: Civil War Medicine in Context.” See also the article in Encyclopedia Britannica online entitled “The rise of scientific medicine in the 19th century.”

⁵⁵ *Medical and Surgical History*, vol. 2, part 2, 461-2.

War experience also taught American physicians that excisions of the gangrenous elbow didn't lessen the mortality rate, compared to amputations.⁵⁶ This opinion contradicted the prevailing medical wisdom of the time, as expressed by the "most enlightened and sagacious observers in several European campaigns."⁵⁷

These contributions highlight the productivity and originality of American researchers in the nineteenth century. These compilers and researchers didn't just sit still; they used the war to improve themselves and add to the body of medical knowledge.

Conclusion

Though images of squalor, infection and death will always be attached to Civil War medicine, there is a silver lining to be found. Evidence clearly shows that the United States had an active community of medical scholars that worked throughout the nineteenth century, and used the Civil War as a laboratory to further innovations in many areas of medicine. The exhaustive collections of data compiled in the *Medical and Surgical History* covered pathology, surgery, epidemiology, and even microbiology. The doctors that did the work and compiled the results weren't just surviving; they were searching, testing, and corresponding, with the aim of expanding medical knowledge.

Their dedication to medical research and steadily-improving methodologies laid the groundwork for the practice of medicine as we know it now. Learning about these doctors and researchers helps combat the popular image of the ignorant, callous surgeon sawing off limbs, and instead shows us how medical knowledge grew throughout American history, laying down a foundation of excellence that continues today.

⁵⁶ An excision attempts to cut away gangrenous bone and tissue in small, discrete portions rather than amputating.

⁵⁷ *Ibid*, 903.

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**Southern Scholars Honors Program
Senior Project Proposal Information Sheet**



Name Jonathan Mills

Date 1-17-08

Major History

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A significant scholarly project, involving research, writing, or special performance, appropriate to the major in question, is ordinarily completed the senior year. The project is expected to be of sufficiently high quality to warrant a grade of "A" and to justify public presentation.

Under the guidance of a faculty advisor, the Senior Project should be an original work, should use primary sources when applicable, should have a table of contents and works cited page, should give convincing evidence to support a strong thesis, and should use the methods and writing style appropriate to the discipline.

The completed project, to be turned in in duplicate, must be approved by the Honors Committee in consultation with the student's supervising professor four weeks prior to the last day of class for the semester the project is turned in. Please include the advisor's name on the title page. The 2-3 hours of credit for this project is usually done as directed study or in a research class.

NOTE-Senior Project Proposal Due Date: The senior project proposal is due in the Honors Program Director's office two weeks after the beginning of the semester the project will be completed. The proposal should be a detailed description of the Honors Project's purpose and proposed methodology.

Keeping in mind the above senior project description, please describe in as much detail as you can the project you will undertake. Attach a separate sheet of paper.

Signature of faculty advisor Lisa Diller

Expected date of completion Nov. 2007

NOTE: An advisor's final project approval does not guarantee that the Honors Faculty Committee will automatically approve the project. The Honors Faculty Committee has the final vote.

Approval to be signed by faculty advisor when the project is completed:

This project has been completed as planned (date) 12/5/07

This is an "A" project A

This project is worth 2-3 hours of credit 3

Advisor's Final Signature Lisa Diller Date: 1/28/08

Chair, Honors Committee Mark Peach Date Approved: 16 April '08

Dear Advisor,

- (1) Please write your **final** evaluation on the project on the reverse side of this page. Comment on the characteristics that make this "A" quality work.
- (2) Please include a paragraph explaining your specific academic credentials for advising this Senior Project.



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Jonathan Mills
Civil War Medicine

My credentials for evaluating Jonathan Mills' work lie primarily in my knowledge of the process of researching and writing. I have experience in finding primary sources and evaluating their usefulness for understanding the subject. While not an expert on the Civil War itself, I have experience in reading the historiography of a subject, finding a question, and then finding relevant evidence. I have done this in my own dissertation and I have supervised dozens of history majors in doing this for their senior thesis.

Mills has ventured into the realm of popular lore regarding medical practices during the Civil War and he decisively asserts that counter to traditional notions, physicians were not merely surviving this crisis, but were continually improving their techniques and keeping up with the latest information. Mills has analyzed the formation of a modern profession in America and argues that American physicians during the Civil War were able to build on their professional organizations and the academic practices of the pre-war period, all of which allowed them to make huge strides during the war years.

Mills' main source is the mammoth *Medical and Surgical History of the War of the Rebellion*, and he uses it to good effect, not only for the information it contains, but as itself a demonstration of how the medical profession was not only in survival mode during the war—but actively improving itself. Mills illustrates his general examination of the medical innovations and standards with examples from specific surgeons in the field, and his argument would be even more lively and effective if he had been able to do this more thoroughly. His writing is clear and efficient, but this reader wished he had been able to take his analysis just a bit deeper as he drops a few intriguing hints regarding the conclusions of the *Medical and Surgical History*.

While the implications for the profession of their ability to "leap ahead" during the war years could have been teased out a bit more, Mills has made a lively contribution to the study of how a profession grows during a time of crisis. He also reminds us of the dangers of one-dimensional assessment as he takes his place among historians counter-intuitive history.

Lisa Clark Diller

Professor of History

Thesis: 47/50
Clarity/Flow: 48/50
Documentation: 46/50
Technical Writing: 47/50
Presentation: 50/50

Total: 238/250
Grade: A