

Photography and the Army Medical Museum, 1862-1945
by Michael Rhode

The Army Medical Museum was founded as a direct result of medical conditions in the Civil War. As the Civil War began, the state of the Union Army Medical Corps could only have been described as "pathetic". While medicine itself was still what we would consider primitive, the Corps had made no special effort to improve itself. The Union Army did not even have an ambulance, and it was not until the second year of the war that Dr. Jonathan Letterman developed a standard procedure for removing the wounded from the battlefield. Almost none of the standards of modern medicine were available. Most doctors trained by short apprenticeships, and medical school consisted of two years of instruction that would now be undergraduate work. Since germ theory did not exist bacteria and viruses were not recognized as the cause of disease. Instead vague particles called "fomites", which emanated from unhealthy areas or infected material, were thought to be the cause. No sanitary measures were instituted, so camps were foul places. Anti-sepsis, or the cleaning of anything in contact with the wound, was still in the future. Blood typing and transfusion did not exist. Penicillin and antibiotics were 80 years in the future. X-Rays would not be discovered by William Roentgen for another 30 years. Doctors extracted bullets from wounds by reaching in with their fingers and cleaning out the bullet and any other loose material. They then wiped their hands on their clothes and went on to the next case.

Dr. William Hammond was appointed the Army Surgeon General in April 1862 after his predecessor, Dr. Finley, resigned over disagreements with Secretary of War Edward Stanton. Thirty-three years old, Hammond was at the bottom of the promotion list because he had rejoined the Army after resigning two years earlier. His elevation from lieutenant to general made him many enemies, but before they toppled him he had steered the army toward a scientific approach to military medicine. Among his first actions was the creation of the federal government's first medical research facility (although it was not described in those 20th century terms). Hammond founded the Army Medical Museum in May 1862 with an order which read:

As it is proposed to establish in Washington, an Army Medical Museum, Medical officers are directed diligently to collect, and to forward to the office of the Surgeon General, all specimens of morbid anatomy, surgical or medical, which may be regarded as valuable; together with projectiles and foreign bodies removed, and such other matters as may prove of interest in the study of military medicine or surgery.

These objects should be accompanied by short explanatory notes.

Each specimen in the collection will have appended the name of the medical officer by whom it was prepared.

By the beginning of August, Surgeon John Brinton was appointed the Medical Museum's curator and Joseph Woodward his assistant. Like Hammond, Brinton was aggressive about pursuing medical knowledge and was soon scouring the battlefields of

the mid-Atlantic for specimens. The information collected during the war was to be compiled as the Medical and Surgical History of the War of the Rebellion. Completed by the late 1880's, this massive undertaking included over 6,000 pages in its six volumes.

Brinton understood the uses of photography in medicine: it was more accurate, quicker and potentially more comprehensive than the traditional artistic approach. Eventually it would be cheaper as well. He soon employed photographer William Bell, apparently on contract. Bell, who would later receive fame for his work out west on the Wheeler expedition of 1872 and in Patagonia on the 1882 Transit of Venus expedition, was a local Washington photographer available to photograph soldiers' wounds that Brinton and his successor Dr. George Otis found interesting. Much of Bell's work in the early years of the war centered on photographing the specimens collected by the Museum. These specimens were usually of gunshot wounds and showed how the bullet had fragmented the bone. When viewing these early photos there are two important points to keep in mind. America's last major war had been the much smaller conflict with Mexico thirteen years earlier in 1846-1848. As a result, most doctors, whether career military officers or newly-enlisted civilians, had almost no experience with gunshot wounds, especially those made by the newly-developed Minié ball. Minié had developed a conical bullet that came out of a rifled barrel; this high-speed bullet caused a significantly worse wound than the older soft lead ball. Secondly, no one knew what a wound looked like inside of damaged tissue as x-rays would not be discovered for another 30 years.

These first Medical Museum photographs were published in sets of fifty, titled Photographs of Surgical Cases and Specimens or distributed individually as Surgical Photographs. The first volume of 50 photographs, taken by Bell's anonymous predecessor, was printed in an edition of 40 sets which were distributed to Medical Directors in the Union Army (Lamb: History of the US Army Medical Museum, p.35). Completed by January 1869, the next three volumes contained photographs 51-200 mostly taken by Bell. These were made available to interested parties, including the College of Physicians of Philadelphia and the Royal College of Surgeons in Dublin, Ireland (Lamb, p. 52). In 1871 the first five volumes were formally published as Photographs of Surgical Cases and Specimens Taken at the Army Medical Museum, and a partial index to the set, written by Otis, was published around this time. (Lamb, p. 61). The later volumes more frequently showed patients who survived successful operations that a doctor could consider using himself. They also showed problems arising from improper treatment and odd pathological conditions that had no possible treatment. The final three volumes had apparently been published by late 1881 to complete an eight-volume set of 400 photographs. Bell had long since left the project and was replaced by other photographers who were anonymous except for E.J. Ward. Ward did many of the photographs in the last three volumes. Selections of these photographs were also bound as Gunshot Fractures of the Femur by George Otis.

Through the end of the century, the photographs were printed, reprinted, retouched and replaced as the wet collodion glass plate negatives broke. Several of the 1/4" thick

negative plates are still maintained by the Museum's archives. Amusingly, on some soldiers, fig leaves have been discretely painted on the negatives and at least one soldier actually had a leaf tied around his waist when the picture was taken! After the Museum moved into Ford's Theatre in 1866, the photos frequently showed pensioners who, after filling out a pension application in the first floor Pension office, had their pictures taken in the third floor Museum. The Surgeon General's Library, now the National Library of Medicine, occupied the second floor and shared staff and resources with the Museum.

During the war, dysentery and diarrhea were such major causes of death that, on the Union side, more soldiers died from dysentery than were killed in action. In attempting to investigate the diseases, photos of wet tissue colon specimens were being taken (probably also by Bell and Ward). These photographs were never published as a set although several were bound in a volume called Camp Fever and Camp Dysentery; most were available only as tipped-in heliographs in the Medical and Surgical History's second medical volume. Woodward whose microscopic work enabled him to detect bacteria, never accepted their role in causing disease (even as Lister's antiseptic system was proving him wrong). As interest shifted toward the prevention of dysentery rather than the anatomical effects after death, the photographs were mostly forgotten and the only surviving prints may be the ones stored here.

E.J. Ward's major work for the Museum was photographing specimens in a cartes-de-visite format. The prints were then given to an artist who engraved them for publication in the Catalog of the Army Medical Museum and the Medical and Surgical History of the War of the Rebellion.

When President Lincoln was assassinated, the Museum, in addition to performing the medical task of his autopsy, printed 1,500 photographs of three of the suspects, John Wilkes Booth, David Herold, and John Surratt. These were mounted on a reward poster in April 1865; after the three were captured the War Department quietly revised the poster so to replace the Herold's school portrait and show a picture of Surratt that was actually him. Rounding out its role in the tragedy, Museum doctors assisted Surgeon General Barnes in Booth's autopsy aboard the armored monitor USS *Montauk* at the Washington Navy Yard.

The Museum's first attempts at registration and cataloging systems had proved unwieldy, and in 1876 the system was revamped. Photographs were affected in that the most interesting pictures, those donated by outside contributors, were placed together as the Contributed Photograph (CP) collection. Earlier collections were renumbered into this series as well. The collection includes photos from 1862 until 1917. While much of this collection (over half in fact) is missing and is frequently in private hands, the pictures remaining in the Museum include treasures. There are over 600 Civil War photos, mostly of wounded soldiers but also of ambulances and hospitals. Other images include preparation of smallpox vaccine from a cow with cowpox, bacteriology photomicrographs by George Sternberg (one of the fathers of bacteriology), Army hospitals in the 1880's, and early prints of X-rays called skiagraphs.

By virtue of its Army sponsorship and a broad definition of medicine, the Museum was instrumental in the anthropological research on American Indians that flourished in the late 19th century. Surgeons at Western posts frequently sent east artifacts and biological specimens. Around 1876, under Otis' direction, a short series of Anatomical Photographs was taken. These showed crania of various Indian people for use in comparative anatomy and anthropology. As the Smithsonian Institution moved into the anthropology field, the Museum dropped out. Most of the crania, the photographs and their negatives were transferred to the National Museum of Natural History's anthropology division. About the collection of some specimens, Otis wrote in an 1871 monograph, "Many illustrations of multiple gunshot perforations of Indian crania have been brought to the Museum from Sand Creek, Colorado, the scene of the atrocious massacre of friendly Indians by the troops under Colonel John M. Chivington." Otis also noted that of the 38 cases of gunshot fractures of the head recorded by the Surgeon General's Office between 1865 and 1871, only 7 recovered. (Circular #3)

A small series which included clinical photographs of patients with pathological conditions was taken at the Museum between 1887-1901. It was called the New Series. The run apparently included about 100 photographs. These were never published and several are now missing. While these photographs were less relevant to the Museum in the last century than those of gunshot wounds, these lesions and tumors are a far better reflection of the Armed Forces Institute of Pathology's work in the twentieth century.

Someone, possibly Woodward, liked the name enough to start a new New Series for photomicrographs. Photomicrographs had previously been numbered under the Microscopical Series of accession numbers, but with the renumbering of the 1870's this series was ended. Unfortunately, both New Series used the same numbers. Notwithstanding Woodward's failure to accept bacteriology, much of the work he did with photomicrography was ground-breaking. He pioneered, in America, the use of aniline dyes, which became standard stains for microscope slides. With Major Edward Curtis as an assistant, Woodward devised an ingenious mechanism for harnessing the sun's light and separating its components. Sunlight was reflected from a heliostat on a balcony through a microscope and chemical filters onto a sensitized glass plate to produce the image. Seeking a means independent of the weather, Woodward had produced pictures with magnesium lamps and electric lights by 1870. He preferred the electric lights and reported to the Surgeon General that he was able to "sit down quietly of an evening, and during 4 hours of work to produce from 12 or 30 negatives, or more." Woodward also acquired photomicro-daguerreotypes done by Prof. JW Draper, who had produced them five years after the technique was invented in France. Draper had them engraved to illustrate his book Human Physiology in 1858. Woodward reproduced them as prints for the Centennial Exposition.

In 1876, the Army participated in the Centennial Exposition in Philadelphia. The Army Medical Museum was among the exhibitors and also produced a small run of photos

of the Centennial Exposition entitled Hospital of the Medical Department United States Army Photographs, International Exposition, 1876. In addition to showing modern equipment used by the Army, the pictures demonstrate the clever design of Army hospitals and equipment through wonderful models. Some of these models still remain on display in the Medical Museum. Woodward's photomicrographic work and the Surgical Photographs, with fig leaves strategically placed, were also displayed at this exhibit.

Until the outbreak of the Spanish-American War, photographs seem to have been put in either the Contributed Photos (including pictures taken in the museum) or the New Series II/Woodward collection. Much of the Museum's work was in bacteriology and the photographic collections during this period are not as interesting. In 1898 the museum had a photographer, Dr. William Gray, on board the hospital ship, *Relief*, which was stationed off of Cuba. A new collection was started. It was known as the Army Medical Museum collection and contains photographs made by Dr. Gray, who doubled as the radiographer. Some of this material was used in The Use of the Röntgen Ray by the Medical Department of the United States Army in the War with Spain (1898) by Dr. William C. Borden. However, the Medical Department had been unprepared for this war as it was with the Civil War and little attention was paid to the Museum. The Director of the Museum and Library Division, Col. Dallas Bache reported, "The contributions to this Museum from the active theatre of the recent war with Spain and from the extensive field of subsidiary operations, have been so few and unimportant that it seems desirable to renew the attention of Medical Officers to this important subject." After the war, the Army Medical Museum collection was used for photos taken by the museum mostly concerned with bacteriology and illustrating military medical manuals.

World War I produced another bonanza of photographs as a result of the Museum's photographic team in France. Early in the war, the Museum had organized an Instruction Laboratory in Washington run by Lt. Thomas Evans, who had experience in the fledgling movie industry. Evans and his successors work became well known with the notorious anti-venereal disease film "Fit To Fight". Roy Reeve was hired to run still photography and held the post for four decades. In 1918 the Signal Corps monopoly on photography in the American Expeditionary Force was lifted, and Museum Unit #1 was sent to France. The Museum photographers followed the front until the Armistice, when they were ordered to Paris. The Paris photographic bureau was staffed by both Signal Corps and Medical Museum photographers. Each group shared its photos but retained its negatives. The photographers returned home with about 10,000 photographs. Many of these are duplicated in the Signal Corps collection now at the National Archives; it is now unclear which team actually shot the photographs. This collection of glass negatives was used in compiling the medical history of the war and became known as the World War I/Reeve collection. The collection was further split between the Museum and the National Library of Medicine when it was created in 1956. Many of the photographs had become history of medicine material and went to the Library.

Between the wars, the Museum continued its pathological work and the

photographic collections are filled with photomicrography. During WWII, the museum sponsored a Museum and Medical Arts Service (MAMAS) detachment which worked overseas. The Museum was also the central location for medical photographic education with about 5,000 prints arriving from 60 hospitals across the United States in the last two years of the war. This role as a central repository for medical photography has continued today in the Medical Illustration Service Library. However, the glory days of Museum photography ended with the war. The Museum itself was relegated to division status of the newly-created Armed Forces Institute of Pathology. The Museum has spent much of the past 45 years in storage or substandard locations while its collections were dispersed to other divisions. In fact, all of the photographs discussed herein were in possession of the Medical Illustration Service until the 1980's.