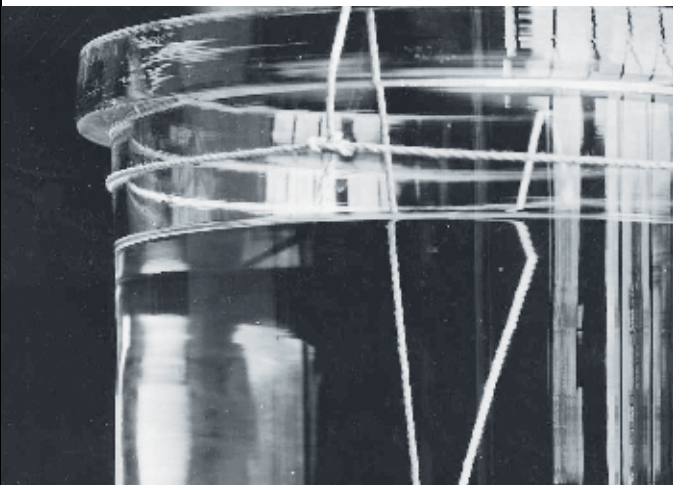


CHAPTER 3



ROAD TO AN INSTITUTE OF PATHOLOGY, 1919–1945

[Opposite] General Merritte W Ireland, surgeon general from 1918 to 1931. Frustrated by the lack of trained pathologists at the end of World War I, he established the position of chief of laboratory service in Army hospitals, at the same level as chiefs of the medical and surgical services. The new position opened up the previously blocked path to promotion for pathology specialists. Ireland also made arrangements for instruction of medical officers in pathology at the Government Hospital for the Insane (St Elizabeth's), in Washington, DC; at the Brady Laboratories of the hospital in New Haven, Connecticut; and at the Army Medical Museum, where specialized instruction in neuropathology was already underway.^{1(p189)} (NCP 3569)



As World War I came to a close, the Army Medical Museum—already incorporating a progressive vision and performing leading-edge medical research—was poised for a long transition leading to the development of an institute of pathology. Neither consistently orderly nor precise, the institution’s “forward march” was frequently replaced by a “half-step march” or “mark-time march”; even a “rear march” entered the picture on more than one occasion. But slowly and deliberately, between 1919 and 1945 the museum embarked on a transformation into an institute focused primarily on pathology.

In his 1920 annual report, Surgeon General Merritte W Ireland described the Army Medical Museum as a “very valuable connecting link between the Medical Department of the United States Army and the general medical profession of the United States, from the standpoint of scientific medicine and surgery.”^{1(p195)} Ireland encouraged use of the museum’s collections by civilian pathologists, believing that “only in this way will the Museum fulfill its larger function of being not only a place for the exhibition of pathological and other material, but a great instruction center in pathology and epidemiology.”^{1(p196)} This view of the museum was not new; it was expressed by Surgeon General William Hammond at the time of the museum’s founding in 1862, and echoed by Colonel John Shaw Billings in his address to the Congress of American Physicians and Surgeons meeting in 1888. But Ireland’s emphasis was based as much on practicality as on philosophy. In the previous year’s annual report, Ireland had written: “At no time during the war was there a sufficient number of trained pathologists in the service. Pathology is





a subject in which a large experience is acquired slowly, and, in spite of efforts to train additional men by the arrangement of special courses of instruction, the number of trained pathologists could not be greatly increased during the war.”¹⁽¹⁸⁹⁾

The surgeon general’s view was complemented by the convergence of leaders at the museum interested in pursuing pathology. Two curators in particular can largely be credited with taking the museum in new directions: Major George R Callender, the 12th and 14th curator (1919–1922 and 1924–1929), and Colonel James E Ash, the 15th and 20th curator (1929–1931 and 1937–1946) and first director of the Army Institute of Pathology (1946–1947).

Major Callender was the first practicing pathologist to head the Army Medical Museum, which by 1920 had become the foremost institution in the nation in collecting, preserving, and exhibiting the raw materials of pathology. Under Callender’s leadership, the museum seized the opportunity to create what would be called the “registry movement.” In October 1921 Callender finalized a cooperative agreement between the museum and the Academy of Ophthalmology and Otolaryngology to create what eventually became the Registry of Ophthalmic Pathology, the first of the registries that would make up the American Registry of Pathology (ARP). Under this arrangement, the Academy’s members furnished pathological materials the museum lacked, while the museum supplied a home for the Academy’s collections.

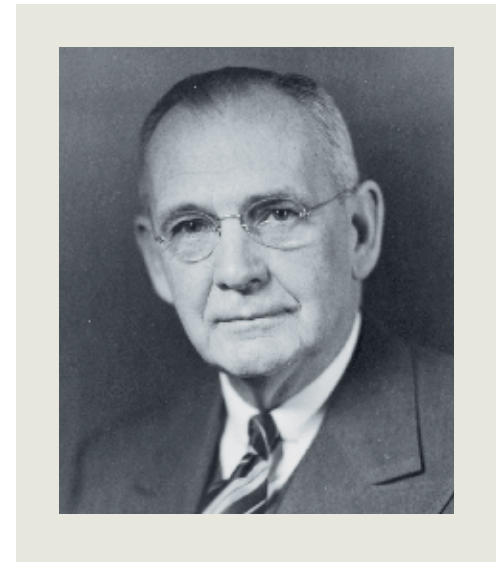
[Top] Colonel Charles F Craig, 11th curator of the Army Medical Museum, January–September 1919. Colonel Craig was highly respected for his distinguished studies of dengue fever, filariasis, the dysenteries, and most significantly, malaria and its control. Following his retirement from the Army, he became a professor and chairman of the Department of Tropical Medicine at Tulane University. (MIS 62-06205)

[Bottom] Major George R Callender, 12th and 14th curator of the Army Medical Museum, 1919–1922 and 1924–1929. A graduate of Tufts Medical College and the first practicing pathologist to head the Army Medical Museum, Major Callender led the museum’s “registry movement,” working with several professional organizations to establish many of the museum’s dedicated registries in the 1920s. (Reeve 47580)

This arrangement was strengthened by a gift from Dr James Moores Ball, a St Louis ophthalmologist, of his entire collection of historical and clinical ophthalmic materials. The Ball collection became a cornerstone in building the ARP. The collection's 136 items of historical value alone would have been a major donation to the museum, and the gift also included a varied collection of ophthalmic instruments, large numbers of microscopic slides, nearly 500 gross pathological specimens, and more than 1,000 pictorial items. Another boost occurred in 1922, when the museum was designated as the location of the central exchange for pathology specimens of the American and Canadian sections of the International Association of Medical Museums, providing for the preservation of the medical research of these museums, including slides and specimens from original research. Callender also worked with the Society of American Bacteriologists to obtain its type cultures. Under an agreement that went into effect in 1922, the museum became the depository of the purebred strains of every differentiated bacterium of interest to medicine, from which subcultures of particular strains were supplied upon request.

These developments were followed by creation of a registry in lymphatic tumors in 1925, a registry in bladder tumors in 1927, and the formal establishment of the ARP in 1930. The Dental and Oral Pathology Registry was added in 1933, which served to reactivate an 1895 arrangement with the American Dental Association designating the museum as the national depository for the organization's dental specimens. In 1935, the ear, nose, and throat cases in the originally combined ophthalmic and laryngic registry were separated out to become the Registry of Otolaryngic Pathology. Two more registries were added in 1937, for tumors and dermatology.

During his second tour of duty at the museum, Colonel Ash became the principal protagonist for expanding the registry movement. Under his leadership, registries for kidney tumors, neuropathology, prostatic tumors, orthopaedic pathology, veterinary pathology, and gerontology were integrated into the ARP, which helped form a vital link between practitioners of the various medical specialties and museum staff. In all, within 30 years of Callender's creation of the first of the museum's registries, 22 registries had been established.



Dr Howard T Karsner, a prominent pathologist, who, along with Major Callender, was influential in forming the American Registry of Pathology in 1930. (MIS 05-6519-2)

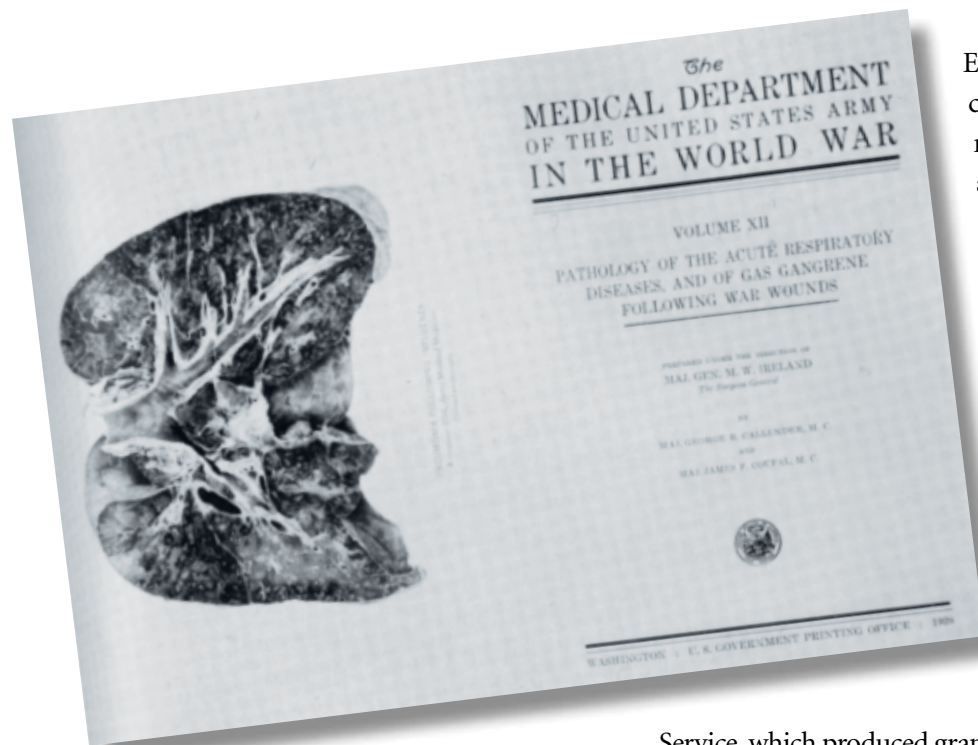
While the registry movement advanced, during the period 1919–1945 the Army Medical Museum continued to struggle with two issues that had plagued it since 1862: lack of trained staff and lack of space. The museum's collections had more than doubled in World War I, increasing from approximately 48,000 to more than 100,000 specimens. Staff developed a new filing system in an attempt to connect each specimen with all available pertinent information, such as clinical histories, protocols of autopsies, photographs, X-ray plates, tissue blocks, microscopic slides, and anything else that might shed light on the pathological condition of the specimen. And all this was done by a small clerical staff that had been severely cut immediately after the war. Even more challenging was the problem of finding space in an already overcrowded building for display or even storage of the influx of materials. No amount of reshuffling the exhibits in the 30-year-old building could produce enough space for either a proper display of all the exhibit materials or effective use of every study collection.

The first step toward acquiring additional space came in 1919 when Congress appropriated \$350,000 for the purchase of land contiguous to Walter Reed General Hospital. This was followed by an additional grant in 1922 of \$44,109. The concept was to create a great medical center, with the Army Medical School, the Surgeon General's Library, the Museum, and the hospital collocated for mutual support—a plan that like so many others was never fulfilled. The Army Medical School moved from its rented quarters on Louisiana Avenue to its new building on the outskirts of Washington in 1923; the Surgeon General's Library, under its new name, the Army Medical Library, stayed on Independence Avenue for another decade before moving to the grounds of the National Institute of Health. By 1933 it was clear that a new museum building, for which a site had been purchased 11 years earlier, had become one of many victims of the Great Depression. Another attempt to obtain new and larger quarters was initiated in the late 1930s, and by 1940 the House of Representatives' appropriations committee approved \$130,000 for drawing up plans and preparing specifications. Acting under this authority, the secretary of war and the surgeon general selected the New York firm of Eggers and Higgins, whose works included National Gallery of Art, to design the new building. Preliminary plans were submitted by the firm in February 1941 and approved that August. Although many museum leaders favored a building next Walter Reed General Hospital, required involvement by the National Park and Planning Commission resulted in a location chosen just east of the Library of Congress. Work on plans continued until December 1941, when Pearl Harbor and the nation's full-scale participation in World War II once again put on hold any immediate opportunities for the Army Medical Museum to find a new home.

Throughout this period, the Army Medical Museum faced an identity crisis, as various surgeons general and curators debated whether the institution was still in fact a museum, as its name implied, or whether it had become and should remain an institute devoted mainly to medical research and pathology diagnostics. By the early 1930s, because of restricted space and reduced staff, the museum's exhibit function had definitely deteriorated. In a 1935 report, Brigadier General Raymond O Dart, the museum's 18th curator, wrote: "It is an easily verified fact that the Army Medical Museum has slipped steadily backward from the first rank of medical museums which it occupied immediately after the World War until it is no longer regarded as an important place for the dissemination of information concerning museum technique and display. Meanwhile the very fundamentals of museum display have been changed and other institutions have assumed the leadership in this field which was formerly held by the Army Medical Museum. The reasons for this state of affairs are quite obvious when one considers the history of the organization during the past few years."¹(p228)

Thanks in large part to General Dart, by 1938—when for the first time museum visitors for the year surpassed the 100,000 mark—much ground had been gained in improving exhibits. Many items were put into storage to rid the exhibit hall of its overcrowded and confusing look. Old wooden exhibit cases were retired and new cases were built. Collections of microscopes, ophthalmoscopes, hearing aids, and stethoscopes, each collection as comprehensive as any to be found in the world at the time, were exhibited in attractive and meaningful arrangements. Although World War II accessions resulted in even less space for exhibits, during the war years the museum was kept open and updated, drawing visitors at the rate of 200,000 a year.

Although the transition into an institute of pathology was undoubtedly influenced by the experiences of World War I and the subsequent registry movement, the museum's World War II activities solidified the new focus and made General Hammond's 1862 vision a reality. The size of the military exploded during the first year of US participation in the war, as did the amount of materials pouring into the museum. Unlike in World War I, when Army Regulation 40-410 "solicited" the submission of pathological materials, in 1942 the regulation was updated and spoke in the imperative, saying that autopsy, biopsy, and specified surgical materials "will be forwarded as directed."¹(pp245–246) Within a year the museum was receiving 3,500 to 4,000 pathological specimens per month—as many as had been handled in a full year prior to the war. To deal with the influx of new cases, museum staff grew to 20 pathologists (from three before the war), about 60 civilians, and 30 enlisted men and members of the Women's Army Corps.



The year 1929 was marked by the publication of volume 12 of The Medical Department of the United States Army in the World War (the series eventually had 15 volumes). This volume dealt with two subjects judged as most important from a pathology standpoint: the first section of the work, “Pathology of the Acute Respiratory Diseases,” was written by Major Callender; the second, “Pathology of Gas Gangrene Following War Wounds,” was written by Major Coupal. The richly illustrated volume made use of the photography and artwork produced by museum staff during the war. Pictured is the title page and frontispiece, showing the lung in a case of pneumonia following influenza. (Reproduced from: The Medical Department of the United States Army in the World War. Vol 12. Washington DC: Government Printing Office; 1929).

Equally important, the museum established regional centers for histopathology in the laboratories of a network of hospitals throughout the country. Also, as US forces spread to theaters of operations around the world, a system of channeling pathological materials and information back to the museum went along. The system’s intent was to concentrate all significant data and material pertaining to pathologic processes occurring in the Army at the Medical Museum, where it would be available for current professional use and future scientific investigations, as well as for teaching and historical purposes. Other important activities during World War II included research in both common and tropical diseases, the creation of study sets in major pathology specialties, and detailed work by the Army Medical Illustration

Service, which produced graphic pathology representations. In addition to advances in the practice of military and battlefield medicine in general, these developments prompted Colonel Ash to declare that the organization “suffered under the connotation museum, an institution thought of by many as a repository for bottled monsters and medical curiosities. To be sure, we have such specimens. As is required by law, we maintain an exhibit open to the public, but in war time, at least, the museum per se is the least of our functions, and we like to be thought of as the Army Institute of Pathology.”^{1(p250)} This characterization, declared informally in the closing weeks of 1943, was reflected in the January 1, 1944, Curator’s Office Order No. 18. In the order, the “Army Institute of Pathology” appears as a subordinate division of the Army Medical Museum, a relationship that was reversed 2 years later when the Army Institute of Pathology became officially and formally the general designation of the entire operations. 🌱

▲ The American Registry of Pathology

THE OBJECTIVE OF THE AMERICAN REGISTRY OF PATHOLOGY (ARP), as outlined by Major Callender, was to “collect data and specimens from patients, especially those with tumors, with a view to accumulating a sufficient number of instances of each disease to determine its characteristic course, the criteria for diagnosis, and to evaluate methods of treatment.” Callender’s vision for the registry was supported and greatly assisted by pathologist Howard T Karsner. Both believed that the cases for the registry should be from patients living at the time of registration so they could be followed and their outcome ascertained. “The following up of these cases will constitute a considerable part of the Registry’s activities. Diagnosis in the early stages of disease offers the best chance of cure,” Callender wrote, “but early and accurate diagnosis is not possible in the absence of opportunity to observe enough cases to form a basis for reasonable judgments.” Except at large medical centers, too few cases of any one kind were available to afford such opportunity for study. By combining cases from the country as a whole, he observed, it would be possible to obtain considerable numbers of cases and specimens in a much shorter time. The registry was not intended to replace local pathologists; nor was it intended to serve a diagnostic laboratory, Callender said. Rather, it was to be a pathology clearinghouse collecting previously diagnosed cases as well as rare cases, about which more could be learned by obtaining the opinions of several pathologists.¹(pp209–211)

Major James F Coupal, 13th curator of the Army Medical Museum, 1922–1924. During Major Coupal’s tenure a start was made toward a reclassification of the museum’s holdings, using an adaptation of Dr Maude Abbott’s modification of the Wyatt-Johnson museum classification. Under the new system, the anatomical names of tumors and the pathological lesions that produced disease and death were listed, with a number assigned to each of the anatomical terms used. The numbers—listed in accordance with the International List of Causes of Death, a uniform system for reporting deaths—were used as a code. The code was cross-filed so that it was possible to locate specimens by their anatomical names, their pathological classifications, and the names of their contributors. By 1924, the new system had been applied to 5,000 protocols, 4,000 gross pathological specimens, and 4,500 miscellaneous items. (MIS 05-6194-1)



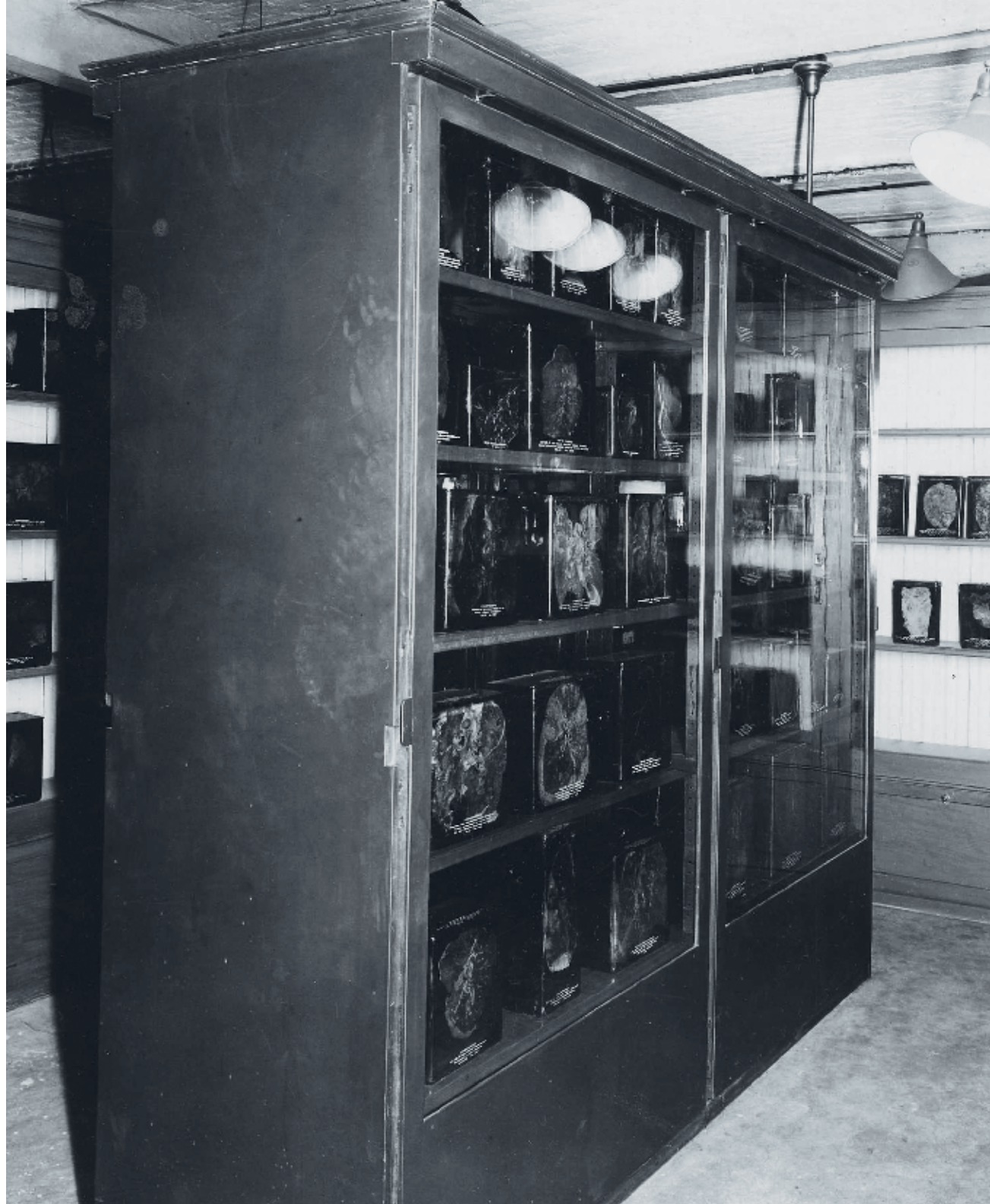




[Opposite] A 1920 photograph of the museum's gross pathological laboratory. (Reeve 30536)

[Top] Members of the Army Medical Museum's Instruction Laboratory work on a motion picture printing machine. The extreme pressure to free up space for new activities meant that by 1920 this function—which had produced so many important educational films during World War I, on such topics as venereal diseases, alcoholism and surgical procedures—was discontinued. This move, however, did not stop the circulation and showing of films already made, both by the museum and the US Public Health Service. (Reeve 489)

[Left and Opposite] A corner of the pathological exhibits in Army Medical Museum in 1925, and (opposite) the main exhibit hall in the early 1930s. During the 1920s, maintaining the museum's exhibits was largely ignored as the focus on creating registries increased, and increasingly demanded more space. Thus, these crowded conditions continued and worsened throughout the decade and into the 1930s, a problem that was recognized but dismissed in the surgeon general's 1929 annual report. "There is an enormous amount of work that should be done in rearranging exhibits and developing the material on hand," the surgeon general wrote, "but it must be put aside for the more urgent current demands of consultation and diagnostic service, which, as the Museum's most important function, has precedence over all other activities."¹(p216) This view and space limitations meant that less than half of the museum's collection could be exhibited, with the rest stored in the basement. Items in storage were periodically examined, and those that had deteriorated or become useless were identified and disposed of. (Reeve 040756; Reeve 73446-2)







[Left] Major TC Jones, Veterinary Corps, registrar of the Registry of Veterinary Pathology, at work in what by 1945 had become the Army Institute of Pathology. The veterinary pathology registry was organized in 1944 in cooperation with the American Veterinary Medical Association. It was one of many registries organized during Colonel Ash's tenure. (NCP 4193A)

[Inset] Colonel James E Ash, 15th and 20th curator of the Army Medical Museum, 1929–1931 and 1937–1946; and first director of the Army Institute of Pathology, 1946–1947. (MIS 80-4079-1)



▲ The Influence of Colonel James Ash

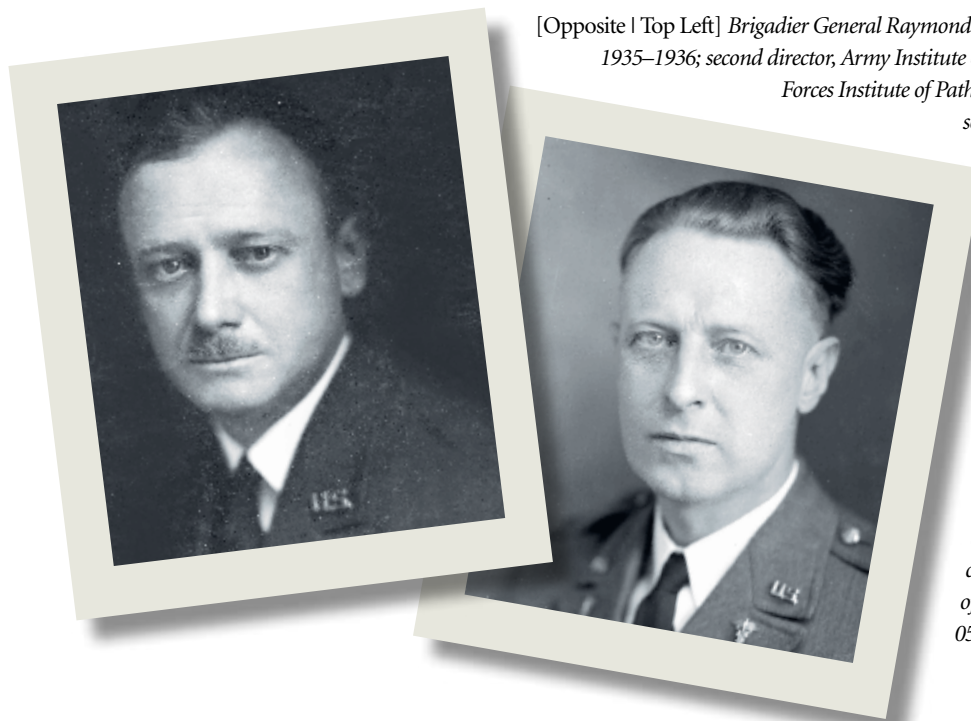
ALTHOUGH KNOWN FOR ADVOCATING REGISTRIES and creating the Army Institute of Pathology during his second term, during his first term Colonel Ash focused on the staff's greatly increased work in diagnosis and consultation, following the surgeon general's Circular Letter No. 2 on February 12, 1929. The circular called to the attention of all Medical Department officers the four-fold function of the museum regarding tissue pathology. These were "to obtain material for instruction and research; to preserve material permanently for reference purposes; to act as a consulting service; and to examine and diagnose surgical, biopsy, and autopsy materials for stations at which adequate laboratory facilities and personnel for such diagnostic work are not available." The availability of this diagnostic service at the museum "apparently is not fully appreciated by the surgeons of all military hospitals," the letter said. The letter also announced that certain hospitals had been designated as centers to which selected portions of tissue might be sent for emergency diagnosis, "when the best interests of the patient necessitate a microscopical diagnosis at the earliest possible moment." Explicit instructions were given for preparation and shipment of specimens and for writing autopsy protocols, both of which were to enter the museum's collection for final study, review, and preservation.¹(pp214–216)

In addition to expanding the registries during his second term, Colonel Ash led efforts to produce atlases, which became one of the strongest ties between the pathologists of the armed services and the medical profession at large. Content of the atlases was similar to that of study sets (discussed below), but with more content, detail, and illustrations. The *Atlas of Tumor Pathology*² dealt with oncology and the diagnosis of malignant versus benign tumors; the *Atlas of Angiocardiography*³ dealt with observation of the heart and great vessels after injection with an opaque liquid; and the *Atlas of X-Ray Myelography*⁴ dealt with X-ray examination of the spinal cord. Other ARP publications included syllabi on various disease conditions, issued in connection with courses of instruction.

In 1985 the Armed Forces Institute of Pathology started the James Earle Ash Lecture series in honor of Colonel Ash's lifetime of contributions and achievements. Since that year, the institute has conducted 21 James Earl Ash lectures featuring some of the top leaders in both military and civilian medicine.

[Left] Major Paul E McNabb, 16th curator of the Army Medical Museum, 1931–1933. Major McNabb led an effort by the museum's photographic section to develop techniques for color photography of both gross and microscopic specimens for display and for use in lantern-slide lectures. Earlier efforts had produced some effective results using accurate photographic prints colored by hand, with the resulting picture reproduced by lithography. A 1932 experiment, carried on by museum photographer Roy Reeve and Joseph Carter of the US Department of Agriculture, built upon these earlier efforts and sought to secure correct coloring by using three-color separation negatives, from which prints were made in blue, red, and yellow. These prints were superimposed upon one another, checked for accurate registration and true color values, corrected by differential printing of the three images, and then mounted.^{1(p218)} The Reeve-Carter process built and improved upon the early photomicrography efforts of Major Edward Curtis and Lieutenant Colonel Joseph Woodward (see chapter one), and proved to be a distinct advance in the development of future systems of producing color prints. (Reeve 49643)

[Right] Major Virgil H Cornell, 17th curator of the Army Medical Museum, 1933–1935. Major Cornell's tenure as curator was highlighted by the establishment of the fourth of the registries and the first to be set up as a part of the ARP: the Dental and Oral Pathology Registry, added in 1933. The 1933 designation produced a more active participation by the dental profession in the development of a full-fledged registry than the museum's 1895 designation as the American Dental Association's the national depository for dental and oral specimens, which had few results. (MIS 05-6191-1)

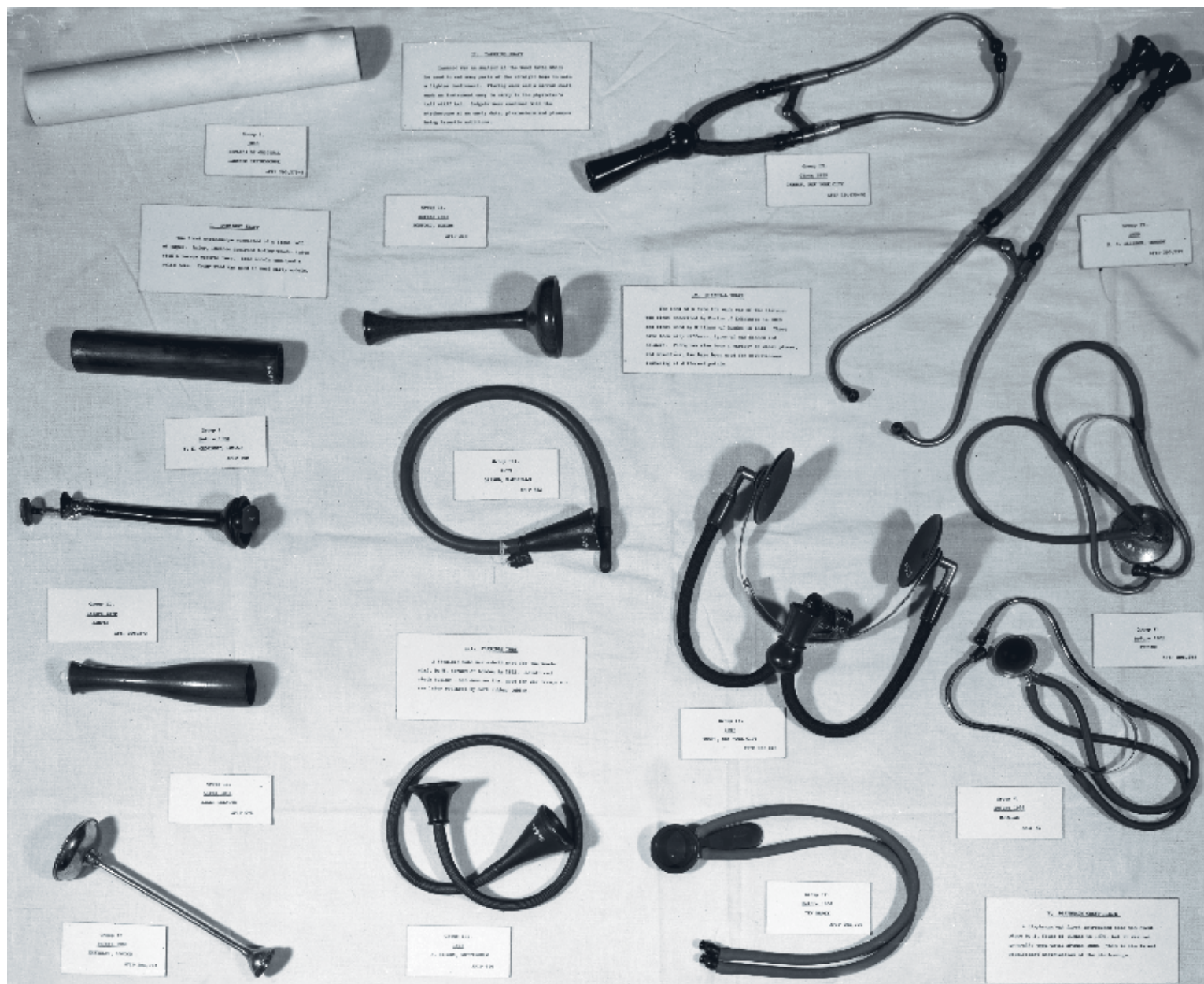


[Opposite | Top Left] Brigadier General Raymond O Dart, 18th curator of the Army Medical Museum, 1935–1936; second director, Army Institute of Pathology, 1946–1949; and first director of the Armed Forces Institute of Pathology, 1949–1950. During his tenure as curator, Dart sought to improve the deteriorating exhibits. Dart Auditorium in the present-day Armed Forces Institute of Pathology is dedicated to the memory of his many years of service to both the museum and the institute. (MIS 05-6214-1)

[Opposite | Top Right] Captain Hugh R Gilmore, 19th curator of the Army Medical Museum, 1936–1937. Captain Gilmore, who also served as acting curator for a few months in 1935 and 1936, shared Brigadier General Dart's views on the deteriorating exhibit function, writing, "due to the decrease in civilian personnel the Museum exhibits have not been kept up to date. Instead of being a leader in its field the Army Medical Museum is rapidly becoming nothing but a storehouse of poorly exhibited pathological specimens."^{1(pp232–233)} (MIS 05-6358-1)

[Bottom] *Medical instruments on display in the Army Medical Museum, undated. (MIS 52-1290-1)*







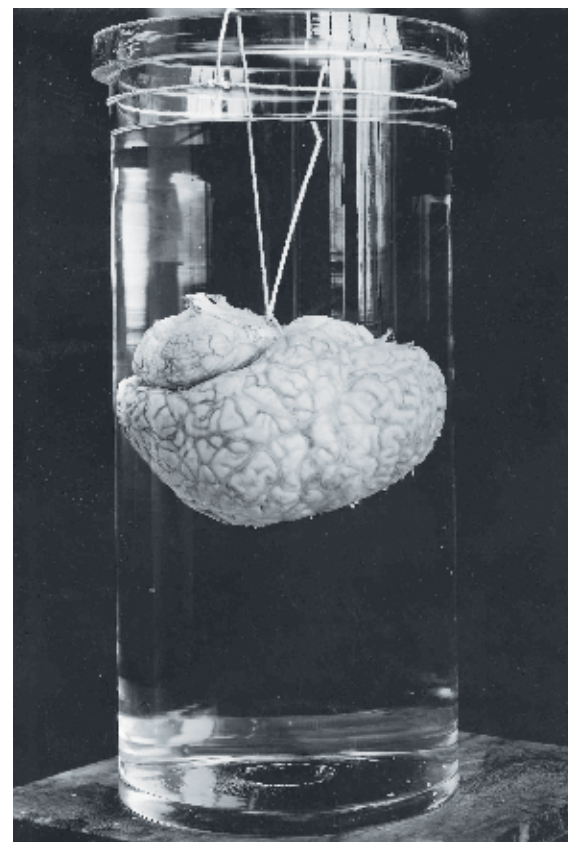
[Opposite] *More medical instruments on display in the Army Medical Museum, undated. (MIS 52-1288-1)*

[Top] *Exhibit on general pathology shortly after World War I. (Reeve 30326)*

[Bottom] *Medical instruments on display in the Army Medical Museum, undated. (Reeve 30324)*







[Opposite] *Dental exhibit, circa 1940.*
(Reeve 70192)

[Left] *1930 photograph of an exhibit case with models produced by the museum's model-making staff.* (Reeve 48762)

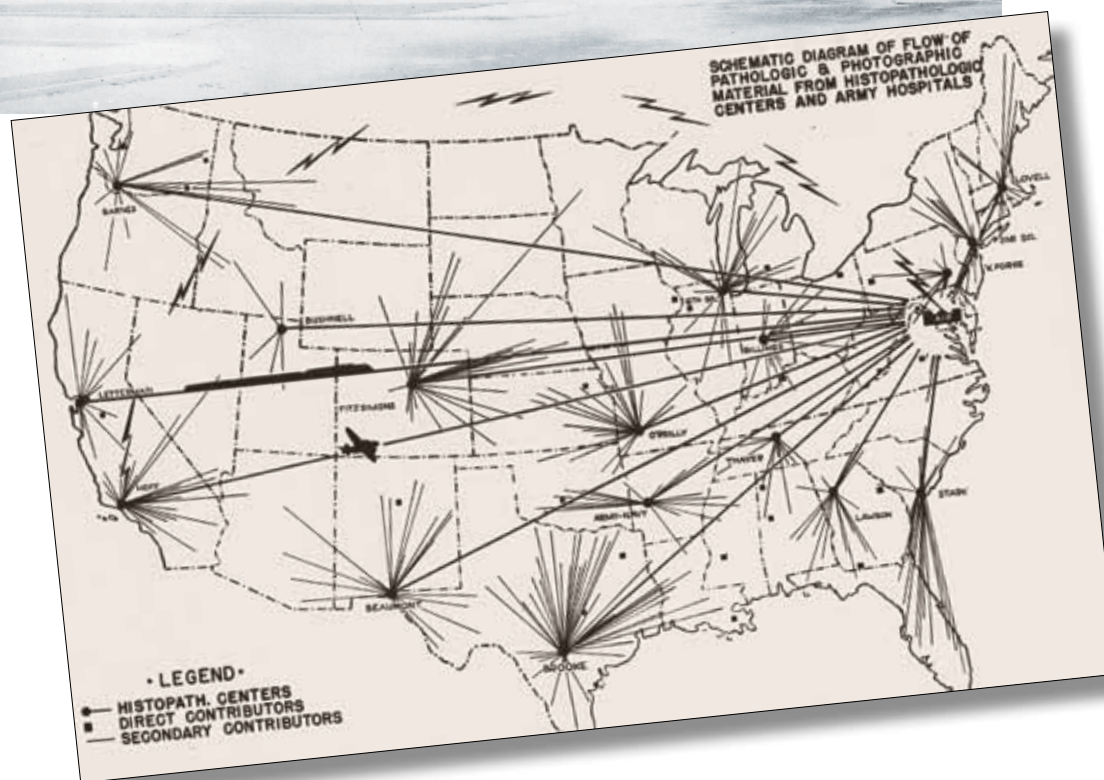
[Right] *Gross specimen of a brain on exhibit in the museum, undated. Organs were often displayed to help educate visitors about the human body.* (Reeve 68094)

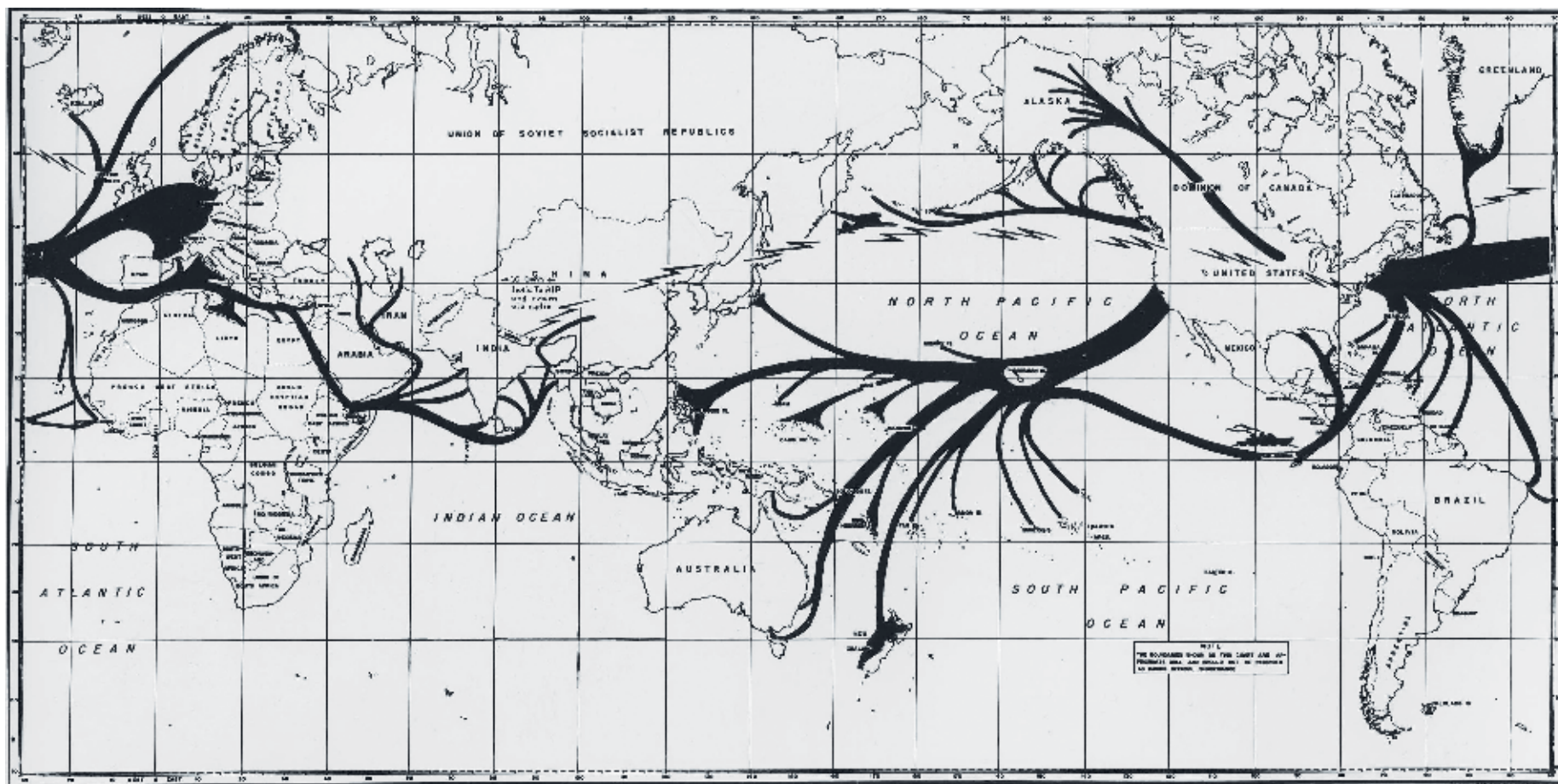


[Top] Architect's drawing of a new home for the Army Medical Museum, authorized by Congress in September 1941, just before the attack on Pearl Harbor and the nation's subsequent full-scale involvement in World War II, events that brought an end to the plans for this building. (Reeve 72531)

[Bottom] Schematic diagram detailing the flow of pathological materials from histopathologic centers and Army hospitals to the Army Medical Museum during World War II. (Reeve 91539-2)

[Opposite] Schematic representation of the worldwide flow of pathological material to and from the museum during World War II. (Reeve 91539)





▲ Pathology in World War II

THE ARMY MEDICAL MUSEUM likely would have been quickly overwhelmed during World War II if it did not already have a plan for decentralization of Army pathological facilities and activities; within 4 days after Pearl Harbor this plan was put into place. Within the United States, 18 regional centers for histopathology were identified, with one or more in each of the nine service commands of the time. Nearby posts and installations sent materials that required diagnostic assistance to these centers. After screening out cases with no diagnostic doubts or difficulties, the regional centers forwarded surgical cases that might have follow-up value to the museum, particularly tumors and other tissue requiring final or confirmatory diagnosis. All autopsy materials were also forwarded. The overseas histopathology centers had the same primary mission as those in the United States, but the museum also requested that they send in materials and information about disease encountered among local peoples, including tissues from surgery, insect species, and poisonous plants and snakes.¹(pp246–247)

As materials and information poured into the museum, study sets were arranged and made available to all Army laboratories to keep medical officers updated about the pathology of diseases prevalent during the war. The study sets consisted of slides for microscopic study, as well as printed syllabuses or atlases illustrated by photographs or photomicrographs. Larger sets covered the pathology of major specialties, such as otolaryngology, orthopaedic surgery, neurology, dermatology, gynecology, serology, and dental and oral surgery. Smaller sets focused mainly on specific diseases, among them lesions of the lymph nodes, tumors of certain organs, viral pneumonia, and several diseases traceable to different forms of fungus. By 1945 nearly 1,700 study sets were sent out on loan.

With emphasis on the pathology of the soldier, the age group roughly defined as from 18 to 38 years old, Colonel Ash wrote, “Never before has there been an opportunity to learn so much about the pathology of this military age group; only now, as a result of the Army policy of centralization, have significant data been available to cover this presumably healthy span.”¹(p258) The pathology findings were sometimes surprising. For example, while it had long been known that the young sometimes experienced fatal coronary disease, the number of such fatalities during the war was unexpectedly large. Study of the first 80 cases received at the museum showed that about one-third of these deaths were in men under 30, and that being overweight was a common factor among them.

In addition to long-term studies, the museum also provided a prompt diagnostic and consultative service. For example, autopsy tissues received from a case of a soldier who had died unexpectedly and inexplicably while serving in Alaska revealed that death was due to inhalation of a toxic vapor. Further investigation revealed that the soldier had used a toxic cleaning fluid in a confined space. A directive was promptly issued to discontinue use of the fluid indoors, and pathologists in the field were alerted to its dangers. This discovery and diagnosis subsequently helped pathologists explain previously undetermined causes of death among crews on submarines in the Pacific.



*The museum's
receiving and
accession room,
circa 1944.
(Reeve 88272)*





[Opposite] Histology laboratory personnel at work, circa 1942. (Reeve 69429)

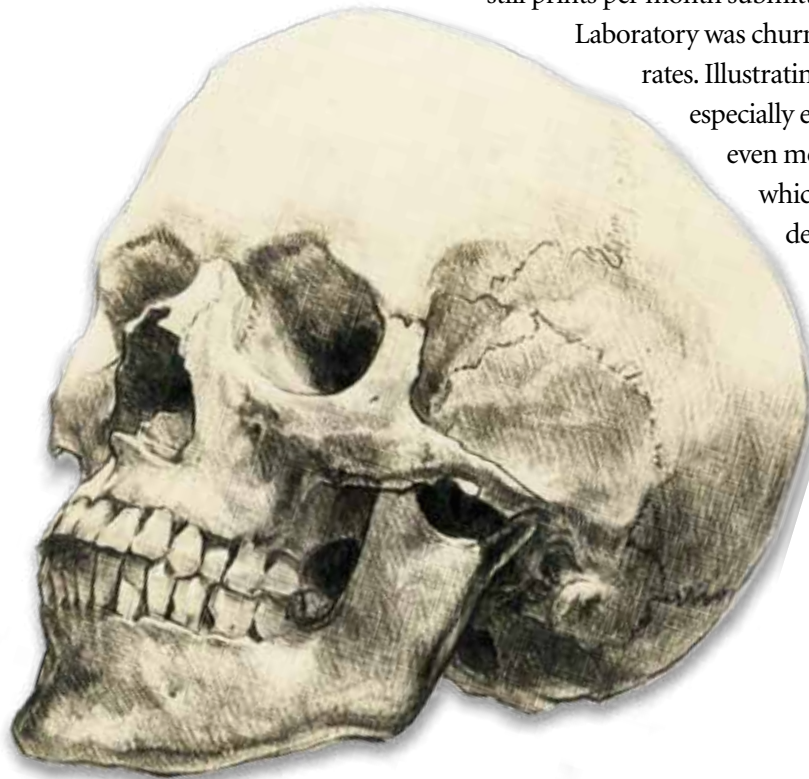
[Top] Museum staff performing administrative work during the war. (Reeve 164-2)

[Bottom] Major General Norman T Kirk (left), surgeon general of the Army, presents the Legion of Merit to Colonel Balduin Lucké for distinguished service to the Army Medical Museum. Colonel Lucké's research was key to proving that a suspected outbreak of yellow fever among troops in the summer of 1942 was actually hepatitis, a far less deadly disease. He further documented how pathologists could easily recognize the difference between the two diseases under a microscope. Yellow fever was but one of the tropical diseases of concern to the Army during the war. As Colonel Ash wrote, tropical medicine "held a place of special importance, not only medical but military, with our troops stationed in all quarters of the globe. Almost overnight, the diseases of the tropics became an urgent specialty, where previously the general pathologist had occasion for no more than superficial knowledge."²¹(p254) (Reeve 95818-1)



▲ Illustrating the War

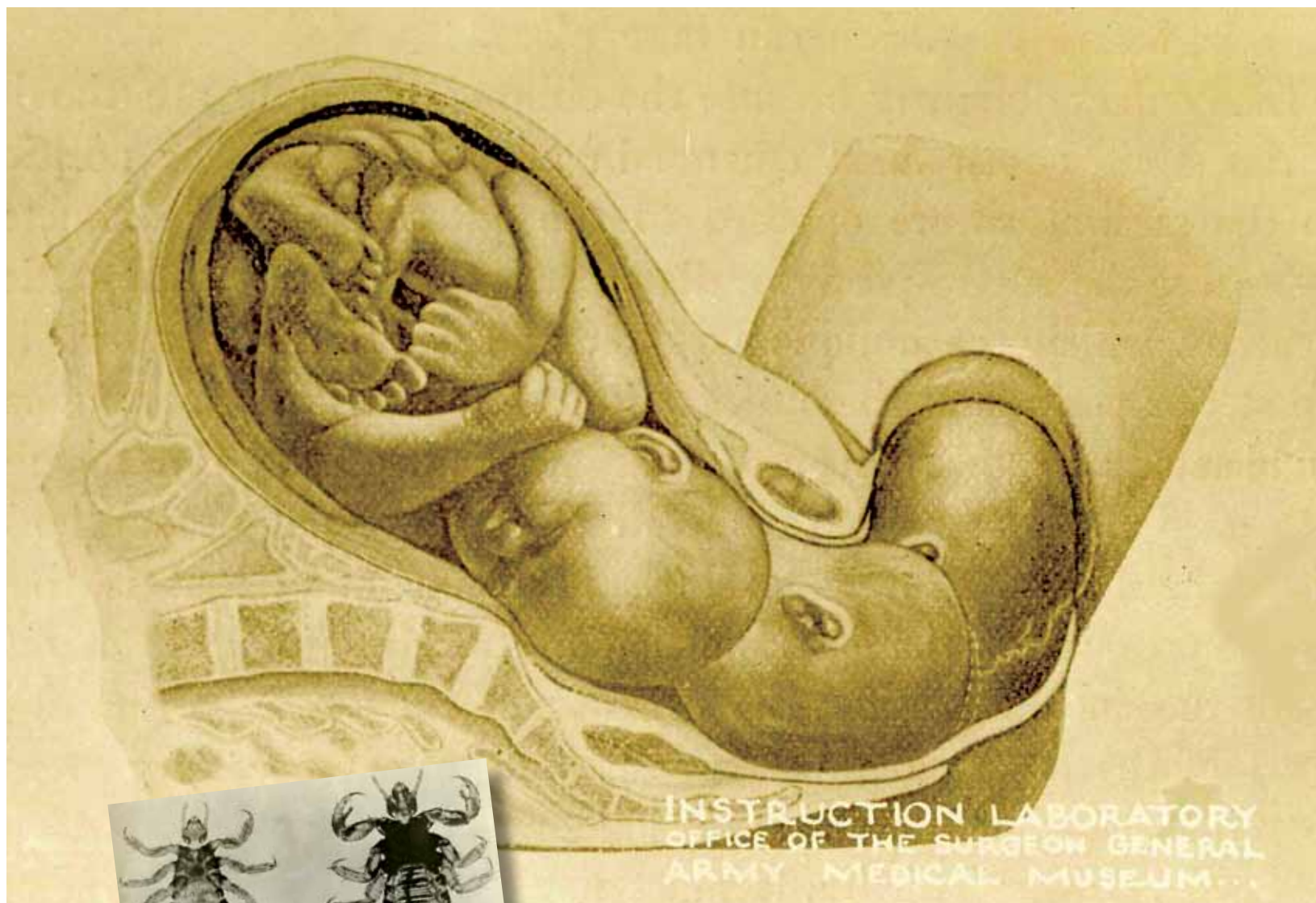
Drawing of a human skull by museum staff. (Reeve 226-1)



ALTHOUGH THE STUDY OF PATHOLOGY was the principal museum business during World War II, closely related was the graphic representation of such study through drawings and paintings, photography and photomicrography, and plastic medical art, performed by the museum's Army Medical Illustration Service. At the start of the nation's full-scale involvement in the war, these documentation functions were decentralized and scattered among various offices, such as the Training Division of the Surgeon General's Office, but by the mid-1940s all functions were both reporting to the Army Medical Museum and using the museum as a repository for their works. Late in the war the museum was handling an average of 5,000 still prints per month submitted by 60 hospitals in the United States. Additionally, the Photographic Laboratory was churning out colored lantern slides, photostats, and offset prints at record rates. Illustrating medical aspects of the war on the home front was at times challenging, especially early in the war when few clinical photographers worked in hospitals. But even more challenging was the documentation of medical activities overseas, which was often performed in remote and dangerous locations. The teams deployed for these missions came to be known as the Museum and Medical Arts Section, or MAMAS.

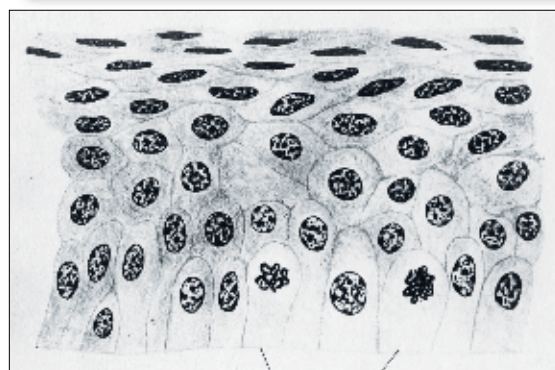
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[Top] Illustration depicting forward motion of the baby during childbirth. (Reeve 836-1)

[Opposite Inset] Highly magnified, top and bottom review of *Pediculus corporis*, more commonly known as lice or “cooties,” an often routine problem among deployed military personnel during the war. (Reeve 3151)



[Bottom Left] *Stratified view of epithelium, which is tissue composed of cells that line the cavities and surfaces of structures throughout the body.* (Reeve 33890)

[illegible]

[Left] Various moulages used during the war to train personnel about the types of wounds they might expect to see. (MAMAS 224)

[Right] When worn by soldiers in the field, the moulages produced by the Medical Illustration Service were startlingly lifelike. (MAMAS 225)

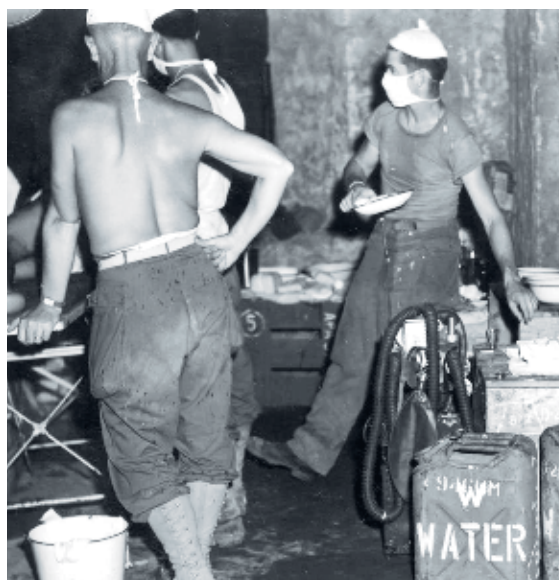




[Top Right] Personnel at work in the 3rd Medical Laboratory in the Philippines. (MAMAS D45-416-113-A)



[Top Left] Patient receiving treatment on an examination table at the Zamboanga School in the Philippines. (MAMAS D45-416-87-E)



[Bottom Right] Surgical procedure at Dulag, the Philippines. (MAMAS E44-123-6)

[Bottom Left] Personnel await instructions to pass supplies during a surgical procedure at Dulag, the Philippines. (MAMAS E44-123-5)



[Left] A soldier receives treatment for gunshot wound received during fighting on Biak, a small island located just northwest of New Guinea. (MAMAS D44-292-3)

[Right] Flush control demonstration by 8th Medical Laboratory, Malaria Control School, Australia. (MAMAS D43-19-4)

[Opposite | Top and Bottom Left] View of latrines near the Preventive Medicine Department, Base K, Leyte, Philippines. (MAMAS H-134-1; MAMAS H-130-D)

[Opposite | Right] Allied former prisoners of war awaiting shower and delousing process at the 42nd General Hospital in Australia. (MAMAS D45-456-2-2)









[Opposite] A young girl in North Africa having her abdomen examined by an Army physician. (MAMAS C43-9-1)

[Left] Boys lined up at a table in North Africa, where soldiers drew blood to test for malaria. Helping with medical care for local populations was common throughout the theaters of operations. (MAMAS C43-9-12)

[Right] An Army physician provides emergency care to a girl in North Africa. (MAMAS C43-9-2)



[Left] Care is provided at the American hospital for wounded Japanese prisoners captured on Luzon. 98th Evacuation Hospital, Tarlac, Philippine Islands. (MAMAS D45-416-12H)



{Top Right} Military personnel in North Africa providing routine medical screening. (MAMAS C43-9-7)



[Bottom Right] Medical assistance arriving at unknown location in Asia. (MAMAS D45-456-18-6)



"J-Day + 3. Casts are applied to patient from 163rd Infantry, a casualty from the Japanese landmine explosion. Operating room is at the 8th Portable Surgical Hospital. Albee type orthopedic table was made by Technician 3rd Class Rudolph Henkel (right foreground), Surgical Technician from Baltimore, Maryland, out of Japanese pipe and ammunition rods, 1 piece from a stove pump, 1 piece from windshield of a Jeep." (MAMAS D45-416-78B)

[Inset] A MAMAS photographer documents the diseased foot of a local on an unidentified tropical island. (S 57-1 [cropped])







[Opposite] A wounded soldier receives treatment at a battalion aid station in Bologna, Italy. (MAMAS FD45-45-A)

[Left] Surgical procedure at a field hospital in Italy. (MAMAS CA43-40-9)

[Right] US Army medic attending to patients at a field hospital at an unidentified location in France. (MAMAS C44-524-1)

[Bottom Right] Patients in ward at a field hospital in southern France. (MAMAS C44-511-1)



“For nearly 30 years following the end of World War II, the institute was characterized by tremendous growth and maturity. . . . But before that growth and maturity could be realized, what had officially become the Army Institute of Pathology by mid-1946 would need an even broader mandate and a new home.”