

Chapter II

THE CIVIL WAR: DENTAL CARE IN THE UNION ARMY, 1861–1865

Introduction

Many American dentists in the Union states believed the Civil War provided the opportunity for the military to finally admit its need to care for soldiers' dental health. Not only did the US Army enter the war without dental surgeons, but the federal government did not supply toothbrushes for its troops. Dentists hoped the new call to arms would make the military aware of its dental shortcomings.

The Soldiers' Dental Requirements

Many potential enlistees were rejected during the war because of dental deficiencies. As part of the physical examination given to drafted men or their substitutes (the 1863 conscription act allowed a drafted man to hire someone else to perform his military service), the surgeon was to determine "whether he has a sufficient number of teeth in good condition to masticate his food properly, and to tear his cartridge quickly and with ease." Revised regulations were even more specific, stating that "total loss of all the front teeth, the eye-teeth, and first molars, even if only of one jaw" was cause for rejection.^{1(p429)}

By the middle of the 19th century many more Americans appeared to be experiencing serious dental problems. This was attributed at least in part to the increased use of refined sugar in foods and a greater consumption of fresh, rather than salted, meats. Recent archaeological studies show evidence of increased antemortem tooth losses and abscesses, which may also be an indicator of unskilled dental intervention.² For example, 5% of the remains of 30 Confederate soldiers buried in Glorietta, New Mexico, had sustained tooth loss through alveolar abscessing, and 30% had abscessed teeth at their time of death. Only 4 of the 30 had no carious teeth, and 3 of the 30 had gold fillings. A study of a small sample of the skulls of Virginia soldiers held at the Armed Forces Institute of Pathology showed similar care, with fillings made of tinfoil, amalgam, or thorium.^{3,4}

Just as in early European armies, some drafted Americans had their teeth extracted to be exempted from service. Dr David Noble of Ohio reported "one man exhibited twelve sound teeth that had been recently extracted, thus settling the question that a man may stand the steel, but fear the powder and lead." Some Army surgeons said that they "refused to exempt any whose alveolar processes were not absorbed, or whose gums indicated that the teeth had been recently extracted."^{1(p429)}

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The conscription records of 1863–1864 show that a large number of recruits were rejected because they failed to meet the dental requirements. In the draft of 1863 nearly one fifteenth of all physical exemptions were from “loss of teeth.” In 1864 nearly one tenth of the total exemptions were dental.^{5(p240)}

Dr Roberts Bartholow’s *Manual of Instructions for Enlisting and Discharging Soldiers* (1863) called for rejection of recruits for “loss of a sufficient number of teeth to prevent proper mastication of food and tearing the cartridge,” and “incurable deformities or loss of part of either jaw, hindering biting the cartridge, or proper mastication, or greatly injuring speech; ankylosis of lower jaw.” It also cited “a carious condition of the teeth, and loss of the incisors and canines” as causes for rejection.⁶

In his *Manual of Instructions for Military Surgeons on the Examination of Recruits and Discharge of Soldiers* (1863), Dr John Ordronaux listed the following causes for rejection:

shrinking of the gums, giving rise to loosening of the teeth; loss or decay of the four incisors of the same jaw; loss or decay of the two lateral incisors or cuspids of each jaw; loss or caries of several incisors or cuspids in either jaw (five at least); and, where the other teeth are not in a state of soundness.⁷

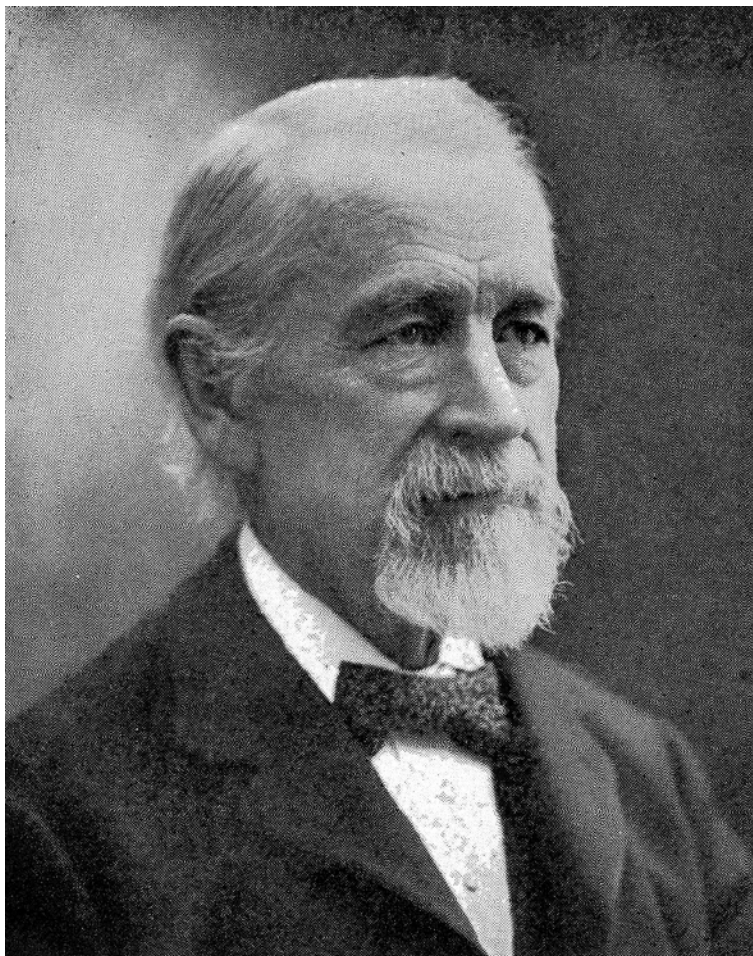
He also advised the surgeon to look for loss of teeth “concealed by the introduction of artificial ones.” Other conditions such as temporomandibular articulation, ankylosis, harelip, stomatitis, “gangrene” of the mouth, facial paralysis, gingivitis, congenitally missing teeth, dental anomalies, supernumerary teeth, and diastemas were also mentioned. However, some recruits slipped through without meeting the requirements. Dr Daniel Holt, an assistant surgeon with the 121st New York Volunteer Regiment from August 1862 to October 1864, mentions seeing “grandfathers without teeth” serving in the line.^{7,8}

In July 1861 Dr Jonathan Taft (1820–1903), the coeditor of *Dental Register of the West*, had already commented extensively on the subject of a soldier’s dental requirements:

The soldier requires a sufficient number of teeth in good condition, to enable him to masticate his food properly. Hard bread, tough beef, and salt pork, require good molars for this purpose. The incisor and canine teeth are not adapted to this end, *i.e.*, without the aid of some of the molars. . . . The soldier must again have teeth of some description, strong enough to tear his cartridge. This is usually done with the incisor and canine teeth. But if the bicuspid and two of the molars in both jaws upon the right side remain and are sound, we think this may be done as conveniently as with the incisor and canine. The instructions for tearing the cartridge in the infantry tactics, merely prescribe that it is to be put between the teeth, without specifying the particular teeth by which it is to be torn.

If, then, the front teeth have been lost by accident, as sometimes happens, we should not reject the man on that account, provided the double teeth, or a sufficient number of them, remain sound in both jaws, and upon the right side. But if the front teeth have been lost from caries, and the double teeth are unsound to any extent, the man should be rejected. If the front teeth remain and the molars are gone, we think rejection is again demanded, because the man is evidently incapable of properly masticating the food he must subsist upon in the field.

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*Jonathan Taft (1820–1903), coeditor of Dental Register of the West.
Photograph: Courtesy of the American Dental Association.*

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"Fetid breath" is sometimes a reason for rejection. If merely a sign of temporary derangement of the digestive organs or the like, it is of no consequence. But if it depend upon extensive caries of the teeth, chronic ozoena, scorbutic, syphilitic, scrofulous, or mercurial cachexia, it demands rejection as well from its own offensiveness as from its being one of the indications of grave disqualifying disease.^{9(pp435-436)}

Taft then concluded that "if good teeth are so important for the soldier, would it not be well to adopt some means by which they can receive the attention necessary for their preservation?" Commenting on the government's apparent disinterest in providing dental care for the thousands of volunteers pouring into Army camps, he noted that not even "tooth-brushes, dentifrices, tooth-picks, etc.," were supplied by the civilian provisioners (sutlers) in the large encampments. In the US Army of the day, as in those of the rest of the world, however, advice such as Taft's was ignored, and still nothing was done to maintain the soldiers' dental health.¹⁰

Army Surgeons and Hospital Stewards: A Muscular Right Arm

Any dental care the soldier received once in the Army was either paid for by the individual or received from an Army surgeon, hospital steward, or a trained dentist serving in another capacity in the same unit. Dental care from the surgeon or steward was usually less than satisfactory. Dr John Sayre Marshall (1846–1922), a veteran of the 2nd New York Volunteer (Harris) Cavalry and often referred to as the "founding father of the Dental Corps" later said:

In the Union armies the only dental service rendered was that of lancing a "gum boil" and the extraction of teeth. The latter service was usually performed by a hospital steward, whose only qualification for this service was generally the fact that he possessed a muscular right arm. The victims, God rest their souls, after one experience with the hospital steward were not usually willing to submit to such treatment a second time.^{11(p138)}

Brigadier General William Hammond, the Army surgeon general from April 1862 to August 1864, began reforming the Army Medical Department during the first year of his tenure. He acknowledged the value of good oral health in his *Treatise on Hygiene* (1863), in which he stressed the need for healthy gums and strong, caries-free teeth. "The importance of these points is, we think, liable to be overlooked. No one can be healthy whose teeth are deficient or in bad condition; and soldiers, of all other classes of men, require that these organs should be sound." When an American Dental Convention committee conferred with Surgeon General Hammond sometime after his appointment in April 1862, it was reported that "the matter [commissioning dentists for the Army] was very favorably received by him." However, Hammond believed that unhealthy gums were often indicators of other medical problems, and insisted that Army surgeons already in service could meet any required dental minimums.^{12(p59)} He never took action to add dental surgeons to the Medical Department.¹³

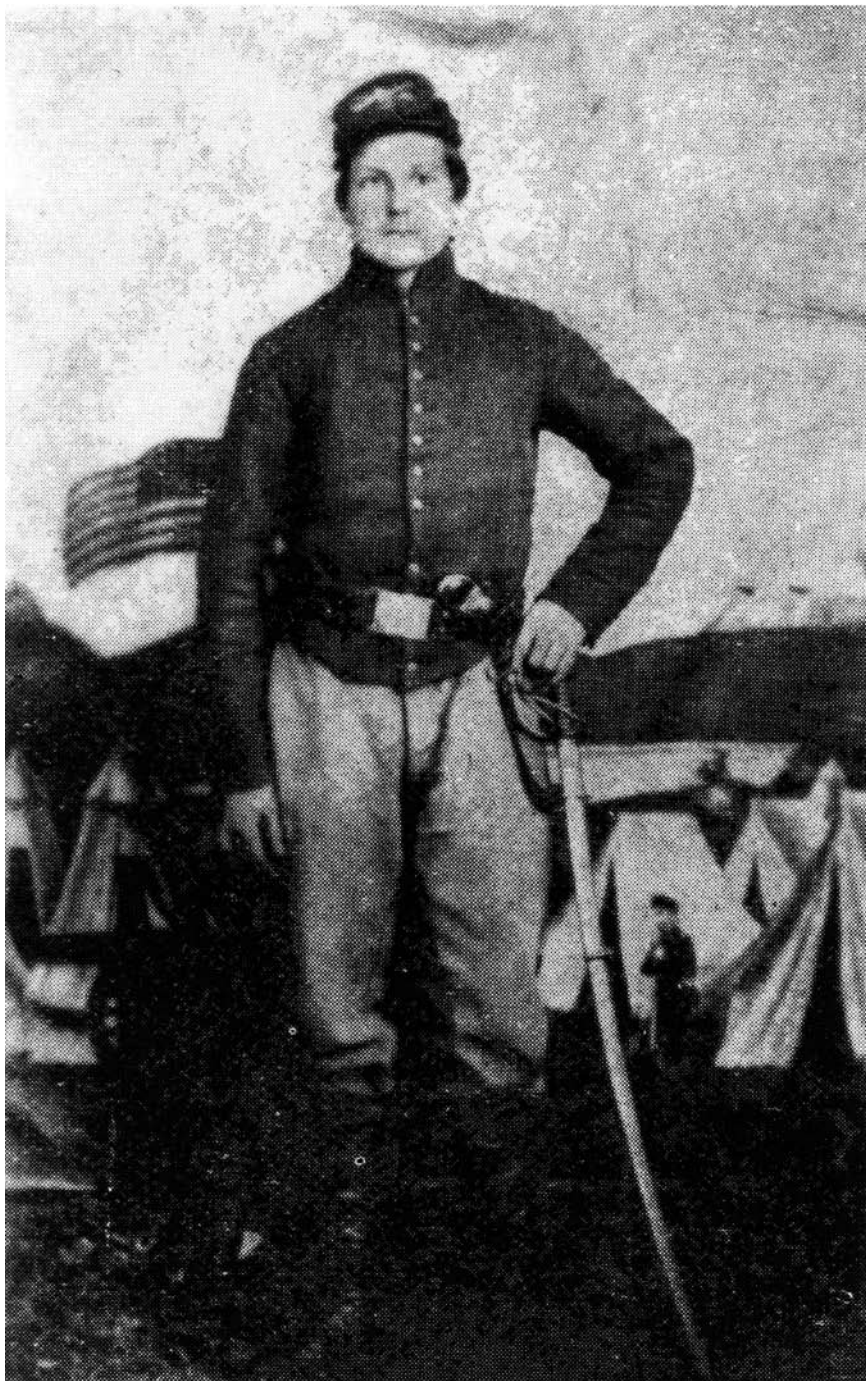
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John Sayre Marshall.

Photograph: Courtesy of US Army Medical Department Museum. DCC01 Marshall-02.

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*John S Marshall, Civil War photo. Marshall, a veteran of the 2nd New York Volunteer Cavalry, is often called the founding father of the Army Dental Corps.
Photograph: Courtesy of: the American Dental Association*

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For dental operations, the government provided the Army surgeons with the following set of instruments: "one turn-key, two pairs of straight forceps, one pair of lower molar forceps [beaks half an inch wide], one gum lancet, one stump screw [occasionally]." This limited instrumentation, coupled with a lack of training and experience, made an extraction by an Army surgeon quite an adventure for the patient. Writing in the March 1862 issue of the *New York Dental Journal*, its editor, Dr William Roberts, noted that "the army surgeon is generally not only utterly incompetent to the proper care of the teeth, but he is also entirely averse to it, and when forced to its consideration, hastens his disagreeable task as much as possible." Roberts thought that dentists attached to the Army, carrying along their own sets of instruments, would solve the problem and save the government "a useless and illy-regulated expense."¹⁴

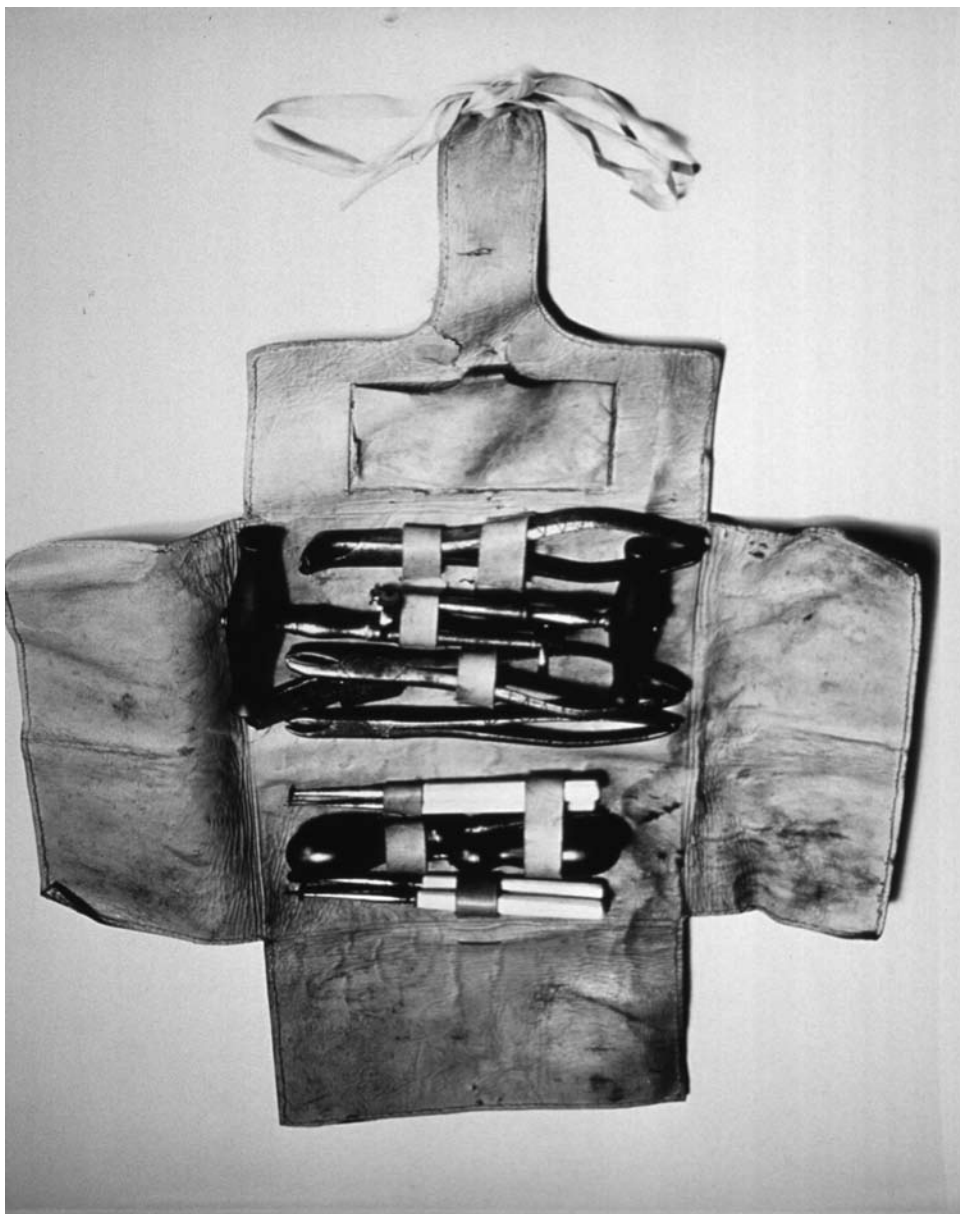
William Roberts's 1861 Concept for a Dental Department of the US Army

In July 1861 Roberts proposed a thoughtful solution to the dental situation already confronting Union soldiers. In his *New York Dental Journal*, he argued that "a corps of dentists, or dental staff, should be attached to the United States Army, similarly organized with the surgical department, who would act in connection with and as an efficient aid to that department, besides performing their own duties in a proper manner." He further proposed that the newly formed US Sanitary Commission, organized in June 1861 to provide civilian assistance to Union army casualties and their dependents, direct its efforts to lobby Congress on this "humane" and "economical" measure at the next congressional session.^{15,16}

Roberts also presented a plan in which he recommended that the secretary of war form a "Dental Department of the United States Army." This group would be headed by a "Dental Surgeon-General," appointed by the secretary, who in turn would appoint qualified dental surgeons to be "Dental Inspectors." The inspectors were to be assigned to posts of two to four regiments, and their duties would include quarterly oral health inspections and statistical reporting. His plan also implied that the inspectors would supervise dental personnel working at the regimental level.¹⁵ A "Board of Dental Surgeons," also appointed by the secretary, would examine and approve the qualifications of candidates for appointment to the dental department and would examine those eligible for promotion. Those selected would be ranked as either "Dental Surgeons" or "Assistant Dental Surgeons." A dental surgeon would be assigned to each regiment and would be responsible for the dental care of all of its members, as well as for the maintenance of individual dental records to be shown to the inspectors. An assistant dental surgeon would be appointed to each regiment to assist the dental surgeon as directed. Roberts suggested that applicants to this latter position be between 21 and 28 years old and become eligible for promotion after 5 years service and examination by the dental board.¹⁵

Furthermore, he recommended that dental supplies be issued the same way they were in the Medical Department, with dental inspectors drawing all medicines and materials and distributing them to the dental surgeons at each post. Pay and fiscal matters would also conform to the scales and practices of the Medical Department.

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*Tooth extracting forceps, circa 1850.
Reproduced from: <http://www.nlm.nih.gov/ihm/images/A/23/323.jpg>.
Courtesy of the National Library of Medicine.*

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Roberts concluded with a strong recommendation:

Thus, by some such system as the above attached to the United States Army, every recruit would be inspected by the Dental Surgeon on entering the army, and his mouth put into a healthy and proper condition, in which condition it would be kept during his time of service; a judicious series of regulations would compel every soldier to keep his teeth carefully brushed and cleansed, and this of itself would greatly lessen the chances of disease.^{15(p186)}

In 1863 Roberts revised his dental plan to reflect the changing situation. He proposed that the War Department authorize qualified dentists to practice among the troops in the field at their own expense, receiving compensation through reasonable fees. If that was not acceptable, he urged that one dentist and one assistant be appointed to each brigade with the equivalent rank and pay of their medical counterparts. If the government was unwilling to assume that expense, Roberts suggested that the Sanitary Commission appoint qualified dentists who would practice among the forces for fees first approved by the commission. He believed that “plenty of excellent dentists” would respond to the call, and that the “comfort and well being” of the soldier would be greatly improved if this plan was adopted.^{14,21}

Remarkably, Roberts’s plans came very close to the system adopted by the Army when contract dental surgeons were finally authorized in February 1901. In 1861 and 1863, however, his ideas were not viewed favorably.

John Hugh McQuillen: Army Surgeons are not Dentists

In December 1861 Dr John Hugh McQuillen (1826–1879), coeditor of *Dental Cosmos*, commented on some of the problems inherent in establishing a dental service for the Army. He noted that with the federal government already spending approximately \$1.5 million daily on the war, it was unlikely that the secretaries of the Army and Navy would “recommend to Congress the propriety of establishing an entirely new department, which will be attended by a very large additional outlay per annum.”¹⁷

McQuillen also foresaw insurmountable problems with “furnishing the materials, gold-foil, plate, teeth, etc., demanded in the performance of dental operations.” He did not think the government, with all its other obligations, would provide such items, but neither could dentists on their small salary. This meant that the cost of treatment would pass to the soldiers, whose low pay and other obligations made that expense nearly impossible to manage. McQuillen anticipated further problems with poor working conditions and unit deployments, which would prevent any conscientious follow-up. These roadblocks would “reduce the operations of the dentist simply to the treatment of exposed nerve pulps, alveolar abscesses, and the extraction of teeth—operations which the *thoroughly* educated surgeon should be prepared to meet.”¹⁷

McQuillen went on to observe that:

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The education of the surgeon, however, in this direction, it must be admitted, has not heretofore been sufficiently attended to, and it is extremely doubtful whether one out of ten can diagnose between an aching and sound tooth, an exposed pulp and acute periostitis, the course of treatment demanded in each case, or, when extraction is demanded, perform that operation as it should be done. Indeed, it is difficult to conceive how it could be otherwise in the latter operation, as the surgeon is only provided, by a regulation of the service, with two pair of forceps, one straight and one curved. With these he is expected to meet every emergency that may arise.¹⁷

McQuillen insisted that his remarks were not meant to demean the Army surgeons, but merely to emphasize the fact that physicians were not educated in the dental sciences. He recommended that the medical bureaus of the services take steps to correct this deficiency in surgeons' education. He also observed that some medically trained dentists had given up their dental practices and been accepted by the Army as surgeons or assistant surgeons. Among this group were Dr John McGrath of Philadelphia, Dr William M Wright of Pittsburgh, and Dr Joseph Richardson of Cincinnati.²⁵

As the war progressed, McQuillen and *Dental Cosmos* continued to track developments in the Union army and to editorialize on the most pressing dental issues. In October 1862 the coeditor of *Dental Cosmos* noted that:

It is a constant source of complaint on the part of many army and navy surgeons, both in the regular and volunteer service, that the instruments supplied by the medical bureaus for the extraction of teeth are inadequate to meet the most ordinary contingencies of practice. The justice of this complaint must be apparent when it is known that only two pair of forceps, one straight and one curved, are all that the departments furnish. It is not surprising, therefore, that aching teeth, which could be readily removed with properly-constructed forceps, are frequently allowed to remain after several abortive attempts have been made to extract them. Under such circumstances, the poor soldier or sailor is, of course, compelled to submit to that "Hell o' pains, the toothache," with no prospect of relief, from the surgeon at least. Notwithstanding these facts, and the great improvements that have been made during the past twenty-five years in extracting instruments, some of the older surgeons, wedded, of course, to bygone days, regard the instruments furnished as all-sufficient.²

Regarding forceps, McQuillen thought that "while six pair, perhaps, would answer ordinary contingencies, *at least twelve pair* were demanded to meet every contingency that might arise." He recommended that Army and Navy surgeons be supplied with the proper instruments and textbooks to meet every emergency.^{17,18}

In the fall of 1862 some Army surgeons complained about the "small cap" worn by the troops. They thought that it provided little protection from the weather elements as winter approached, and that it was partially responsible for so many soldiers suffering from "neuralgia in the head." In December 1862 McQuillen and the editors of *Dental Cosmos* suggested that these "neuralgic affections" could often be traced to dental diseases and were curable with proper dental treatment. It was possible that a dentist could cure in minutes what might cause the "poor fellows" to suffer for several weeks.¹⁹

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The Legislative Efforts of the American Dental Convention's Military Committee in 1861–1862

When Taft, editor of *Dental Register of the West*, had noted the government's disinterest in the soldiers' dental care in July 1861, he also pointed out that the American Dental Convention committee made "little or no effort" to secure the appointment of dentists in the Regular Army. While he surmised that perhaps the committee found the "difficulties to be so great, as to render any effort in that direction impracticable," he believed that the "welfare of the soldiers" dictated that increased efforts continue toward that goal.²⁰

On August 9, 1861, at the American Dental Convention meeting in New Haven, Connecticut, the Committee on Appointing Dentists in the Army and Navy reported that more time was needed to consider this important matter than the present session would allow. A five-person committee was appointed to address the government about admitting dental surgeons to the Army and Navy.^{21,22} The committee consisted of Dr WH Atkinson, Dr George H Perine, and Dr BW Franklin, all of New York City; Dr JD White of Philadelphia; and Dr IJ Wetherbee of Boston.³ In January 1862 the committee urged members of the dental and medical professions to submit any recommendations or suggestions on how this could be accomplished "for the benefit of our volunteers."^{23(p312)}

In the April 1862 issue of *Dental Cosmos*, John McQuillen noted that early in the year, the War Department established new military hospitals in New York, Philadelphia, Saint Louis, Cincinnati, and other northern cities to prepare for upcoming offensive operations. These hospitals were placed under the charge of "visiting" and assistant surgeons selected from among the local practitioners of each city. While nothing was "left undone to contribute to the comfort and welfare of the patients, on the part of the medical officers," visiting dental surgeons were not appointed, nor was provision made for dental care for those patients suffering "from a deranged condition of the teeth."²⁴

On August 5, 1862, a letter from Surgeon General Hammond to Dr JD White of Philadelphia was read at the American Dental Convention meeting in Trenton Falls, New York. Dated July 28, it addressed the addition of dentists to the Army Medical Department:

Nothing would give me greater satisfaction than to have a corps of accomplished dentists added to the medical department of the army. I shall recommend it in my report to Congress. Nothing can be done, however, but by law, and I would suggest to you the propriety of agitating the subject through the public prints.²⁵

In the discussion that followed, Dr William Dwinelle of New York City said that Hammond had personally expressed to him his "sympathy with and appreciation of the movement." Other dentists urged the committee to "increased action" and more individual effort in conjunction with exerting the committee's "influence." Jonathan Taft of Cincinnati argued that if dentists were given the opportunity to exhibit their value to the Army, the need for a dental department would soon be recognized; in this manner, both the Army and the dental profes-

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sion would benefit—the latter by the “advancement and elevation of the profession.” He also claimed that he had received a request from a “military division” for the “permanent services of a dentist.” After Dr Burras of Buffalo, New York, joined the committee, the members voted to continue it for another year.^{25,26}

The American Dental Association and Continuing Efforts to Secure Dentists in the Union Army

On July 28, 1863, at the Philadelphia meeting of the American Dental Association, McQuillen, coeditor of *Dental Cosmos* and a frequent commentator on the lack of dentists in the Union army, proposed the following resolution:

That a committee of five be appointed by this Association to confer with Surgeon-General Hammond relative to the appointment of dentists to the military hospitals of the United States, and also to secure, if possible, prompt and successful action on the part of Congress, by having petitions prepared, signed, and sent to that body from all parts of the country in favor of the measure.²⁷

After some discussion, the resolution was adopted and a committee appointed, consisting of McQuillen, Taft, and Drs CW Spalding, CP Fitch, and HN Wadsworth. Again, another resolution for Army dental surgeons was on the table, but apparently little was accomplished after that.²⁷

A year later, on July 26, 1864, at the American Dental Association's meeting in Niagara Falls, New York, McQuillen, the chairman of the committee lobbying to appoint dentists to military hospitals, reported that he had written to Surgeon General Hammond, who was in the midst of an ugly court-martial, but did not receive a reply. He also contacted the acting surgeon general, Colonel Joseph Barnes, and received an “unfavorable response.” He urged members to engage in a “more vigorous” effort because of the “importance of the subject.”²⁸

As the discussion continued, Dr Samuel White of the SS White Dental Manufacturing Company in Philadelphia said that he had spoken to President Abraham Lincoln personally and asked his advice on the “direction” that efforts would have to take to secure a dental service for the soldiers. The president suggested that White talk to Secretary of War Edmund Stanton. However, when White called at the War Department, the secretary was absent. Instead, he, too, spoke to Barnes, who said that he was fully aware of the situation and had already concluded that nothing could be done while the armies were engaged in battle. If the war lasted until winter and the armies went into winter quarters, Barnes said, perhaps something could be worked out. He added that the Medical Department could issue the necessary regulations without congressional action. The only thing White actually accomplished was to get his company an order for a supply of dental forceps for use by the Army surgeons.^{28,29}

Following some spirited discussion, McQuillen reminded the meeting members that the subject was the introduction of dental surgeons into the “military hospitals” and not into the Army, as it would seem from the trend of the speakers' comments. The committee then discussed congressional action, the problem of fees or salaries for Army dental surgeons, seeking gubernatorial or Medical Department approval for visiting Army camps, independent action by individuals,

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establishment of a “dental bureau,” enlisting Army support and influence, and the humane nature involved in dental work with the soldiers. Eventually McQuillen’s report was approved, the committee was voted to be continued, and the meeting was adjourned.²⁹

The Wartime Service of Dentists

While their colleagues unsuccessfully lobbied the Medical Department and Congress, many dentists served in the Union army and contributed to the war effort in a variety of ways, despite the government’s reluctance to give them military status within their profession. In fact, any dental service these soldiers performed was strictly unofficial, and the activities of some dentists contributed to a misconception, perpetrated in earlier literature, that there were dentists appointed by the federal government serving the various Army units. Actually, none were officially designated until 1872, well after the Civil War, when Dr William Saunders, a US Army hospital steward, was named the official dentist for the cadets at the US Military Academy at West Point, New York. A few dentists were appointed unofficially by the commanders of state volunteer regiments to serve their respective units, but this practice must have been rare because only occasional references to such appointments were made in the dental literature of the time.³⁰

Despite the national government’s refusal to recognize the need for dental care for its soldiers, many dentists made substantial contributions in the course of the war. Some dentists carried their dental instruments as part of their field kits, doing what they could for their fellow soldiers as time permitted. For example, Dr Charles Koch (1844–1916) of Chicago, Illinois, served as an enlisted soldier and officer from August 1862 until March 1866, and commanded the 49th Regiment (US Colored Troops), held staff positions, and was a provost marshal in Mississippi. While serving as an infantry officer during the Civil War, he carried “a small satchel, in which he kept dental instruments and medicines to relieve the tortures of the mouth” for the duration of his service.³¹

During the Civil War, some dentists enlisted as privates in the various state volunteer regiments, some received commissions as line officers in these same regiments, and some became hospital stewards to take advantage of their medical training. Others who had medical degrees (it was quite common at that time for a physician to practice dentistry) received appointments as surgeons or assistant surgeons in volunteer regiments or the Regular Army. Dr Royal Varney joined the Army as assistant surgeon in the 31st Ohio Volunteer Infantry, but his dental skills were never used; instead, his duties required him to staff a dressing station for the walking wounded, mostly wrapping bandages.³²

Some civilian dentists voluntarily offered their professional services to the various training camps and on the battlefield. Dr William Morton, who had successfully demonstrated the use of sulphuric ether as a general anesthetic during surgery in 1846, volunteered his services to administer ether in the Wilderness Campaign of 1864. News that May led him to volunteer, first in Fredericksburg, then around Spotsylvania, roving informally among field hospitals and delivering anesthesia. When the Army continued southward, Morton remained in Freder-

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*Charles RE Koch, Civil War, 72nd Illinois Infantry, 58th US Colored Troops.
Photograph: Courtesy of Illinois State Historical Library, Springfield.*

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icksburg and assisted in the evacuation of patients to the Washington area before returning to private practice.³³ Morton died in poverty in 1868.³⁴

Dr George Watt (1820–1893), coeditor of *Dental Register of the West*, was an 1848 graduate of the Medical College of Ohio at Cincinnati and an 1854 graduate of the Ohio College of Dental Surgery. On May 9, 1864, he joined the service as a major and surgeon of the 154th Regiment of Ohio Infantry (National Guard) for 100 days at Camp Dennison, Ohio. He was subsequently stationed with his regiment at New Creek (now Keyser), West Virginia, an area noted for its guerrilla activities. In August 1864 Jonathan Taft, his coeditor of the *Dental Register*, quoted a letter from Watt:

He reports that his health has very much improved. Has not had sick headache (with which he was very much afflicted before) since he has been in the service; has “consolidated from 211 lbs. to 180! laying off his pomposity.” Says he has been shot at several times but not hit.^{35–38}

Watt was discharged from the service on September 1, 1864, as a result of a spinal injury that caused locomotor ataxia, and he resumed his dental practice in Xenia, Ohio, where he lived until his death.^{35–38}

Another dentist serving as a surgeon was Clark Smith (1832–1899), of Washington County, New York, who was a practicing dentist with a medical degree (MD). On July 29, 1862, he signed a contract as an assistant surgeon for the US Army and was issued a medical field case, medical pocket case, and one “teeth extracting” set from the medical purveyor’s office in New York. Smith was assigned as the assistant surgeon to the 169th New York Volunteers.³⁹

One physician-dentist, John Randolph Lewis (1834–1900), became the colonel of his regiment, the 5th Vermont Infantry. Lewis had received his DDS in 1858 from the Pennsylvania College of Dental Surgery, and later his MD from the University of Vermont.⁴⁰ On May 2, 1861, Lewis was called up as a private in Company H, 1st Vermont Infantry, where he served for 3 months. He saw action at Big Bethel, Virginia, in June 1861, and was mustered out with his regiment on August 15. He was then commissioned a captain in Company I, 5th Vermont Infantry, on September 12. Rapid promotions followed. He was promoted to major over five senior captains (at their request) on July 16, 1862. Lewis was promoted to lieutenant colonel on October 6, 1862, and to colonel on June 5, 1864.^{40–42}

Lewis saw action in all the battles in which his regiment participated except Mine Run and Antietam until May 1864. On June 30, 1862, he was wounded in the right leg by a shell fragment at White Oak Swamp, Virginia. While commanding his regiment at the “dreary wasteland fringing the south bank of the Rapidan River” during the Wilderness Campaign, he was wounded early in the first day’s fighting; his left arm was “shattered by a musket ball, which entered just below the shoulder.”⁴³ That evening the arm was amputated at the shoulder (exsection of the humerus) at the division field hospital. The next day Lewis was taken to Fredericksburg by field ambulance, a journey that took 3 days. Lewis convalesced in Buffalo, New York, under his wife’s care, and was honorably discharged from active duty on September 11, 1864. The next day, he was appointed a colonel in the 1st Regiment, Veteran Reserve Corps.^{41,44,45}

Subsequently Lewis served on the Veteran Reserve Corps’ Examining Board

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in Washington, DC; guarded Confederate prisoners at Elmira, New York; served as the inspector general on the staff of Brigadier General Clinton Fiske at Nashville; and was a member of the Bureau of Refugees, Freedmen and Abandoned Lands for the state of Tennessee. Lewis was mustered out on March 31, 1867, at Macon, Georgia. The same year, he accepted an appointment as a major in the 44th Infantry Regiment, US Army, at the personal request of General Ulysses S Grant. Grant was aware that Lewis's amputation kept him from "taking up his profession, that of a Dentist." Service on the staff of Colonel Caleb C Sibley in Georgia, as inspector general, and on the Freedmen Bureau followed. Finally on April 28, 1870, Lewis was retired with the rank of colonel, under section 22 of the Act of July 28, 1866, after almost 9 years of active duty.^{42,46,47}

On June 6, 1863, Dr John Patten (1826–?), a former captain in the 50th New York Engineers who had resigned his commission because of ill health the previous July, wrote to Brigadier General Henry Benham, the commander of the Engineer Brigade, Army of the Potomac. He asked for permission to "follow the Brigade" at his own risk and expense in order to provide dental care to its members.^{47,48} The request was endorsed by Lieutenant Colonel William Pettes, the commanding officer of the 50th New York Engineers, with the recommendation that Patten's "professional services would be of much service" to the regiment. Benham agreed to Patten's request subject to the approval of the provost marshal general. Also on June 6, Brigadier General Marsena Patrick, the provost marshal general of the Army of the Potomac, authorized Patten's presence until further orders.⁴⁸ At the very least, this was a tacit admission of the need for professional dental care for soldiers.

Consequences of Serving without Dental Service

In March 1863, 2 years after the war began, William Roberts, the coeditor of the *New York Dental Journal* who had proposed the "Dental Department" for the Army, offered this comment on the soldiers' continuing dental plight:

If the soldier could only take reasonable care of his teeth himself, he would get on much better, but a tooth-brush is an article not in the regulations and sutlers don't supply them. If they did, it would be at a cost far beyond the soldier's purse and inclination. People can stand paying high prices for luxuries, but not for necessities; they would sooner go without. But if there were a dentist in the brigade, with good tooth-brushes, at the usual prices, every *decent* soldier would have one and use it, and there would be one great gain over the enemy.

Next, supposing the soldier's teeth decay, which they are almost sure to; he cannot ask for a furlough, to go home and get his teeth filled; and, probably, if he got a furlough, would readily find some other way to spend it. There is no dentist in the army, so all the tooth has to do is to rot away at its earliest convenience, when the soldier goes to the surgeon, and the surgeon draws the tooth as expeditiously and as painfully as he knows how.^{13(p145)}

After the 2 days of fighting at Little Round Top at Gettysburg, First Lieutenant Ziba Graham of the 16th Regiment, Michigan Volunteer Infantry, described his dental visit to the regimental surgeon on Friday, July 3, 1863, in his diary:

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*John Randolph Lewis, a dentist and physician, saw action during the Civil War and was wounded during the Wilderness Campaign. Later, Lewis accepted an appointment as a major in the 44th Infantry Regiment, US Army, at the personal request of General Ulysses S Grant.
Photograph: Courtesy of Massachusetts Commandery, Military Order of the Loyal Legion, and US Army Military History Institute.*

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All being quiet in our front I received permission to go back to the hospital to get an ugly tooth extracted that had kept me dancing all the night before. Our surgeon, Doctor [Robert] Everett, who had been hard at work all night at the amputation table, made but short work and little ado about one tooth. He laid me on the ground, straddled me, and with a formidable pair of nippers pulled and yanked me around until either the tooth had to come out, or my head off. I was glad when the head conquered. I then made up my mind never to go to a surgeon for a tooth-pulling matinee the day after a fight.^{49(p12)}

Regardless of one's rank, dental problems drew little sympathy from the medical establishment. Twice in 1863 Brigadier General Albion Howe, commanding the 2nd Division, VI Corps, required a surgeon's certificate stating he was unfit for duty because of "several defective teeth" before he could go on leave and get treatment at his own expense.⁵⁰ Soldiers experiencing trauma to the face and jaw were also in for a hard time. Sergeant Asa Smith of the 16th Massachusetts Volunteer Infantry sustained a severe jaw wound at Glendale in 1862 and was considered walking wounded. The first surgeon he encountered declared his wound fatal and refused to treat him. Finally, after 2 days, one of his regimental officers, himself wounded, persuaded a doctor at one of the medical collecting points to operate on Smith. Two men held him while the physician removed 18 pieces of bone without anesthesia, then sewed up the wound, leaving part of it open to drain. Smith was still considered walking wounded and fended for himself for 2 more days before another sympathetic doctor cleaned his wound and bandaged it to keep the flies off. A few days later he was evacuated by boat to a hospital at the Naval Academy. He received a medical discharge in July 1862 and made his own way home, where he eventually recovered.⁵¹

The nature of the war and types of ordnance used meant that many soldiers sustained injuries to the jaw similar to Sergeant Smith's. Final federal statistics reported in the US Army Medical Department's 6-volume *Medical and Surgical History of the War of the Rebellion* showed that 4,502 soldiers sustained gunshot fracture wounds to the face, of which 3,700 patients were known to have recovered, 404 died, and 398 outcomes were undetermined. Thus, only 9.8% died (primarily due to secondary hemorrhage) in the course of treatment, thanks in part to the voluntary efforts of civilian dentists contributing their expertise.^{52,53}

Ironically, when Dr James Garretson (1828–1895), considered to be the "father" of oral surgery, volunteered his services for the Union cause, the surgeon general's office rejected him. On July 29, 1862, Dr Hayes Agnew of Philadelphia had recommended to the surgeon general that Garretson be appointed "visiting physician" to the military hospital at the corner of 16th and Filbert Streets in Philadelphia.⁵⁴ On August 12, 1862, Garretson himself applied to Surgeon General Hammond to be appointed as the surgeon-in-charge of the contemplated military hospital at Red Bank, New Jersey. On August 14 the surgeon general's office replied, "your request cannot be granted, as the Red Bank hospital is to be placed in charge of an Ass[istant] Surgeon of the regular service." Thus, the Army Medical Department failed to utilize Garretson's unique talents in plastic and oral surgery. Later, Garretson was the first surgeon to successfully use Dr WGA Bonwill's dental engine, an early foot-powered drill, in surgical operations, and his textbook, *A Treatise on*



*James E Garretson (1825–1895), plastic and oral surgeon.
Photograph: Courtesy of the American Dental Association.*

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the Diseases and Surgery of the Mouth, Jaws and Associated Parts (1869), went through six editions as *A System of Oral Surgery* (1873–1895). In 1872 the Medical Department finally adopted the book in the supply table as the official standard reference for its surgeons.^{55–57}

In the “Dental Gossip” section of the January 1864 edition of the *Dental Times*, the following item appeared on the need for Army dental surgeons:

I have been told by a military officer that dentists are greatly needed in the army. That he had repeated occasions to give men furloughs to go to Washington to have teeth filled and otherwise treated; for very many in our army are sufficiently intelligent to know that troublesome or decayed teeth may be saved, and are therefore unwilling to have them sacrificed by extraction, which is all the army surgeon can do; therefore, the want of an intelligent dentist is apparent, who, I have no question, could make it mutually advantageous, (as he would charge for his operations,) by remaining with the army, which, no doubt, he would be permitted to do on making proper representations to those in immediate authority. I trust this hint may be acted upon, to the advantage of both soldier and dentist. Such a procedure would furnish an unanswerable argument in favor of what the profession has been long contending for, Governmental employment of dentists in the army.^{58(p126)}

Such arguments did not prevail, although many officers of the line recognized the need for good dental health. For example, a participant in the Vicksburg campaign of Ulysses S Grant noted the general’s priorities in *Dental Cosmos* in October 1864:

In starting on the movement the General disencumbered himself of everything, setting an example to his officers and men. He took neither a horse nor a servant, overcoat nor blanket, nor tent nor camp-chest, nor even a clean shirt. *His only baggage consisted of a tooth-brush.* He always showed his teeth to the Rebels. *He shared all the hardships of the private soldier, sleeping in the front and open air, and eating hard tack and salt pork [emphasis in original].*^{59(p176)}

In April 1870 Dr Findley Y Clark (1829–1903), a local dentist who would play a leading role in the postwar push for military dentists, commented on the wretched dental condition of General William T Sherman’s troops as they marched into Savannah in December 1864:

When the steamer “Water Witch” was captured, and the prisoners brought to Savannah, we learned there was a Dentist among the number; and that he had quite a supply of material. From this we were led to believe that the Government recognized our profession, and that Dentists were appointed in the army and navy. Shortly after, however, when General Sherman and his hundred thousand men entered Savannah, we were by practical demonstration better informed. From daylight until dark our dental offices were besieged. The cry was, relief from present suffering, “Do something for my teeth that will keep them from aching.” We remember one fellow coming to us a few days after having one or two nerves destroyed in his teeth, who wished, as he said, “to buy a good smart quantity of that white, creamy stuff,” for, said he, “when the boys get on the march, and have the tooth-ache, I can get their last dollar with it.”⁶⁰

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Some Small Steps, No Giant Leaps

The continuing pressure and concerted lobbying from American dental groups during the Civil War produced only small gains in the struggle to establish dental care in the Army. Many soldiers and officers understood the need from personal experience, but little real change took place in the status of military dentistry. The war ended in April 1865 with dentists just where they were 4 years earlier—the Army had no trained dentists officially serving the troops. In the Union army, the surgeon general was seriously impeded by the presence of an established bureaucracy, including his own physicians, who were jealous of its prerogatives and quick to defend its interests. As a result, scant formal change occurred.

However, the knowledge and expertise of dentists was repeatedly validated by the benefits of dental hygiene, as well as in the treatment of maxillofacial wounds and injuries. The dentists' specialized mechanical and metallurgical knowledge made them even more desirable assets in both the North and South. The war-time generation, with its many Union and Confederate veterans, could speak with greater authority and practical wisdom when the drive for military dentists was renewed. By the end of the war, the defeated Confederate forces had adopted a significantly different approach to dental care for its soldiers, which provided an important counterpoint to the bleak Union experience.

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