

Chapter VII

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY, 1901–1904

Introduction

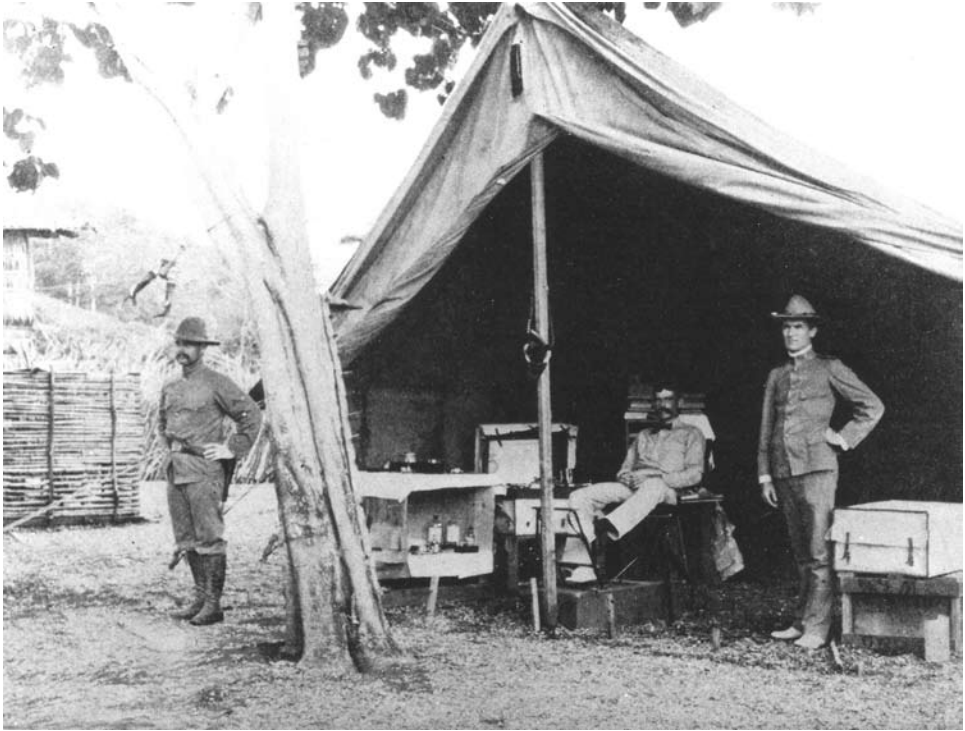
The carefully selected initial group of contract dental surgeons formed the cornerstone for the development of Army dentistry. But until the new dental surgeons actually reached their assigned posts in Cuba, Puerto Rico, the Philippines, and in the United States itself and began to see patients, they could not contribute to the well-being of the soldiers or confirm the wisdom of their service's creation. The new Army dentists learned through trial and error until they and their supervisors became acclimated to the Army and their new duties and gained the confidence and support of the officers and soldiers they served. John Marshall, the senior supervising and examining contract dental surgeon, carried the principal burden of representing the Army's new dental service to the surgeon general, the Medical Department, and the American dental community. Across the Pacific Ocean in the Philippines, Robert Todd Oliver, the second highest ranking dental surgeon, had to build a dental service from scratch for American soldiers heavily engaged in the Philippine Insurrection. The eventual success or failure of Marshall and Oliver in these crucial roles and that of the contract dental surgeons in their daily work would largely determine the future of dentistry in the US Army.

Dentists in the Philippines

The majority of the newly hired contract dental surgeons were to be sent to attend to the more than 60,000 US troops serving in the Philippine Islands. Within days of the passage of the February 2 act, Colonel Charles Greenleaf, Medical Corps, chief surgeon, Division of the Philippines, wrote to the surgeon general about the section of the act that allowed enlisted personnel of the Hospital Corps to be appointed as contract dental surgeons without examination. Such appointments would provide trained dental surgeons in the Philippines much more quickly than would examinations in Washington, but he feared that no members of the Hospital Corps in his division would be eligible because none had been detailed to dental duties continuously for 12 months.¹

On February 11 the surgeon general wrote to the adjutant general and recommended that Hospital Corps privates Samuel Hussey in Zamboanga, Mindanao, and Emmett Craig in Manila be discharged to accept contracts as dental surgeons. Exactly how this action took place is not clear today, but in April 1901, Craig and

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II



*Dental offices under canvas at Camp Weyler, Samar, Philippine Islands, April 1902.
Reproduced from: Dental Cosmos. 1906;48:217.*

Hussey were released from their enlistments to sign on as contract dental surgeons without examination, and thus became the first practicing dental surgeons to provide authorized Army dental care to American soldiers.^{2,3}

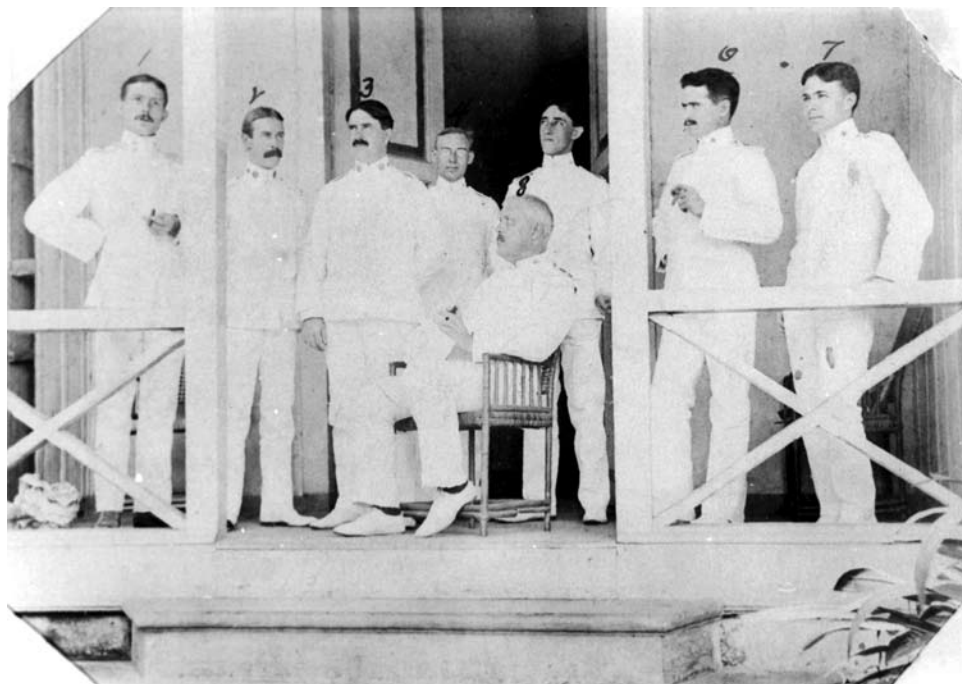
On June 28, 1901, the Army transport carrying William Ware, Ralph Waddell, Hugo Rietz, Seibert Boak, Clarence Lauderdale, and Franklin Wing docked in Manila, which was then under military law. After reporting their arrival to the adjutant general and the surgeon general in Washington, they received orders from the division surgeon that scattered them throughout the various brigades stationed on the islands comprising the Division of the Philippines. In late July, Alden Carpenter, Douglas Foster, and Charles Petre were released from their enlistments to accept contracts as dental surgeons. Jean Whinnery, George Mason, and Frank Stone arrived from the United States on August 17, followed by Frank Wolven and Charles Long on September 6 and 17 respectively. Robert Oliver's arrival in Manila on October 16, 1901, brought the number of contract dental surgeons stationed in the Philippines to 17, over half of the dental surgeons then under contract.⁴⁻⁶ If the dental surgeons were to quickly establish their credibility and their value to the Army, they had to do it in the Philippines.

While still in Washington on examining board duties in June 1901, Oliver asked

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

Surgeon General Sternberg for an assignment to the Philippines at the conclusion of the dental board's work. He thought "that the real business of actual supervising would occur in that division, then in a state of war, where a corps organization of dental surgeons would be an absolute necessity. . . ." On August 1, 1901, he received orders to report to Manila as the senior supervising and examining contract dental surgeon, with instructions to "organize and maintain" the dentists according to the needs of the division, which was then heavily engaged in the insurrection. Oliver later recalled that when he reported to the chief surgeon's office, Division of the Philippines, in Manila, the medical officers received him cordially and offered their assistance in organizing dental support.⁴

One immediate problem Oliver faced in Manila was an equipment shortage. Only 10 dentists had been issued the new official Army dental outfits, and even those were only partially complete. The five former hospital corpsmen were still using their own personal dental outfits. One dental surgeon in Laguna Province (probably William Ware) was forced to make do with the small, standard dental case issued to the Medical Department. The dentists moved around the various posts scattered throughout the American-occupied provinces as the dental needs of the



*Hospital Operating Staff, Manila, Philippine Islands. From left to right:
1. Dr. Edwards; 2. Dr. Smith; 3. Dr. McAndrews; 4. Dr. Seibert D Boak;
5. Dr. William Waddell; 6. Dr. Keller; 7. Dr. Shook; 8. Major Arthur.
Photograph: Courtesy of Family of Seibert D Boak.*

A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II

various commands dictated. From the start, they had more work than they could possibly accomplish. Local commanders frequently expected them to complete all necessary dental work in from 5 to 10 days, which Oliver judged to be “utterly impossible.” Under such limitations, the dentists barely had sufficient time to provide pain relief, which they termed “emergency treatment,” and to do some basic tooth conservation. Virtually every one of the contract dental surgeons assigned to the Philippines commented on the deplorable condition of the soldiers’ mouths.⁴

The Philippine Division had more than 140 posts and was divided into the Department of North Philippines (containing the 1st, 2nd, 3rd, and 4th brigades) and the Department of South Philippines (containing the 5th, 6th, and 7th brigades). After his arrival, Oliver reorganized the assignments so the dentists were assigned based on brigade strength (Table 7-1).

There were not enough dental surgeons to assign one to each of the small posts distributed throughout the archipelago. Consequently, dentists were usually based at one of the larger stations in each territory. Using it as their base of operations, they would travel to the smaller posts, spending about 2 weeks at each before moving on. Patients came in from even smaller, adjacent commands for treatment. This itinerant or roving dental service was thought to allow access to more patients than if the patients were required to come in to one central base in each territory.⁴

The itinerant dentists, their assistants, and portable dental outfits usually moved in the mountain districts by pack train under an armed escort to protect them from insurrectionists. Between the various island stations, they traveled aboard native outrigger canoes called “praos.” As safety improved, quartermaster wagons, the Manila-Dagupan Railroad, and chartered interisland Army transports were used. The outfit that always traveled with the dentists was packed in four chests and two crates. One crate contained the take-down chair and its equipment. Dental instrument chests contained all the dental supplies as well as operative instruments and appliances, and the dental engine chest held the engine (drill) and its equipment.⁴

TABLE 7-1
NUMBER OF DENTISTS ASSIGNED TO THE DIVISION OF THE PHILIPPINES

Department of North Philippines		Department of South Philippines		Manila	
Brigade	No. of dentists	Brigade	No. of dentists	Brigade	No. of dentists
1st	3	5th	2	N/A	2
2nd	2	6th	1		
3rd	3	7th	2		
4th	2				

Data source: Oliver RT. Three years’ service in the Philippines. In: *Transactions of the National Dental Association*. Philadelphia, Pa: The SS White Dental Mfg Co; 1906.

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

In general, dental surgeons were given an operating room in the various station hospitals that they visited. However, it was not uncommon for them to be assigned space in the office of the quartermaster or even the commanding officer. Sometimes, particularly early in the pacification, their offices were located in various churches, monasteries, and even native shacks that were in close proximity to the hospitals. When no buildings were available, tents were used as operating rooms but proved to be a poor substitute because of lighting problems (direct sunlight was too hot and canvas-diffused light cast false shadows, preventing good visibility into the mouth). The tents were also damp, which caused the dental instruments to rust. Occasionally the dental surgeon was assigned a house to be used as an office and living quarters. At Camp McGrath in Batangas Province, where the 12th Cavalry Regiment was stationed, the commanding officer even had a special dental office built from plans that his dental surgeon submitted. However, this action was the exception rather than the rule.⁴

The dental surgeons soon learned that many dental instruments were not suited to the tropical climate. The first large consignment of supplies and equipment was stored on shelves in a well-ventilated storeroom at the medical supply depot in Manila. After a few weeks, many of the instruments, particularly the delicate root canal broaches, reamers, drills, and the like, were corroded with rust and therefore unusable. To prevent rusting, the larger instruments were wrapped in wax paper, carefully twisted at each end, and the smaller instruments were shipped either dipped in wax or packed in sealed phials.⁴

The contract dental surgeons suffered their first loss in February 1902 with the death of Charles Petre, DDS. After graduating from the Northwestern University Dental School, Chicago, in April 1899, Petre enlisted in the Army on August 9, 1899, as a private for service in the Philippines and was assigned to Company F, 20th US Infantry. Taking his dental instruments with him, he was detailed to the Hospital Corps in September 1899 while en route from San Francisco to Manila. Transferred officially to the Hospital Corps on January 13, 1900, Petre was detailed by "verbal order" of the commanding officer to do dental work for the officers and enlisted soldiers at the military hospital in Aparri, Luzon. On April 21, 1901, he applied to the surgeon general's office for an appointment as a contract dental surgeon, and on July 25 he signed his contract as a dental surgeon. On February 12, 1902, he died of "pyonephrosis intestinal obstruction."^{7,8}

Years later, Oliver offered this comment on the Army's oral hygiene and the service that his "little pioneer corps" of dental surgeons rendered during his assignment in the Philippines:

When the Dental Corps joined the army, during the Philippine Insurrection of 1901, and made its first surveys of the dental conditions, the results were simply appalling. The men had been on active campaign in tropical fields for many months, where no opportunities for dental attention existed. Toothbrushes and dentifrices were not issued regularly, and those of the original issue had long since passed usefulness. The mouths and teeth of these soldiers presented conditions bordering on filth, and in many cases, with resultant pathological lesions. If, at that time, we could have utilized a corps of dental hygienists for the purpose of scaling and cleaning teeth, as a preliminary procedure, the health and welfare of our 60,000 troops in the Philippine Islands would have been greatly improved.^{9(p1118)}

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

a



(a) Turn of the century dental chest, circa 1901. (b) Closed.
(c) Removable fabric pouch with space for tools was placed over of the top shelf before closing.
Photograph: Courtesy of US Army Medical Department Museum. Med 7270-1,2,3.

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

b



c



A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II



*Hospital tent interior showing furnishings and occupants, circa 1898.
Photograph: Courtesy of US Army Medical Department Museum. Spawar-031.*

By June 1902 Petre's loss was more than balanced with the arrival of four new dentists from March through May: John McAlister (1872–1935), John Millikin (1876–?), George Casaday (1874–?), and Julien Bernheim (1876–1943; later colonel and Dental Corps chief, 1928–1932), who was selected to fill the vacancy created by Petre's death. When the Philippine Insurrection ended on July 4, 1902, Oliver had 20 dentists at work throughout the islands.^{5,10}

In the Field in the Philippines: Boak and Stone

Seibert Boak, the first dentist appointed among the examinees, described his initial Philippine duty assignments on the island of Luzon:

I was ordered to the province of Pampanga, which is about forty miles from Manila on Manila Dagupan R.R. [railroad], and where the finest sugar cane is raised. I arrived just in time for the rainy season, and in my five months' stay there had the experience of going through earthquake, typhoon and flood. Rain! We in the States have never seen a real rain as compared with these, where it rains straight for a month or two at a time. I certainly thought I was going to live to see the deluge reproduced. About

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

the time I got my office fixed up to my satisfaction in one of the above-described nipa shacks of four rooms, a three weeks' rain started in and ended in a typhoon. I had to walk to post headquarters for my meals, and while there eating supper the typhoon started; consequently, we stayed up all night and saw our kitchen blow away. Next morning bright and early I started for my hut through a small river running down the street. The sight of devastation that met my gaze quickened my steps considerably, for the better part of my house was nowhere to be seen. I afterward found all my floatable articles performing aquatic feats in the large pools of water. But with hard work and the assistance of my hospital corps man and muchacho (boy) managed to get the office in shape by 2:00 p.m. So I did all necessary work in the rain until the quartermaster could get a native to fix my roof.⁶

After that experience Boak moved to Zambales Province for 3 months and finally to Tarlac Province. The troops welcomed him wherever he went, and all ranks treated him cordially, though one officer told him, "Your profession is a necessary evil we shall be unable to dispense with after awhile." Unmarried, Boak usually took his meals with the post staff, paying like any visiting officer.⁶

His duty day normally ran from 9 AM to 4 PM. In addition to his cases of equipment, he carried a small reference library provided by the Office of The Surgeon General, which included Burchard's *Pathology*, Marshall's *Oral Surgery*, and the *American Text-book of Operative Dentistry*. The government also provided subscriptions to *Dental Cosmos*, *International Dental Journal*, and *Dental Review*.⁶

Boak found that at least 60% of the personnel he examined had had no dental care other than extractions. Thus, he saw his first mission as overcoming the soldiers' "prejudice against dental treatment." This not only put them on the path to better health, but also conditioned them to seek better dental care once they left the service, benefiting them personally and dentistry in general. The result of better dental care could also be seen in the reduction of gastrointestinal complaints derived from poor oral conditions. Boak encountered many unusual cases that he felt increased his span of knowledge, but serious cases requiring major surgery and prosthetic work had to be referred to the base hospitals at Manila or Cebu because of lack of equipment.⁶

When he received orders to go to a new station, Boak gave advance notice of his arrival to the station commander, who readied an operating room and quarters. Upon arrival, his presence was announced to all commanding officers, who were asked to identify and schedule any of their soldiers who required care. Commanders were also asked to provide a list of all soldiers with syphilis so special precautions could be taken to avert the spread of secondary infection.⁶

With his itinerant deployment, Boak observed that he rarely had time to work a complicated case to satisfactory completion. Often he could only take temporary "emergency treatment" measures and move on. When these failed before his return, he gained an undeserved bad reputation and often caused the patient further discomfort. The remoteness of many posts and the deplorable traveling conditions often meant patients reached the dentist well into the final crisis. The huge volume of work, combined with itinerancy, frequently precluded any follow up, rarely allowing assessment of fully completed treatment. Many soldiers returned to the United States in various stages of dental care, generating some undeserved criticism from military and civilian dentists who took over treatment upon their return.⁶

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

Boak's first office at San Fernando, about 40 miles north of Manila, was the two-room shack that was destroyed by a typhoon just after he had set up his instruments. In a June 1907 article in *The Dental Register*, he related the many problems he encountered in trying to perform dentistry on the troops:

Active campaigning, scant water supply, entire time filled with martial duties, constant alertness for the enemy, and in self-preservation, with loss to appear anything but the real fighting machine, this being especially true of the troops stationed in Mindanao and the Sulu archipelago, amongst the Moros, which rendered it almost impossible for a soldier to give even the ordinary care to his person, much less hygienic attention to his mouth. To these conditions add the trouble to secure a soldier after beginning treatment; when sent for he is either out on the firing line, doing guard or old guard fatigue duty, on a scouting expedition, or temporarily attached to some other outfit; or about the time you were in the midst of a month's visit to some command, be ordered away, or the command get field orders; supplies fail to reach you, due to lack of transportation by water or land, leaving you to complete a two months' detail without amalgam, cement, nerve broaches, or other necessary supplies, necessitating the use of mummifying paste, sealed in with cotton and sandarac varnish or gutta percha, where pulps have been extracted. It was often a serious question when out of supplies just what to do to secure permanent relief from pain and suffering, the dental surgeon being thrown on his own resources and ingenuity to accomplish it. A conscientious professional man will not extract except as a last resort, especially if he sees a chance of saving teeth that would otherwise be sacrificed.

Let me put before you a typical case. I was ordered to go through a battalion of infantry, 450 men in the battalion, in one month, men being brought to the office in squads of twenty under a non-commissioned officer. Upon examining a soldier, find on left side one or two of the superior or inferior molars or bicuspid missing. Right side a molar or a bicuspid, or both, broken down and necrosed, this side bearing the whole stress of mastication. The question is, shall we extract them, leave them in that condition, or begin treatment, knowing the difficulties that will handicap us in the conservative treatment of such cases. If we extract we save our future reputation and take no chances, for if the soldier has trouble, not understanding the conditions or disadvantages we labor under, and has to suffer with no hopes for relief in sight, we get damned for it; for over there it is not a case of getting on a train or boat and in an hour or so get relief, but in most cases it means days. If we make some excuse and put them off, in all probability they will begin to give trouble at a very inopportune time, and a kick is registered by the commanding officer of the company, that a dental surgeon visited that post and left before he finished his work. This being forwarded through military channels, everybody from the C.O. up gets a chance to express their opinion, favorable or otherwise, as the case may be, and in all probability you are called upon to explain why treatment was not furnished in certain cases. If we start in to treat, and when ordered away find root canals are not in condition to fill, we have to place a dressing in the roots, insert cement and trust to nature to do the rest. This also applies to fillings. . . . In the military practice we examine the men as a body and do the required work whether they wish it or not, and the fact of men being ordered to have dental work done, independent of their own desires in the matter is not calculated to secure their co-operation, as general orders require that any soldier unfit for duty, from a cause that is removable by an operation not endangering life, who refuses to be operated upon, will be tried by court-martial and punished.¹¹(pp289-292)

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

Some of the dentists experienced difficult and dangerous field duty. Frank Stone (later colonel and Dental Corps chief, 1934–1938, and the last of the original contract dental surgeons on active duty) was first assigned to Jolo Island and then to Malabang on Mindanao, where active warfare was underway against the Muslim Moros. Carrying his dental equipment on pack mules, he and his assistant accompanied the troops in operations around Lake Lanao. He later stated that his deployment marked “the first time that dental equipment was ever packed and carried in a supply train in actual service in any Army in the world.” He frequently came under fire while working on patients in camp. On the march, he moved with the rear guard of the pack train and, because he could not do dental work, its commander used him as a courier to maintain contact with more advanced elements led by Captain (later General of the Armies) John J Pershing. Stone often found himself alone on the trail, sometimes menaced by Moros as he performed his duties. After 2 years of such arduous service, Stone was not in good health and was happy to get orders for duty at the hospital in Manila. Unfortunately, his field service left him so ill with amoebic dysentery that he left Manila on October 10, 1903 headed back to the US Army General Hospital at the Presidio of San Francisco as a patient rather than a practitioner. Stone was subsequently stationed there until 1906.^{5,12}

Marshall at the Presidio of San Francisco

While Oliver was still on his way to Manila, Marshall arrived at the Presidio of San Francisco to find himself faced with a major organizational problem. Apparently some misunderstanding had arisen about whether Surgeon General Sternberg intended to assign Marshall to the post of the Presidio or to the US Army General Hospital, Presidio of San Francisco, Department of California. On September 2, 1901, Lieutenant Colonel (later Colonel and Brigadier General) Alfred Girard (1841–1914), Medical Corps, the hospital’s commanding officer, telegraphed the surgeon general’s office asking where Marshall was to be assigned. The ambiguous answer came back that Marshall was assigned to duty at the post, but that he could work at the hospital and at other posts in the Department of California under temporary assignments.^{13,14}

Marshall was unhappy with this arrangement. On September 6 he wrote to Colonel William Forwood, the acting surgeon general, while Sternberg was in the Philippines, telling him that before leaving Washington Sternberg had directed that Marshall would be stationed at the general hospital, where he would have “greater opportunities for professional service and study than any other station in the country.” Although his dental outfit had arrived, as of September 6 Marshall had not been assigned either an office or quarters. It seemed that there was a shortage of quarters for officers and that the post hospital was overcrowded. Girard, too, had expected him to be stationed at the hospital, not the post. On September 12 Forwood informed Marshall that although he personally favored assigning him to the hospital, the orders that Sternberg had left before his departure were that he should be assigned to the post.^{15,16}

Upon his return to Washington, Sternberg telegraphed Marshall on October 11,

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II



*William H Forwood, surgeon general, 1902.
Photograph: Courtesy of the National Museum of Health and Medicine,
Armed Forces Institute of Pathology. NCP 3565.*

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

asking whether he still preferred to be assigned to the general hospital. The next day, Marshall replied that although the current arrangements were “satisfactory,” he still preferred to be assigned to the general hospital as soon as quarters were available there. Currently, he had quarters at the post with a one-room office at the hospital administration building, thanks to Girard. The situation at the Presidio was such that unless the quartermaster general built him an office building (which was unlikely to happen), no space was available. At the general hospital, room would become available as soon as the new officers’ ward was completed. Marshall thought he needed at least three rooms, one for an office and waiting room, one for an operating room, and one for a laboratory and extracting room. The surgeon general directed Girard to provide the rooms that were accordingly furnished for dental operations. Marshall remained assigned to the post of the Presidio, but physically worked in the Presidio General Hospital until late July 1905.^{17–22}

In addition to better accommodations, Marshall soon found that being in the Presidio General Hospital put him at the center of Medical Department activities at the Presidio and Department of California. Because of its mission in support of American forces deploying to and returning from the Philippines, the Presidio General Hospital was the largest and most important Army facility. As such, its commanders were carefully selected, and included Lieutenant Colonel George Torney (1850–1913), who took over in March 1904 and commanded it until he was chosen in November 1908 to succeed O’Reilly as Army surgeon general. Working for 4 years with Torney provided some advantages to Marshall in his dealings with the surgeon general’s office after January 1909.²³

New Contract Dental Surgeons Join the Army

Although the original dental examining board never reconvened and was officially dissolved on March 9, 1905, the three examining and supervising dental surgeons, John Marshall, Robert Oliver, and Robert Morgan (replaced in late 1901 by John Hess), were constantly called upon to examine candidates for their physical and professional fitness to be offered contracts as dental surgeons.^{21,24,25} After Oliver reached the Philippines, he examined three enlisted soldiers for appointments as contract dental surgeons in late 1901, but found none to be qualified.⁵ In February 1902 John Hess examined and passed Frank McDermott, who never served after accepting his contract.^{26–28} From November 4, 1901, through July 5, 1902, Marshall handled the bulk of the examinations, which, he informed the surgeon general, “have been conducted with the same degree of care and thoroughness, as were those conducted by the full board during its sessions in Washington, D.C.”²¹ He examined 13 candidates at the Presidio and passed eight to fill existing vacancies or to be added to a list of eligible dentists who could be offered contracts should a vacancy occur.^{21,29,30} The final three of the original 30 authorized contract dental surgeon positions were filled by candidates examined and passed by John Marshall: Alexander Bacon on November 25, 1901, who was ordered to Cuba to replace Robert Morgan; John McAlister, Jr (1872–1935) on January 23, 1902, who was assigned to the Philippines, where he arrived on March 10; and George Casaday (1874–?) on February 3, 1902, who was ordered to the Philippines, where he arrived on April 21.³¹

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

On February 17, 1902, Marshall examined and passed John Millikin (1876–?), who signed his contract on March 3 and replaced Hess, who had taken Morgan's position. The next two candidates Marshall examined eventually became chiefs of the Dental Corps: Julien Bernheim (who signed a contract on April 9 and was ordered to the Philippines to replace the recently deceased Charles Petre) on March 22, 1902; and Rex Rhoades (1875–1959), on July 5, 1902. Rhoades (later colonel) accepted his contract on November 10, 1902, and was the only two-time Dental Corps chief, serving before and after Bernheim from 1924 to 1928 and from 1932 to 1934. A sufficient pool of eligible candidates now existed, so no further examinations were held. When Bacon's contract was annulled in late June 1903, William Hammond replaced him. When some of the initial dental surgeons left the service upon expiration of their contracts in 1904, George Stallman replaced William Fisher on July 21, 1904, and George Gunckel replaced George Decker on August 6, 1904.³¹

American Forces in Cuba and Puerto Rico and Morgan's Replacement

As soon as contract dental surgeons were authorized, Army leaders in Cuba began pressing to have some assigned. In May 1901 Colonel Frank Baldwin, commanding the 7th Cavalry and garrison at Columbia Barracks in Havana, urged that at least one dentist be sent to his post. Lieutenant Colonel Valery Havard, the Army of Occupation's chief surgeon, and Major General (later Lieutenant General) Leonard Wood, its commander, both enthusiastically supported the request. They observed that the number of troops in Cuba justified the assignment of at least two dentists, one based at each end of the island and roving to provide support to other garrisons. Morgan and Dr George Decker were assigned in August 1901.^{32–35} Shortly afterward Morgan became ill, and on October 31, 1901, Havard, now chief surgeon, Department of Cuba, reported his condition "serious" and recommended that he be granted immediate leave and be returned to the United States.^{36,37}

Morgan left Cuba on November 3 on a month's sick leave, which the surgeon general subsequently extended to 2 months. Sternberg determined that Morgan was too sick to return to duty and that his contract would be annulled for physical disability, which it was on February 3, 1902.³⁷ On November 29, after learning more fully of Morgan's problems, Sternberg asked Marshall to recommend a replacement from among the current dental surgeons. On December 6 Marshall identified doctors Edwin Tignor, Robert Updyke, and John Hess as the best candidates to replace Morgan, but recommended Tignor as "the best qualified man in the Corps for this position." However, Sternberg selected John Hess (1870–1932) as the third supervising and examining dental surgeon, which Marshall later agreed was "a wise selection." The surgeon general instructed Marshall to give Hess "such instructions as you may think necessary regarding these examinations, the preparation of reports thereof, and other matters your experience may dictate," so that Hess would be uniform with Marshall and Oliver in his examinations and reports.^{37–41}

Morgan's replacement in Cuba was Alexander Bacon, whom John Marshall had examined and passed and who accepted a contract on November 25, 1901. Bacon was assigned to Cuba and served there until April 30 the following year.⁴²

Dr Hugo Voorhies reported for duty in Puerto Rico after passing his examinations

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY



*Edwin P Tignor as a contract dental surgeon, circa 1901.
Photograph: Courtesy of Lorraine Tignor.*

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

and being hired in 1901. Although warned that military officers would receive him "very abruptly and formally," he later commented in an article in *The Dental Forum* that "on reporting, Col. Buchanan, Commanding Officer, and Capt. Blunt, Adjutant General of Porto Rico, greeted me with: 'Doctor, we are glad to see you;' 'been expecting you,' 'needing you,' and many other pleasing remarks which I was glad to hear."⁴³ He was courteously received wherever he went, and at the Officers' Club "some of them immediately proceeded to tell me about this tooth and that they wanted me to look after, so I began to feel, for the first time, a little at home and something of a fixture."⁴³ During his months on the island before transferring to Fort Porter, New York, in December 1902, Voorhies found very poor dental health among the soldiers but he reported that his work appreciably helped to change their dental hygiene habits:

As to the nature of the work, there is considerable extracting, owing to the poor condition of the men's teeth, who have been in the service for some time, and who had not or did not save sufficient means to have their teeth attended to and are beyond redemption. The officers, as well as the enlisted men, highly appreciate the dental services rendered, and often remark what a great benefit it is to them. . . . We clean a good many teeth and do work for soldiers who never before received treatment of any kind. We instruct them in regard to caring for their teeth, and see that they furnish themselves with tooth brushes.^{43(p176)}

While he noted that in Puerto Rico and later assignments the soldiers at every level seemed to genuinely appreciate his arrival as he rode his circuit, he also commented that "no doubt my departure was as equally enjoyable to them."⁴⁴ The beneficiaries of dental care immediately sensed the value of the new contract dental surgeon, even if they still retained much of their fear of dental treatment.

Voorhies's "The Care of the Teeth"

While in Puerto Rico, Voorhies had grown deeply concerned about the dental health of the soldiers he was treating. This concern prompted him to prepare an article titled "The Care of the Teeth" in English and Spanish, which he submitted to the chief surgeon of the Department of the East on May 29, 1902, and recommended for distribution to officers and enlisted soldiers on the island. In his article, one of the first preventive dentistry tracts prepared in the Army, he outlined the fundamentals of dental and oral health and laid out a basic concept that has guided much of preventive dentistry: "Precaution in youth is prevention in maturity: habits formed in childhood are practiced throughout life. If you properly care for your teeth in early life, you will not be apt to neglect them in after years." He recommended "a good tooth brush with bristles long enough to penetrate well the space between the teeth, have them stiff but not too stiff . . .," brushing after rising and every meal and before retiring at night, regular flossing, occasional use of mouth washes, removal of tartar deposits on the teeth, care of the gums, and visits to the dentist for examinations every 6 months. In his article, Voorhies concluded that "one person in a hundred have good teeth, ninety-nine in a hundred could have good teeth with proper attention." Although Voorhies's tract was written in

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

1902, it reads as if it were recently released by the American Dental Association.⁴⁵

Brigadier General William Forwood (1838–1915), who succeeded Sternberg and served as Army surgeon general from June 8 to September 7, 1902, promptly sent Voorhies's proposed circular to John Marshall for comment on June 12. On June 23 Marshall replied that it was a good idea to place information on dental care and prevention of caries and oral diseases "in the hands of the Officers and enlisted men of the Army. . . ." ^{46,47} He went on:

I believe if the enlisted men could be taught the value of oral hygiene, dental caries and the diseases which result from it would be much less prevalent than they are at present, while gastric and intestinal diseases, which are so common in camp life, might be greatly lessened.⁴⁷

Marshall thought that "if a few simple rules upon the hygiene of the teeth and mouth, expressed in cogent language, were printed and distributed to each command sufficient in quantity to reach the enlisted men, that this would be sufficient to call proper attention to the subject."⁴⁷

On July 1 Forwood returned Voorhies's article and asked Marshall "to prepare suitable rules for the care of the teeth and hygiene of the mouth, to be embodied in a circular for distribution among the officers and enlisted men of the Army." Marshall returned the requested information to the surgeon general's office on July 16.^{48,49} Forwood retired on September 7 and Robert O'Reilly (1845–1912), who had been the chief surgeon of the Department of California at the Presidio of San Francisco since June 1902, became the surgeon general (1902–1909). A few days later, O'Reilly told Voorhies that his proposed article on dental hygiene was "duly considered." However, "it was not deemed advisable to publish it in circular form."⁵⁰ There is no indication that the Voorhies circular ever appeared, but Marshall's work was just begun and would resurface in September 1903, soon after he presented his paper at the NDA meeting in late July.

John Marshall's 1902 Report on the Presidio's Dental Service

All of the contract dental surgeons, especially John Marshall, spent endless hours writing about their status and work for dental journals and speaking at national, state, and local dental societies whenever and wherever they could. A good example of this was Marshall's speech in June 1902 at the annual meeting of the California State Dental Association at San Francisco, where he spoke about the first year of the dental service at the Presidio of San Francisco. *Dental Cosmos* reported as follows on Marshall's talk:

The necessity of dental surgeons in the army is very great. In the last nine months at the Presidio 3452 sittings were given and between five and six thousand operations performed. Three chairs are in continual service from 9 A.M. to 4 P.M., with an hour's intermission at noon for lunch. A great many diseases are encountered that are peculiar to the tropical climates, and inflammatory conditions of the mouth that the speaker has not seen before are apparent in the mouths of the returning soldiers from the Philippines. There is an ulcerated condition of the gums and the oral

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

mucous membrane, beginning at the festoons, sweeping in both directions following the gum line and traversing the entire mouth. The teeth become loosened, but there is no other evidence of scorbutic symptoms. Most cases have a great deal of salivary calculus, and, in treating these lesions of the mouth, dysentery and diarrhea are cured in a few weeks that without treating the oral cavity would have required care for months.^{51(p1072)}

Marshall then described the Presidio dental clinic's personnel:

I have with me in my office four hospital corps men. One of them is a graduate of the Toronto Dental College. The other man has had one year in college, and I learned afterwards that he had about five years in some of these cheap John offices as an operator. I have another man who acts as clerk and keeps the records, and a fourth man who assists me individually at my chair. There are three chairs going all the time from 9 o'clock in the morning until 4 o'clock in the afternoon, with an hour or an hour and a quarter intermission. We are doing every day just as much work as it is possible for three men to do. I had an idea that there would be a time when the work would let up but we are just as busy to-day as we were when we first started in. I could keep five men busy at the Presidio. We have something like 5,000 troops all told, that is, in camp, in quarters and in the hospital. More than that, all the outlying posts in this department come to the Presidio for their dental care. So I do not expect we shall ever find the time when we shall have a let up in the amount of work we have to do.^{52(p530)}

John Marshall's Official Reports on the Work of the Dental Surgeons, 1901–1903

As the senior supervising and examining contract dental surgeon, John Marshall was responsible for reporting officially to the surgeon general on the annual activities of all of the dental surgeons in the Army. He also reported widely to the dental community through the dental press and journals, such as *Dental Cosmos* and *Dental Review*, and spoke often at national, state, and local dental societies to keep dentists fully informed on what the Army dentists were doing. Despite the problems noted by the dentists in overseas positions, in a letter published in the February 1902 *Dental Review*, Marshall assessed the overall situation for Army dentistry as favorable. The support of the retiring Surgeon General George Sternberg, who "has given the dental corps every facility for its work" and "gave his hearty approval to all that we asked for," was largely responsible for this situation. Already commonly referred to among themselves and in the dental press as the "Dental Corps of the Army" or more simply the "Army Dental Corps," the contract dental surgeons were now deployed throughout the Army, hard at work, beginning to change dental hygiene habits, and were generally well received (Table 7-2).^{53–55}

Marshall's official reports for 1902 and 1903, actually covering calendar years 1901 and 1902, provide a more detailed look at the work of the dental surgeons, the dental health of the US Army of the time, and some of the major issues with which the dental surgeons dealt. Since 1818 the Army surgeon general had compiled a detailed report on the annual activities of the Medical Department that was submitted to the secretary of war and published as the "Annual Report of The Surgeon General." On August 19, 1902, after tediously collecting as much data as he

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

TABLE 7-2

THE 1902 ROSTER OF CONTRACT DENTAL SURGEONS, US ARMY

Examining and Supervising Dental Surgeons	Location
John S Marshall	San Francisco, California
Robert T Oliver	Manila, Philippine Islands
John H Hess	West Point, New York
Contract Dental Surgeons	
George M Decker	Havana, Cuba
Alexander P Bacon	Havana, Cuba
Hugh G Voorhies	San Juan, Puerto Rico
Robert P Updike	Fort Leavenworth, Kansas
Edwin P Tignor	Fort Riley, Kansas
William C Fisher	Fort Sheridan, Illinois
Ord M Sorber	Fort Sam Houston, Texas
William H Chambers	Fort Monroe, Virginia
John D Millikin	Philippine Islands
Julien R Bernheim	Philippine Islands
Emmett J Craig	Philippine Islands
Samuel W Hussey	Philippine Islands
Clarence E Lauderdale	Philippine Islands
Seibert D Boak	Philippine Islands
Franklin F Wing	Philippine Islands
George L Mason	Philippine Islands
Hugo C Rietz	Philippine Islands
William H Ware	Philippine Islands
Ralph W Waddell	Philippine Islands
Jean C Whinnery	Philippine Islands
Frank H Wolven	Philippine Islands
Frank P Stone	Philippine Islands
Douglas E Foster	Philippine Islands
Alden Carpenter	Philippine Islands
Charles J Long	Philippine Islands
John A McAlister	Philippine Islands
George H Casaday	Philippine Islands

Data source: Roster of dental surgeons, US Army. *Dental Cosmos*.1902;44:402.

A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II

could from the dental surgeons (the returns from the Philippines were incomplete), Marshall submitted his initial report summarizing the selection, assignment, and work of the initial contract dental surgeons. Delays in shipping and receiving equipment and supplies, especially in the Philippines, he noted, had prevented some of the dentists from being fully operational until late in 1901.⁵⁶

Marshall reported that in less than a year in 1901, the dental surgeons had seen 9,148 patients—9,125 regulars (2,872 in the United States, 5,174 in the Philippines, and 1,079 in Cuba and Puerto Rico), and 23 volunteers (7 in the United States and 16 in the Philippines), but again noted that the Philippine reports were incomplete and the numbers there would likely be higher. Dental procedures performed on these patients included treating 8,408 teeth with caries, of which 7,035 teeth were filled and 2,072 extracted. The large number of extractions was due to severe dental caries found among soldiers in Cuba, Puerto Rico, and the Philippines. The dental surgeons were instructed to conserve all teeth that could be made healthy with treatment to minimize their loss. Marshall noted that dental caries seemed to be more active after the soldiers had been in the tropical climate for several months. The exact cause for this was not then clear, but Marshall believed that it was a combination of poor dental care during active operations, the effect of the tropical climate, and food and dietary changes.⁵⁶ He concluded:

... pyorrhea alveolaris and inflammatory and ulcerative conditions of the gums and oral mucous membrane are very prevalent among officers and enlisted men who have served, or are serving in the tropics. These conditions are more noticeable in those who have been in the Philippines for a considerable period, and in those who have suffered from certain forms of illness. These conditions seem to be largely due in the former to the enervating and debilitating effects of the hot climate etc., and in the latter to such wasting diseases as gastritis, diarrhea, dysentery and the continued fevers.^{56(p4)}

TABLE 7-3
DENTAL CARE IN THE US ARMY, CALENDAR YEARS 1901–1902

	No. of Cases	
	1901 (partial year)	1902 (full year)
Cases of dental caries	8,408	31,092
Fillings (all types)	7,035	24,652
Extractions	2,072	6,043
Patients	9,148	16,161
Total operations	13,498	49,483

Data sources: (1) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1902: 18–24. (2) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG;1903: 20–29.

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

Marshall’s reports for 1902 and 1903 contain the first detailed accounts of the dental health of the US Army at the time. Though much had been written in previous years, the details only became clear when the dental surgeons actually began their daily work with the soldiers (Table 7-3). Perhaps more significant in reinforcing Marshall’s conclusions are the statistics when broken down by geographic area for calendar year 1902, the first full year of dental operations (Table 7-4). But Marshall’s report often read more like an advertising pamphlet for the dental surgeons and the establishment of a permanent dental corps:

The service of the dental corps have been highly appreciated by the officers and enlisted men of the regular and volunteer armies and have proved very satisfactory to the Medical Department, because they have been able to relieve a great amount of acute suffering, and to conserve a large number of teeth and restore them to a healthy condition, thus almost immediately returning to duty many cases that were previously carried for days upon the company sick-report. This has resulted in greatly reducing the loss of valuable time to the service, incident to diseases of the mouth, teeth and jaws, and relieving and hastening the cure of such gastric and intestinal disorders as were due to defective mastication, and infective and suppurative conditions of the teeth and oral cavity. . . . The cost of maintaining the dental corps is small when compared with the relief from suffering obtained and the greater efficiency of the officers and men, who have received the services of the dental surgeons. Good teeth are an essential factor in maintaining the general health of our troops and consequently of their efficiency, and on account of the increasing prevalence of dental caries and the abnormal condition growing out of the disease the dental surgeon has become a necessity to the army. Early provision should therefore be made for the establishment of a permanent corps of dental surgeons attached to the Medical Department.^{56(p6)}

TABLE 7-4
DENTAL CARE IN THE US ARMY BY STATION, 1902

	No. of Cases			
	United States	Philippines	Cuba and Puerto Rico	Total
Cases of dental caries	11,206	18,626	1,260	31,092
Fillings (all types)	9,310	14,468	874	24,652
Extractions	2,017	3,632	394	6,043
Patients	6,940	8,153	1,068	16,161
Total operations	18,971	28,115	2,897	49,483

Data source: Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1903: 20–27.

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

Marshall's report was printed in the 1902 annual report largely as he submitted it, his editorializing included. His report of July 2, 1903, contained as much opinion as did his earlier report, but this time Major (later Brigadier General) Walter McCaw, Medical Corps, who edited the annual compilations in the surgeon general's office, used a generous red pencil. Marshall's more opinionated comments never appeared in the printed 1903 annual report, which was more statistical and factual. When finally printed, a new paragraph, probably written by McCaw, was inserted in the report, stating:

The foregoing interesting tabulations, with professional comments, have been ably prepared for this report by Dr. John S. Marshall, contract examining and supervising dental surgeon, U.S. Army. The work of the contract dental surgeons has been of a high order and deserves commendation. Reports from experienced officers of the Army indicate that appreciation of the faithful and efficient services of the army dentist is steadily growing among officers and men.⁵⁷⁻⁵⁹

What Marshall actually submitted in his report was as follows:

In the report of 1901 attention was called to the value of dental surgeons, from the economic standpoint, and the statement was made that "the cost of maintaining the Corps of Dental Surgeons was small when compared with the relief from suffering obtained, and the greater efficiency of the officers and enlisted men who had received the services of the Dental Surgeons." It may be added that the financial saving to the government will be very considerable in the future by preventing the loss to the service of the officers, enlisted men and nurses, by reason of incapacity for duty incident to dental diseases and their sequelae, and also to the probable future reduction in the number of claims for pensions, by preventing the loss of the teeth from disease while in the service. . . . The Dental Surgeons have therefore become an indispensable adjunct to the Medical Department of the Army, and it is recommended that suitable legislation be enacted to place them on a permanent basis in the service.⁶⁰

The surgeon general's office would not allow such explicit lobbying for a dental corps to be published in its official report to the secretary of war, especially when the dental associations were lobbying for the creation of a commissioned corps to replace the contract dental surgeons and the secretary opposed it.

In collecting the data from his fellow dental surgeons for these annual reports, Marshall noted serious shortcomings in the system of recording and reporting dental operations. On September 12, 1903, he wrote to the surgeon general of the importance of the numerical reports. He wanted a structured system of accurate reports using a more detailed form and wanted all the reports to come to him:

Reports of this character to be of scientific value must be correct and it goes without saying that there has never been in the history of the profession any method of gathering and tabulating statistics upon these subjects, which cover so large a number of cases and with such completeness of details as do those of the Corps of Dental Surgeons, U.S.A. . . . These statistics are bound to be quoted, discussed and written about a great deal in the future by dental authors and on this account they should be made as accurate as possible.⁶¹

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

It took more than a year for Marshall to finally bring the surgeon general's office around to his views on the inadequacies of its proposed register of dental operations and to accept his suggested form for standardized reporting.^{62,63} Accurate and complete data collection on dental operations was an important tool in patient care and in demonstrating the value of the dental surgeons' work to improving the health of the Army in an era that prized the powers and benefits of modern science and research. Marshall placed emphasis on this aspect of his work because it could contribute significantly to winning the argument for commissioned status.

John Marshall and the 1903 Annual Meeting of the National Dental Association

In June 1903 politics surfaced when the president of the National Dental Association (NDA), Dr LG Noel of Nashville, Tennessee, wrote to the surgeon general requesting that Marshall not be appointed as the Army's delegate to the association's annual meeting in Asheville, North Carolina. Apparently Mark Finley, the chairman of the association's Committee on Army and Navy Dental Legislation, did not want Marshall to attend, going so far as to call on O'Reilly in person to express his opposition to Marshall's attendance. Noel stated that although he did not desire to make this incident "an open fight" with Marshall or "stir up trouble" among the dental surgeons, he wanted to "stop his coming." He hinted that Marshall had caused "trouble" 2 years earlier at the 1901 Milwaukee meeting. Noel contended that the entire committee, as well as the chairman of the executive committee, Dr JD Patterson, and three of its other members, were also opposed to Marshall.⁶⁴⁻⁶⁶ The other most influential member of the Army and Navy committee was Williams Donnally, who had originally desired Marshall's position on the dental board for himself and had been at odds with him since 1901. On July 6, 1903, the surgeon general's office informed Marshall that the secretary of war, "after careful consideration of the matter," thought it not "practicable" to designate him as the Army's delegate.⁶⁷

Not only did Marshall show up in Asheville, however, but he also presented an important paper on preventive dentistry and the oral diseases peculiar to the troops in the Philippines. Because the Presidio was the primary reception center for soldiers either embarking or disembarking for service in the Pacific theater, Marshall was stationed at the ideal location to evaluate the troops returning from the Philippines. The surgeon general's report for the year ending June 30, 1903, showed that dental diseases were 18.27% higher among the troops serving in the Philippines than those stationed in the states. Periodontal disease was especially high. The disease called "sprue," a chronic inflammation of the alimentary canal, also caused sore mouth.⁶⁸

Marshall was a keen observer of the soldiers' medical and dental conditions and began to focus on the poor hygienic conditions of the soldiers' mouths. Soon he came to connect soldiers with chronic diarrhea and dysentery with ulcerated conditions of their gums and mucous membranes. "These cases of intestinal disease often make exceedingly slow progress towards convalescence," he noted, "some of them remaining in the hospital month after month with little permanent improvement." He wrote:

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

In a conversation with Colonel A.C. Girard, who was at that time in command of the hospital, I suggested that there might be some important relationship existing between chronicity of the disease and unhygienic condition of the mouth, and that it was not improbable that in some of these cases the unclean condition of the oral cavity was a source of secondary infection. He therefore issued an order directing that all obstinate cases of these diseases be sent to me for examination and treatment of any abnormal oral conditions that might be present. In some of the most obstinate cases I found the mouth and teeth in very unclean condition, the gums inflamed and turgid, the oral mucous membrane inflamed, and in some of the worst cases the mucous follicles were enlarged, forming vesicles which later ruptured, leaving small ulcerated patches, which in the course of twenty-four hours were covered with a curdy white pellicle.^{68(p556)}

Marshall began treating these cases by spraying patients' mouths with a 25% solution of hydrozone, painting their gums with an iodine and aconite mixture, and touching the ulcerated patches with a 10% solution of silver nitrate. Within 10 days, the mouth symptoms were cured, "and almost immediately thereafter the general condition of the patient began to improve, and many after a few weeks more were discharged as convalescent." Marshall concluded: "This I think proves the fact that in those cases in which rapid improvement in the general condition of the patient followed the cleansing of the teeth and the treatment of the mouth, the chronicity of the disease was due to constant reinfection from the unhygienic condition of the oral cavity."^{68(pp556-557)}

Already a strong proponent of preventive dentistry and of the dental hygiene movement of the era, Marshall's medical background also led him to believe that many illnesses began in the mouth:

The menace to the general health through an unclean mouth and diseased teeth is by no means even approximately appreciated either by the medical and dental professions or the laity, as is evidenced by the fact that very few physicians take into account the influence of diseases of the mouth and teeth upon the general health when examining a patient for some obscure disease of the general system. . . . Many cases of what have appeared to be due to malarial influences or bad plumbing have been traced to an unclean or diseased condition of the teeth and mouth, while numerous cases of gastric and intestinal affections have been traced to the same source.^{68(pp559-560)}

After 2 years of treating soldiers, Marshall knew from first-hand experience that soldiers neglected the care of their teeth and mouths despite the repeated admonitions of Army surgeons and dental surgeons to keep their teeth and mouths clean, use toothbrushes, and rinse their mouths after meals. The general public was no less guilty than the American soldiers in their poor oral and dental hygiene habits. Marshall believed that the dental surgeon had to educate both the public and the soldier. He noted "if we do not teach this in season and out of season we are not performing our duty to our patients nor fulfilling our obligations to the state."^{68(p560)}

Marshall's approach to get his point across began in his office in the Presidio General Hospital, where he placed large cards that read "Clean teeth do not decay" and "Do not ask the dental surgeon to treat your teeth until after you have brushed them." These helped get the message to his patients, who showed marked improvement after some months and visits. "I have been greatly pleased with the good impression

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

that this information and suggestion has had upon men, for after the first or second visit there is a marked change in the appearance of their teeth," he noted. "These men also spread the information among their fellows, and I can already see a marked change in the care given to the teeth by the men of the whole garrison."⁶⁸(pp560-561)

Marshall's Proposed Circular and the Soldier's Handbook

On September 14, 1903, following close on the heels of his NDA paper at Asheville, Marshall wrote to Surgeon General O'Reilly about the need for a circular on the "Hygiene of the Teeth and Mouth" that should be issued "to the Army for its instruction in the care of the teeth and mouth and as a prophylactic measure against dental and oral disease." He told O'Reilly that he had originally prepared the circular at Surgeon General Forwood's request in July 1902, but apparently his draft was lost during the change of command to Robert O'Reilly. Marshall continued:

I have therefore deemed it my duty as the senior officer of the dental corps to call attention to the fact that much of the suffering experienced by our own troops through diseases of the teeth and the mouth could be prevented by the employment of such hygienic methods, as are recommended in this circular. . . . My experiences in military dental surgery during the past two and a half years has proved to me that there is a very general lack of information upon the part of the enlisted men of the army, of the means which they can employ to prevent dental caries and other diseases of the mouth. Good teeth are so important to the comfort and health of the individual, and consequently to the efficiency of an army, that the question of the preservation of these organs becomes an important one from the military standpoint.⁶⁹

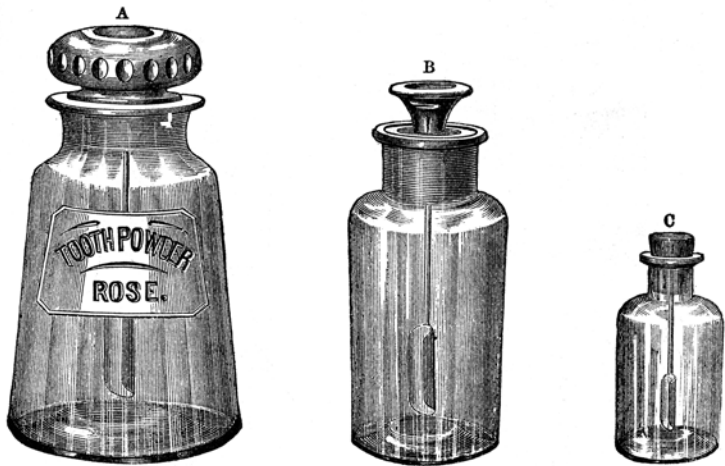
Like Voorhies's proposed circular of the previous year, Marshall's covered all the main points of good dental care and explained how dental caries and diseases of the teeth and mouth occurred and how to prevent them. He recommended proper methods of caring for the teeth and mouth, including brushing, use of tooth powders "to keep the teeth clean and bright," rinsing the mouth after meals, flossing, and antiseptic mouth "lotions." "It may be stated, therefore," he said, "as a general fact, that clean teeth do not decay."⁶⁹

Unlike Voorhies's 1902 proposal, Marshall's circular eventually produced some positive results, although no known circular from the surgeon general's office ever appeared. On January 18, 1904, Marshall sent a pamphlet on "Hygiene of the Teeth" to the surgeon general with a recommendation that it be included in the next edition of *The Soldier's Handbook* that every soldier in the Army was issued. On April 16, 1904, the adjutant general informed Marshall that the surgeon general had forwarded two paragraphs to be considered for inclusion in the next edition.⁷⁰ The proposed paragraphs encapsulated much of what Marshall desired for educating the soldiers:

A soldier should care for his teeth because their damage or loss will result in improper chewing of food and thus in various diseases of the digestive system. Decay, which is the commonest disease of the teeth, is caused by allowing particles of food to remain on and between them. These should be removed by thorough brushing. It is well to use a good tooth powder once or twice daily.

a

REDUCTION IN PRICES.
Glass Jars and Bottles for Tooth Powders,
WITH SPOON ATTACHMENT.



To save purchasers the inconvenience and annoyance of filling small boxes from the cans, we have adopted the above forms of jars and bottles with the spoon attachment, by which the desired quantity of powder can be taken out without spilling or wasting.

"A" is a ground stoppered jar, holding about two pounds of powder, with a neat glass label, "Tooth Powder—Rose," or "Tooth Powder—Wintergreen." These are very convenient for filling small boxes for *office sales*.

"B" is a ground stoppered bottle, holding one pound, and "C" one-quarter pound tooth powder. These are intended for *family use*.

The glass stoppers of "A" and "B" are made hollow, so as to contain the cork into which the spoon is fastened.

"C" has an ordinary cork, with spoon attached.

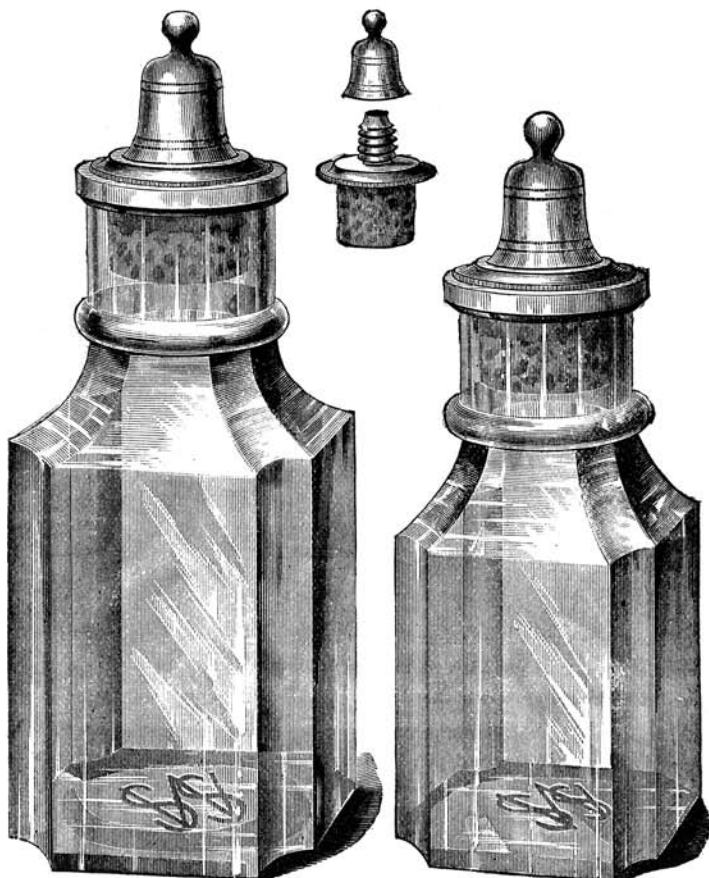
PRICES.

"A,"	Empty Jar.....	\$1.25
"B,"	One-Pound Bottle.....	35
"C,"	Quarter-Pound Bottle.....	20

(a) In the late 1800s, tooth powders were kept in jars like these ones advertised in an 1878 issue of Dental Cosmos.

b

REDUCTION IN PRICES.
TOOTH-POWDER BOTTLES.
CUTS ARE FULL SIZE.



No. 1, Large.

No. 2, Small.

These bottles are made of flint glass. The mouths being wide, permit their being easily filled, the tapering necks allowing the powder to flow readily, without choking up, as is the case with most patterns now in the market.

The tightly-fitting corks with screw tops are advantages which are fully explained by the cuts. The cut showing the construction of the cap is half actual size.

This convenient manner of keeping tooth powder meets with general favor, avoiding waste, and the bottle can be readily carried when traveling. The fragrance of the powder is retained, and several may use from the same bottle with propriety.

No. 1. (Large).....	per doz.	\$1.50.	Each 15 cents.
" 2. (Small).....	"	1.25.	" 12 "
" 1. Filled with our No. 1 Tooth Powder...	"	4.50.	" 40 "
" 2. " " " " " " " " " "	"	3.25.	" 30 "

NOTE.—These bottles can also be supplied, *on order*, with the same cap, adapted for mouth washes, at same rates as above.

(continued). **(b)** Notice the SS White logo on the bottom of each bottle. Courtesy of US Army Medical Department Museum. Borden 020, 021.

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

In order that decay of the teeth may be detected before serious damage has occurred, a contract dental surgeon should be consulted at frequent intervals. Toothache indicates that the deeper parts of the teeth have become diseased and a soldier should not, therefore, wait until the teeth ache to consult a dentist, as by that time destruction may be so great as to much increase the severity of the dental operations needed or even to make impossible any effective repair.⁷⁰

The next and subsequent editions of *The Soldier's Handbook* included these exact words in the section titled "Take Care of Your Health."⁷¹ After some initial struggles, Marshall was beginning to make some headway in his campaign to improve oral and dental hygiene in the Army.

O'Reilly's Agenda and Continuing Problems with Contract Status

Throughout his tenure as surgeon general, O'Reilly focused his energies most heavily on correcting problems in the Medical Department that the Dodge Commission had identified in its investigation of the military performance in the Spanish-American War. In addition, he was especially determined to undo the deficiencies in the numbers and grades of commissioned medical officers that the Army reorganization of February 2, 1901, had imposed, forcing the use of what O'Reilly called in his last annual report of 1908 "the objectionable device of employing civilian physicians under contract. . . ."⁷² O'Reilly tried annually to correct this problem, even submitting his own bill "to increase the efficiency and enlarge the Medical Department" in 1903 and 1904, but had little success in Congress until 1908.^{73,74}

On Christmas Eve 1903, O'Reilly, who had now been the Army surgeon general since September 1902, submitted his draft bill to Chief of Staff Lieutenant General Adna Chaffee, and wrote that "In my opinion certain grave defects exist in the present organization of the Medical Department, which interfere with its efficiency in time of peace and its successful expansion in time of war." In his attached detailed memorandum, O'Reilly enumerated the most serious defects as inadequate numbers of commissioned medical officers, the lack of sufficient pay and promotion opportunities to attract young physicians, and "no satisfactory means of expansion to meet war conditions and special needs in time of peace (epidemics, 'little wars', etc.)." Heretofore, the only means of expansion was the use of contract surgeons "to supplement insufficient commission personnel," but O'Reilly had finally reached the conclusion that this "has always been wasteful and unsatisfactory, and has now become absolutely impractical because of the recent decision that the contract surgeon not being an officer obedience to his orders cannot be enforced even in the case of enlisted men of the Hospital Corps."⁷⁵

The decision that prompted O'Reilly's action occurred in April 1903, when the Army judge advocate general ruled that contract surgeons had no authority to issue orders to any enlisted personnel, including those in the Hospital Corps. The same rule applied to contract dental surgeons. Early in 1903, the chief surgeon, Department of Luzon, had prepared a circular authorizing contract surgeons to assume command of posts or detachments when, "by the exigencies of the service," no commanding officer was present and the command reverted to a noncommissioned officer. Brigadier General George W Davis, the commander of the Philippine

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

Division, then requested that legislation be enacted to confer "military rank upon contract and dental surgeons." However, in April 1903, Judge Advocate General Brigadier General George B Davis, disagreed, arguing that contract surgeons were employed "to treat the sick" and contract dental surgeons were employed "to care for the teeth" of enlisted soldiers, and not to "exercise military command." Since the establishment of the Hospital Corps in 1887, the contract surgeon's position had become an "anomalous one." The Act of July 16, 1892 (27 Stat 175), had discontinued their employment, but the acts of May 12, 1898, and February 2, 1901, again authorized their appointment out of necessity. Davis recommended that Army legislation be directed towards replacing them by an increase in the size of the regular medical establishment, something that O'Reilly ardently but unsuccessfully sought.⁷⁶

O'Reilly's lengthy memorandum of December 24, 1903, reported that the Medical Department had 200 contract surgeons and 320 commissioned medical officers. He believed that the February 2 act had seriously harmed the Medical Department by limiting the number of medical officers and replacing them with contract surgeons—he now wanted commissioned officers to replace the contractors and the contract system eliminated. He estimated that 450 regular medical officers would be sufficient for the Army's peacetime needs. Since the Spanish-American War, there had been 1,604 contract medical surgeons appointed and 1,512 discharged, the average number in service at any given time was 347. Considering the cost of transporting these contract surgeons home, often across the Pacific, and the cost of sending new surgeons to replace them, it was an expensive proposition for the government. Also, other factors to be considered were their ignorance of military duties and administration, loss of property by inexperience, and errors in record keeping for pension cases. With all these negatives, "the contract surgeon will be found to be by no means an economical substitute for officers of higher ranks and pay and of experience."⁷⁶

While the contractors themselves faced a number of problems, O'Reilly believed that the system was dysfunctional and needed to be replaced:

The uncertainty of his tenure of office, the lack of dignity and authority inherent to his status as a civilian in a military organization, his ungracious title, and the uniform which he is now compelled to wear which has been carefully stripped of all insignia of official rank, all are productive of discontent and tend to drive out the able and energetic while they are accepted by the sluggish and unambitious. The tendency of the system is therefore to the survival of the unfit and incapable. Finally the recent decision of the War Department that contract doctors cannot command enlisted men even of the Hospital Corps . . . has made a longer retention of the system impracticable.⁷⁶

John Marshall was no less opposed to contract status for the dental surgeons than O'Reilly was to it for surgeons. To Marshall, the contract status was a temporary expedient that allowed an Army dental service of some sort to be established and that had to be replaced with a commissioned "Dental Corps" for dentists to receive professional and personal recognition. To O'Reilly, contract surgeons robbed the Medical Department of the uniformed physicians he needed to maintain the Army's health and would remain "the objectionable device of employing civilian

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

physicians under contract. . . .” In exchanges with O’Reilly in November 1903 to January 1904, Marshall advanced arguments about the long-run negative effects of contract status on the Army’s dental surgeons that differed very little from those that O’Reilly put forth in his memorandum for more commissioned medical officers.^{77–80}

Contract Status and the “DS” Uniform

In a paper on his initial 3 years in the Philippines (from October 1901 to October 1904) that he presented at the NDA annual meeting in July 1905, Robert Oliver attacked the entire contract status of the dental surgeons:

The present status of the contract dental surgeon is continually a source of humiliation and degradation to all, and to those more sensitive men who have occupied social positions at their homes equal to the best in their several communities it is of course keenly felt.^{4(p70)}

While Oliver despised contract status, he saved some of his most critical comments for another issue that possibly irritated the contract dental surgeons the most—their uniforms. Oliver pointed out that dentist’s uniforms themselves implied a separate, second-class status. On December 31, 1902, the adjutant general’s office prescribed a change in uniform, whereby no full-dress uniform was authorized for contract dental surgeons. Their dress, service, and white uniforms were to conform to those of medical officers, but without the shoulder straps of a first lieutenant that they had formerly worn. Collar ornaments for dress and white uniforms were to be silver block letters “DS” in place of the coat-of-arms of the United States, and the collar ornament on their service uniform was to be dull bronze letters “DS.”^{4,81}

On September 6, 1904, while still in the Philippines, Oliver had had enough of the “DS” uniform and wrote to the military secretary, outlining his complaints and requesting changes and a return to the previous uniform:

The wearing of an officer’s uniform, in contradistinction to the hybrid one now prescribed, would tend to elevate the official station, the social standing, and the self-respect of Dental Surgeons, more nearly commensurate with the dignity of their profession and their standing as gentlemen; and would stimulate them to exert their best efforts and highest attainments toward the betterment of the Army Dental Service; would give them justifiable pride in the new specialty of the Army Dental practice, and would, altogether create a spirit of contentment and satisfaction to the individual membership of the Corps, without which any organization has its limitations of efficiency.⁸²

Oliver’s request was forwarded to the War Department and on to the general staff, surgeon general, and quartermaster general for comment. The surgeon general’s office replied on October 26 that contract surgeons and dental surgeons:

. . . should either not be required to wear uniform or should be given one which would clearly indicate that they have the relative status of commissioned officers. This the present uniform does not do. The uniform formerly worn by these men was believed to be satisfactory. Of course, it is understood that the wearing of shoulder straps will not confer to Contract Dental Surgeons the authority to command.⁸³

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY



Early Dental Service uniform, circa 1902.

Photograph: Courtesy of US Army Medical Department Museum. Med7271-1.

A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II

Lieutenant Colonel James Kerr, acting chief of the general staff's 1st Division, made an exhaustive study of Oliver's complaint and responded with a five-page memorandum report on November 15, 1904. He concluded:

It is not believed that the wearing of shoulder straps by dental surgeons will cause enlisted men to show them more respect, or elevate their official status, social standing, etc. Enlisted men are required by orders and regulations to salute dental surgeons and to pay them proper respect, and their official status and social standing do not depend on whether or not they wear shoulder straps. . . . The uniform as now prescribed is considered by Dental Surgeon Oliver to be a hybrid one, but it is not considered that it will be any less hybrid by adding to it a hybrid shoulder strap such as he desires. The objectives to the present uniform of dental surgeons are not deemed well founded. It is, therefore, recommended that no change be made in it.⁸⁴

On November 22 Chief of Staff Chaffee approved no change. Three days later, the military secretary's office informed the commanding general, Philippines Division, that "no change be made in the present uniform of Contract Dental Surgeons."⁸⁵

By the time that the War Department response reached the Philippines, Oliver was already in the United States and on his way to his next assignment at West Point. In a paper presented at the July 1905 NDA meeting (and included in the NDA's *Transactions* in 1906), he continued his attack. When in the blue uniform, he noted, the uninformed might presume the dental surgeons were liveried servants. While wearing the other two uniforms, the dentist looked like an enlisted hospital corpsman and sometimes was ordered about as one until his status was clarified. Finally, Oliver pointed out that because dentists were not authorized dress uniforms, they were excluded automatically from all formal events and formations. Oliver believed that such treatment in the short run adversely affected their management and discipline, and in the long run would affect recruiting and retention of dentists of high quality.⁴ He wrote:

It seems a great injustice to educated professional men who have spent years in acquiring a technical and scientific knowledge of their specialty and who have qualified before a competent examining board before entering the service, to be so meanly uniformed as to be indistinguishable from ordinary soldiers. . . . You may all say that there is no disgrace in the wearing of civilian clothing as above stated, which is quite true; but at any army post where one is supposed to be an officer, or at least a quasi-officer, and is strenuously struggling to maintain even that status, I must say that to appear different from all the rest places a dental surgeon in a more or less humiliating position and indicates to him that he is one of the army only through sufferance.^{4(pp70-71)}

In 1903, after 2 years of service, Dr Hugh Voorhies reported that the "DS" insignia signified "Don't Shoot," which may have reflected the attitude of some of the line officers and enlisted soldiers toward the new dental surgeons and their role in the Army.⁴³ While an unimportant minor detail to the War Department and many line officers, the dental surgeons saw the matter of "DS" uniforms as a major irritant that lessened their authority and hard-won social standing as professionals.

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

Dr Hussey: Itinerant Dentist in the Department of Dakota

After returning from the Philippines in April 1903, Dr Samuel Hussey was assigned to duty with John Marshall at the Department of California before departing for the Department of Dakota on August 1, 1903. His 1903–1904 report indicated the type of dentistry performed by a contract dental surgeon working as an itinerant dentist in a geographical department. He recalled:

The dental service rendered in the Department of Dakota, from August 12th, 1903, to June 30th, 1904, has been almost entirely of an emergency character.

My first tour of duty from August 12th to September 18th, 1903, I visited all the posts in the Department [10 posts in Minnesota, North and South Dakota, Wyoming, and Montana] for the purpose of examining the teeth of all the officers and enlisted men and perform[ed] operations only that required immediate attention, and upon arrival at Ft. Snelling, I reported to the Department Commander the probable length of time required to complete the necessary dental work at each post.

After remaining on duty at Ft. Snelling, Minn., from September 18th to November 30th, 1903, I was sent out on the second tour of duty to visit all the posts in the Department and perform all the necessary dental work.

On this tour my services were very largely extractions, restorations by permanent fillings of gold, amalgam and oxy-phosphate, removing of salivary deposits, and treatment of abscesses and other ordinary diseased condition of the teeth and gums.

The hours for Sundays and holidays have been found necessary for the relief of the suffering in new cases and redressing of cases already under treatment.

The office hours have been the greater part of the time from 8:30 A.M. to 5:00 P.M., except during the short days of the winter, when the light was not quite sufficient.

Total number of patients treated, 815, as follows: Officers, regular, 55; Enlisted men, 674; Retired soldiers, 1; General prisoners, 3; Civilian attaches, male, 16; Civilian attaches, female, 66. Total number of sittings, 2,200; Total number of sittings per each working day, 9; Average number of sittings per patient, 3; Average length of time required for completing treatment of each patient, one hour and twenty minutes.

The force of dental surgeons in the Department of Dakota, is still inadequate to meet the demands of all classes of operations, e.g., it has been impossible for the present dental surgeon to perform restorations by artificial dentures, except while stationed at Ft. Snelling, Minn., because it is impracticable to carry an extensive laboratory equipment on tours of duty while visiting posts from two weeks to two months and the greater demand requires treatment and filling of such a nature as has been mentioned above, therefore the laboratory outfit has been lying idle at Fort Snelling, Minn., for several months.^{86(pp578–580)}

The majority of dentists generally seemed satisfied while performing under demanding conditions, even as their status continued to be argued in the War and Medical departments and in Congress.

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

Dentists in the Field

Army dentists worked hard in the field but were often frustrated in their attempts to instill new habits of dental hygiene among their patients. In November 1903 *Dental Cosmos* quoted the *Army and Navy Journal* on one significant problem:

The dental surgeons are experiencing considerable difficulty in getting enlisted men in the army to properly attend to their teeth. A proposition is now under consideration by the medical department of the army to have the dental surgeons give lectures to the enlisted men under their charge on the urgent necessity for the care and preservation of the teeth.⁸⁷

At the Fourth International Dental Congress in Saint Louis, Marshall commented on many aspects of dental practice in the Army. Even though the government only provided tin and plastics for filling materials, he noted that dentists could use gold at the patient's expense. In fact, in some cases the Army furnished the necessary instruments for gold work. Then, too, the dental surgeon was furnished with an enlisted Hospital Corps assistant to help him with the work. Marshall pointed out that the dentist's first mission was to alleviate suffering and to stop further decay. Consequently, much of his work must be a stopgap until the patient could get permanent treatment at a general hospital. Within these constraints, Marshall believed the dentists were performing well. Those located at the hospitals had all the facilities necessary to perform any kind of work required. At major posts dentists could expand their skills through the treatment of families, gaining experience in pediatrics and orthodontics, as well as in jaw work. In fact, in the absence of a surgeon, dentists were authorized to perform any medical procedure for which they were competent. Marshall thought that expanding experience would mandate changes that he was sure would occur in due course.⁸⁸

Despite such positive views in 1904, contract dental surgeon Ord Sorber (1867–1922), who served at Fort Sam Houston, Texas (1901–1904) and then the Philippines (1904–1907) before resigning to pursue private practice, commented in *Dental Brief* on his inability to take advantage of the provisions for deriving additional income from the patients who were not entitled to "free service":

As authorized by law and specified by regulations only officers and enlisted men are entitled to free service, but persons not entitled to free service may be operated upon before nine o'clock A.M. or after four P.M.; provided the dentist's services are not required by those entitled to them. This is to enable us to add to our income if we so desire, but it has not been of any use to me, because the amount of work required by those entitled to free service has been far greater than I could possibly perform, only about one-third of the work required having been performed, though it was by no means confined to prescribed hours. It soon became apparent that if the regulations were to be obeyed all thought of outside work must be given up.^{89(p252)}

He emphasized the problem with the backlog of work:

The amount of dental work in demand is enormous. If I may judge of the state of affairs in the rest of the army by the conditions found in that part of it stationed in the Department of Texas, it will require at least three times the present number of dentists

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

to properly care for even the urgent cases. The number of men newly enlisted each year would alone be sufficient to keep us all busy.^{89(p254)}

Sorber cited the advantages of a military dental practice, such as relatively few bills to collect from patients and few problem patients. But then he listed as the disadvantages: the uncertainty of a contract renewal, no possibility of increasing one's income, inadequate dental facilities at the majority of posts, constant change of station, lack of opportunity to perform the finer types of dentistry, cost of uniforms and living expenses in remote places, necessity for using equipment not suited to one's preference, and the constant pressure from persons not entitled to "free service" to induce violations of the regulations governing dental treatment.⁸⁹

His conclusion was not favorable to a military dental career:

The Inspector-General's Department has taken testimony regarding the desirability of making the service permanent, and in course of time it may be made a commissioned service, but to the writer this appears to be a very remote possibility, in view of the proverbial slowness with which such matters move. But should it come to pass, the service will still fall far short of being a desirable birth [*sic*] for a capable man.

In conclusion, I would suggest that, in view of the attainments necessary to pass the examination, any one who can successfully take it is well able to command a much larger income in private practice in any of the larger towns or cities.^{89(pp254-255)}

On the other hand, contract dental surgeon Charles Long, who had served in the Philippines since 1901, expressed his satisfaction with the service when writing to Brigadier General William Dougherty, formerly in the Philippines but now assigned to Fort Jay, New York:

I have been in the Islands now, two years and nine months, and although Staff Officers are supposed to complete their tour here in three years, I doubt whether or not we will be relieved on time, as there are not enough men in our Department in the States to relieve us all out here; however, I am in good health and stationed here in Manila I enjoy myself very much, so I am not particularly anxious to go home.⁹⁰

Dentists in the Philippines: 1902-1904

The changed operational situation in the Philippines and the end of most active military operations also altered the dentist's work pattern as the number of troops decreased and numerous smaller posts were consolidated. The postinsurrection reorganization of the Philippines into Luzon, Visayas, and Mindanao resulted in fewer posts and soldiers. After the peace declaration on July 4, 1902, the number of Army posts was decreased from about 140 to less than 50 by October 1904. In 1903 dental surgeons were assigned to only the larger stations and patients came to them from the surrounding small posts according to a previously arranged appointment schedule determined by the dental surgeon and the commanding officer.^{4(p47)}

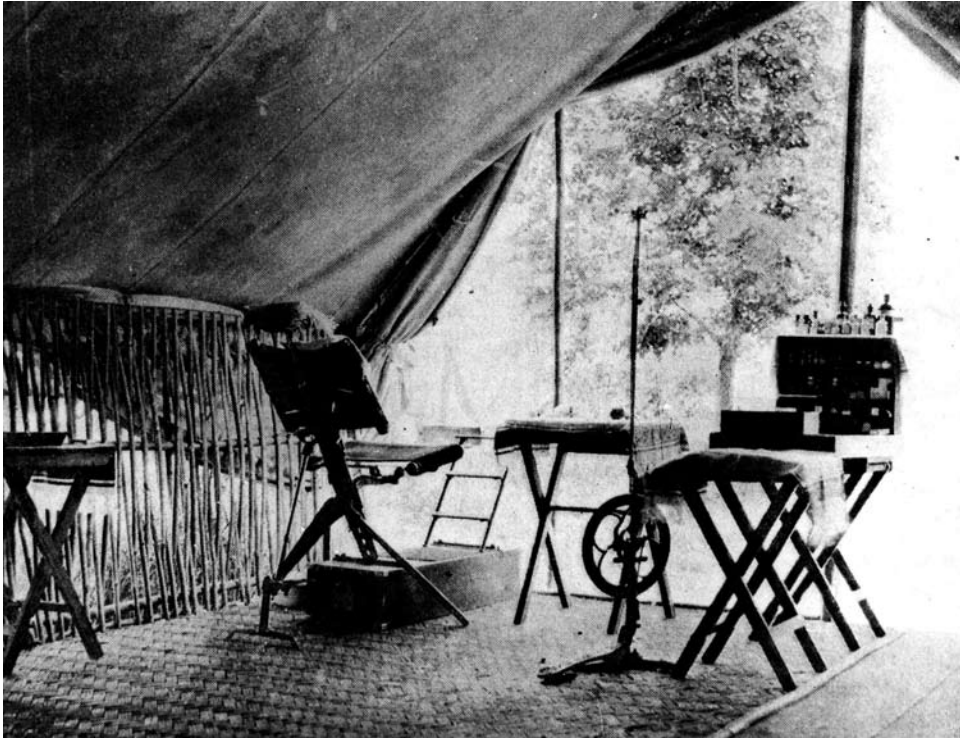
By June 1902 McAlister, Craig, Wolven, Rietz, Ware, Wing, Carpenter, and Foster were assigned to Luzon; Mason, Bernheim, Lauderdale, Whinney, and Millikin

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II



*Charles J Long, contact dental surgeon who had served in the Philippines.
Photograph: Courtesy of National Archives and Records Administration.*

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY



*Portable dental outfit set up in dental office at Camp Stotsenberg, Luzon, June 1903.
Reproduced from: Dental Cosmos. 1906;48:217.*

were assigned to Visayas (which included Dental Base Station No. 2); Boak, Hussey, Stone, and Casaday were assigned to Mindanao (which included Dental Base Station No. 3); Waddell and Long were at Dental Base Station No. 1 in Manila; and Robert Oliver was assigned to the chief surgeon's office.¹⁰

Base stations were one of Oliver's innovations where prosthetic cases could be treated, because it was impossible for itinerant dental surgeons to carry the laboratory equipment needed to perform this type of dentistry. The first station, Dental Base Station No. 1, was opened at the First Reserve Hospital in Manila in early March 1902. All of the prosthetic cases from the Department of North Philippines were sent there for treatment. Dental Base Station No. 2 was established for the Department of South Philippines at its headquarters in Cebu. In October 1902, with the reorganization of the Philippine Division into the three departments of Luzon, the Visayas, and Mindanao, the base station at Cebu was transferred to Iloilo, the headquarters of the new Department of the Visayas. A new station, Dental Base Station No. 3, was opened at Zamboango for the Department of Mindanao. All oral surgery cases were referred to Oliver in Manila.¹⁰

In Oliver's system, the base stations were home stations where dentists spent anywhere from 2 to 10 months a year. The rest of the year they rotated among smaller stations where soldiers from outlying posts could meet them for examination

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

and treatment.¹⁰ John Millikin's schedule for 1903 illustrates how the system worked and how time-consuming the constant moving, shipping, setting up, breaking down, and packing up must have been (Table 7-5). Millikin's home station was Catbalogan, Samar, and Hospital Corps Private Patrick Curley served as Millikin's person in charge of property and "as a guard for same during this time."⁹¹

All of the changes in stationing and reduction in troops in 1902 and 1903 also meant that fewer dental surgeons were required. Strength dropped steadily from a high of 20 in June 1902, to 18 in June 1903, and then 17 in 1904, before Oliver's return to the United States in October. However, the surgeon general's office fixed an official authorized level of 14 dental surgeons in April 1904. Oliver complained in his final report that this number was insufficient to provide dental care, given the time the dental surgeons lost in moving from post to post. He insisted that at least 17 surgeons were still required.⁵ He went on to say:

This unfortunate condition of affairs is much to be regretted, as it is considered only fair that every soldier should have an equal opportunity of having his teeth filled and saved, especially when he is detailed for duty at remote stations in this division where it is absolutely impossible for him to obtain dental treatment from civilian dentists, even at his own expense.^{5(p3)}

As the dentists settled into their work, the need for each of them to have two enlisted assistants became increasingly evident. In his 1903 report to the surgeon general, Oliver envisioned one soldier "working as an operating assistant at the chair" and also responsible for the care, sterilization and preservation of the instruments and materials. The other assistant should be trained in maintaining dental records and reports, as well as in supply procedures. He estimated that the extra time given the dentist as a result of this help would at least double the number of patients who could be cared for. The dental assistant was at the dental surgeon's disposal "at all times" and accompanied him on his circuit, although carried on the hospital's muster rolls.^{5,92}

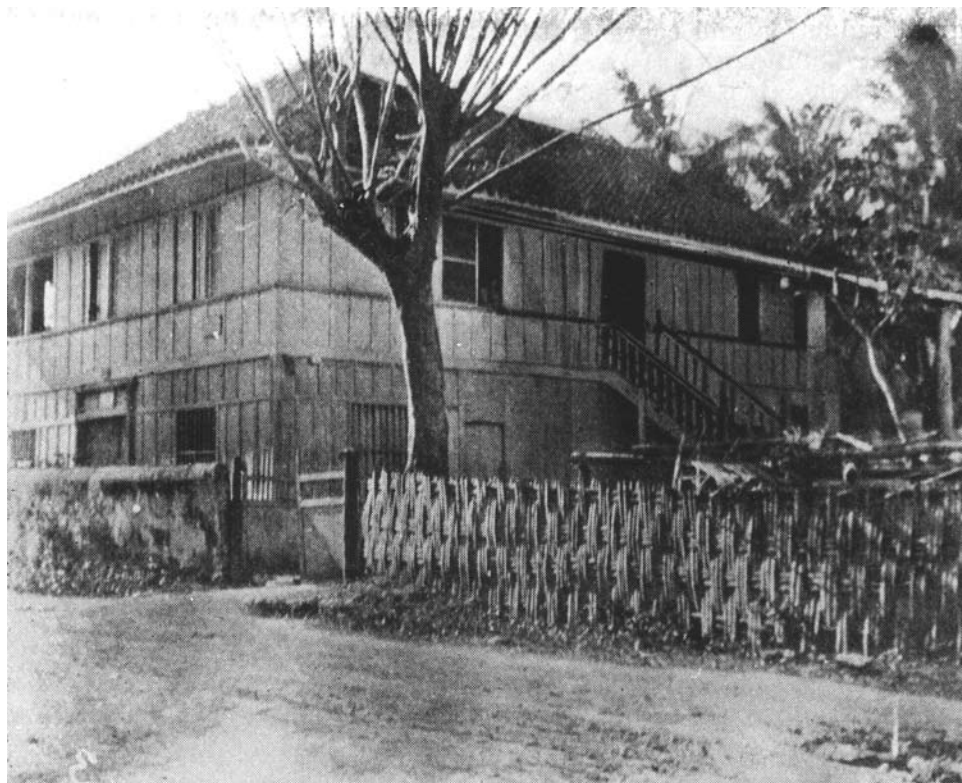
The turnover in dental surgeons was heavy in 1903 with Hussey, Craig, Carpenter, and Foster all returning to the United States for reassignment and Stone being evacuated with illness, and no new arrivals to replace them. The situation in 1904 was even worse because the 3-year contracts expired and Ware, Waddell, Rietz, Boak, Lauderdale, Wing, Whinnery, Wolven, Mason, Long, and Oliver were all scheduled to depart. To offset some of the departures, four new dental surgeons arrived in the Philippines for duty in 1904: Rex Rhoades, WG Hammond (contract annulled January 1911), GE Stallman, and GI Gunckel.⁵



Dentist RW Waddell, who served in the Philippines, pictured here in 1918.

*Reproduced from: JASMUS.
1919;3:14.*

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

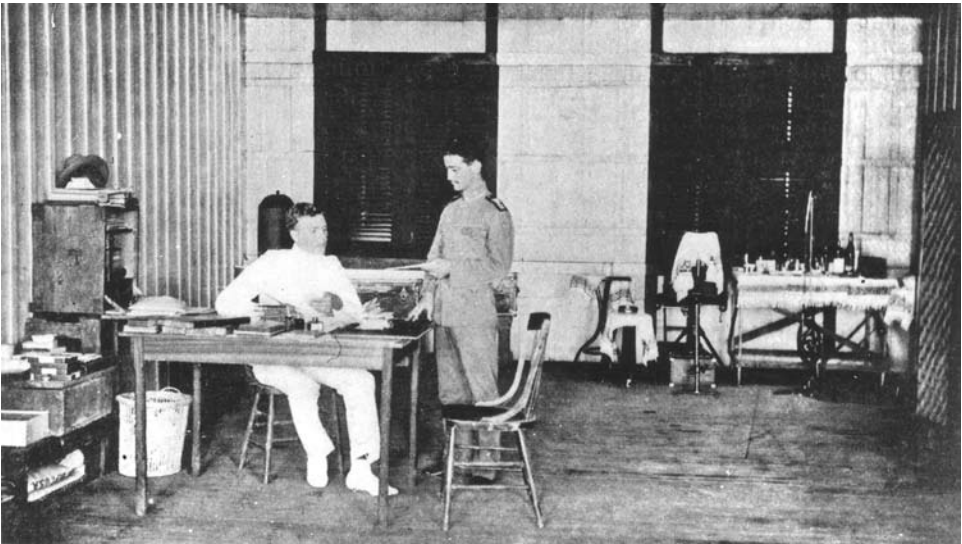


*Exterior view of the office at Cebu, Philippine Islands, May 1902.
Reproduced from: Dental Cosmos. 1906:48;213.*



*Exterior view of the office at Zamboanga, Mindanao, Philippine Islands, May 1902.
Reproduced from: Dental Cosmos. 1906:48;215.*

A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II



*Interior view of the office at Zamboanga, Mindanao, May 1902.
Reproduced from: Dental Cosmos. 1906:48;213.*

TABLE 7-5
JOHN D MILLIKIN ITINERANT SCHEDULE, 1903

Location	Duration
Catbalogan, Samar (substation: Gandara River)	2 months
Calbayog, Samar	3 months
Laguan, Samar (substation: Catubig)	2 months
Borongan, Samar	2 weeks
Guinan, Samar	2 weeks
Basey, Samar	1 month
Santa Rita, Samar	1 month
Binatic, Samar	2 weeks
Daram, Daram Island	2 weeks

Data source: National Archives and Records Administration. Record Group 94. Order No. 44, W.S. Scott, captain, acting assistant adjutant general, Division of Philippines, to John D. Millikin, 5 January 1903. Letter. No 472628. Box 3319. Entry 25.

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

To make personnel matters even worse, after stalling for nearly a year, in February 1904 Oliver was ordered to Peking, China, for temporary duty with the US Legation Guard. Upon his arrival on April 21, he was informed that all the officers and enlisted soldiers of Company B, 9th Infantry, required dental treatment. There had not been a dental surgeon assigned previously, and the two local civilian Chinese and Japanese dentists lacked professional ability. Examination of the command showed that over 96% of the 142-person garrison was in need of immediate dental treatment. Several had been temporarily relieved from duty and placed on sick leave because of dental and oral disease, which could not be treated by the hospital medical staff. Oliver did not return to the Philippines until August 1, 1904.^{5,93,94}

While in the Philippines, Oliver compiled and submitted two extensive reports covering the work of the dental surgeons for fiscal year 1902 (July 1, 1902, to June 30, 1903) and for the entire period from April 1901 to October 1904. He later revised these reports to prepare a major presentation for the NDA’s annual meeting in late July 1905, and they were subsequently published in *Transactions of the National Dental Association* as “Three Years’ Service in the Philippines” (Table 7-6). In them, he reported on the work accomplished by the dental surgeons in the Philippines, who were “an honor to our noble profession, as they certainly create the world’s record of dental service, for never before has there been an equal number of dental surgeons banded together in one organization working toward a common end.”^{4,5,10}

Oliver’s pointed comments on the oral and dental condition of the soldiers in the Philippines revealed an abysmal situation:

Judging from the kind of cases first presented it could be easily seen that the vast majority of soldiers had never known what dental attention was, as the neglected condition of their mouths and teeth indicated beyond all doubt that the individual paid very little or no attention to the welfare of these important organs. When we consider that there were probably sixty thousand troops in the Philippines at the time, a majority of whom had been on duty in the tropics about two years with no possibility at hand of obtaining dental treatment from civilians or otherwise, and with the manifold effects of the tropics, character of food, and continuous active service against a wary foe, which prevented even the ordinary care to their personal toilet, it can be imagined what condition the mouths of these men presented.^{4(p60)}

TABLE 7-6
SELECTED DENTAL SERVICES IN THE PHILIPPINES, MAY 1, 1901 TO SEPTEMBER 30, 1904

Total Cases	Cases of				
	Dental Caries	Operations	Fillings (all types)	Extractions	Patients
75,587	55,567	82,562	41,061	12,844	30,262

Data sources: (1) Oliver RT. Three years’ service in the Philippines. In: *Transactions of the National Dental Association*. Philadelphia, Pa: The SS White Dental Mfg Co; 1906. (2) National Archives and Records Administration. Record Group 112. Robert T. Oliver to surgeon general, USA (through channels), [April 1901–October 1904], 15 October 1904. Report. No 89178. Box 616. Entry 26.

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

Severe campaigning conditions contributed to poor oral and dental health, allowing soldiers little time for personal hygiene. Few appeared to make any serious efforts to clean their teeth even when out of the field and in permanent installations. Serious dental problems affected 80% to 90% of the soldiers.⁴ Oliver commented:

This neglect, often accompanied by the direct local effects and indirect systematic effects of poorly cooked food upon the oral tissues, together with a general loss of tone due to fatigue and the rigorous tropical climate, were prominent etiologic factors in the foregoing pathological conditions mentioned.⁴

Oliver disagreed with previous observations about the effect of tropical climates upon teeth and gums. He believed that "the tropical effects were only incidental and can be traced to a general loss of tone in the individual and the consequent lessening of nutritive activity."⁴

Located as they were thousands of miles from San Francisco and New York meant that supplies of dental equipment and materials were often inadequate or entirely lacking. In his 1904 report, Oliver noted that this situation largely arose from the delay in receiving supplies following approval of annual requisitions: "The last annual requisition was forwarded February 25, 1904, and supplies did not begin to arrive until June, 1904, and then only in small part, with additions coming September 10, and a large part yet to arrive."

Oliver wanted semiannual requisitions to prevent shortages. In addition, he wanted the medical supply officer in New York to notify Manila when requisitioned items could not be issued. Oliver would then have the opportunity to purchase the items locally, "instead of having to wait several months to see if said articles would arrive in the next consignment of goods."⁵

In his report on 1902 and 1903, Oliver commented extensively on the need to reorganize what he called the "Dental Corps, U.S.A":

. . . giving it an official status in the permanent establishment. . . . The new organization should contemplate the establishment of four grades (one file only for the highest), with the rank, privileges, emoluments, etc., equal to that of the corresponding grades of the Medical Department.¹⁰

He went on:

This reorganization would be of untold benefit to the Corps in the future, as it would be a means of attracting the very best professional talent from the better class of young practitioners, would assure the future for the Corps members by giving them rank and pay commensurate with the dignity of their profession, their status as professional men and more nearly in proportion to the value of their services as specialists. It would also be a stimulus for them to render their best services to the Government and would greatly assist in maintaining a high degree of efficiency and "Esprit de Corps," without which any branch of the service deteriorates. At the present time the Corps enjoys the distinction of having a first class reputation and a high degree of professional talent. This on account of the established high standard for qualification demanded by the Examining Board and upon the high class of professional men who were admitted to the Corps, all of whom joined with the expectation of finally becom-

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

ing a part of the permanent establishment of the Army, thereby obtaining an assured and honorable position during active life, with ample provisions for the future. A majority of these men now on duty in the Division of the Philippines are beginning to manifest a spirit of unrest and discontent at the present status, and it is extremely doubtful if many of the better class remain long in the Corps with a contact status which, if allowed to remain in force, will result in getting only such a class of men as will be attracted to and satisfied with a status of inferiority and degradation. . . .¹⁰

Oliver largely repeated these comments, with some slight changes, in his overall report for the period 1901 to 1904.

On October 25, 1904, Colonel Joseph Girard, chief surgeon of the Philippines Division, agreed with Oliver's recommendation that 17 dental surgeons be assigned to the Philippines, as well as with his assessment of the growing importance of dental care in the Army:

In this connection the undersigned respectfully invites attention to the fact that since the addition of Dentists to the Medical Department of the Army, their services have been demanded by an enormous, ever-growing proportion, reaching, perhaps 90 per cent, of the rank and file. That is the case not only in the Philippines, where the climate is supposed, whether correctly or not, to induce dental caries, but in the home garrisons just as well. As the majority of the men is made up of young soldiers in their first enlistments, the conclusion is unavoidable that the diseased condition of their teeth cannot, in most cases, be due to the exposure or hardships connected with the military service, but must have existed at the time of their enlistment. The calls for Dentists from the various Army posts, both in the United States and the Philippines, are now so frequent and urgent, that, if it is contemplated to properly repair every recruit's jaws and keep them thereafter in good working condition, the number of Army Dentists must be greatly increased, more than doubled, certainly, for it is patently insufficient at present.⁹⁵

When he came to Oliver's views on dental reorganization, Girard's opinions stiffened significantly and probably reflected the sentiments of most of his physician colleagues in the Medical Department:

With regard to the recommendation for a reorganization of the so styled "Dental Corps, U.S.A." (See page 7), the undersigned desires to enter his emphatic disapproval of any such expression, and of all measures or efforts tending to give Army Dentists a separate standing in the Army by establishment of an independent hierarchy of grades, whether outside of the Medical Department or within and in connection with that Department itself, in the latter case, a sort of "imperium in imperio" subversive of military discipline by the division of authority, and wholly contrary to the interests of the service. The care of soldiers' teeth, considered by itself, is undoubtedly a serious matter, and should be sedulously provided for, but, when looked at from the broad point of view of the Sanitary Service of the Army, it assumes much more modest proportions, and becomes simply an incident and a subordinate subject among a multitude of far more important questions; the tendency, evident in this report, to unduly magnify the import of Dentistry in the Army by the establishment of a special, and prospectively independent hierarchy of grades, the erection of Dental Hospitals, etc., etc., can be characterized only as extremely mischievous, totally unnecessary, and wasteful of public funds. The Medical Department of the Army should be one and

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

indivisible, constituting but one Corps under a single head and with but one line of grades, all, including dental and other assistants, subordinate to one another according to rank and deriving their faculties from the same fountain head of authority.⁹⁵

Despite this view, Girard fully understood the problems of professional status and standing that the contract dental surgeons faced and clearly believed that this situation required action to correct:

While expressing himself thus strongly on this special subject, the undersigned is quite disposed to advocate granting military commissions to Dental Surgeons; he is of the opinion that the system of employing professional men in the Army, on a quasi military footing as Contract Surgeons and Contract Dental Surgeons is radically wrong, as long as those men are expected to associate on equal terms with military officers. Their present position is ambiguous, humiliating and unsatisfactory in every way. Either let them be and remain civilians pure and simple, and stand on their own merit, or confer upon them military commissions which, by placing them on a level with their associates, will safeguard their self-respect and secure to them the regard which they are legally entitled to from officers and enlisted men.⁹⁵

There is no record of how Oliver's report or Girard's endorsement were received at the surgeon general's office in late 1904.

A Foundation for Army Dentistry

These early years of Army dentistry were filled with significant accomplishments and profound disappointments for contract dental surgeons. With John Marshall and Robert Oliver leading the way, a few dentists achieved much in the Army. The work of the dental surgeons in the United States and especially in the Philippines had revealed the wretched state of the Army's oral and dental health beyond any doubt. In their work, dentists were contributing to the overall readiness of the Army by reducing the number of soldiers who were absent from their units or lost altogether to the Army due to oral or dental diseases.

Despite the legislative setbacks, much was accomplished during these early years of Army dentistry, proving the contentions of those who had argued for so long that the Army and American soldiers deserved the excellent dental care that American dentistry could provide and would be better for it. Firm foundations for future development were established, even if they appeared to be somewhat shaky to many at the time.

References

1. National Archives and Records Administration. Record Group 112. Colonel Charles R Greenleaf, chief surgeon, Division of the Philippines, to the surgeon general. Letter. No. 80254. Box 539. Entry 26.
2. National Archives and Records Administration. Record Group 112. Sternberg, surgeon general, to adjutant general, February 11, 1901. Letter. No. 78774. Box 519. Entry 26.
3. National Archives and Records Administration. Record Group 94. Personnel folders for Emmett J Craig and Samuel W Hussey. Entry 91.
4. Oliver RT. Three years' service in the Philippines. In: *Transactions of the National Dental Association*. Philadelphia, Pa: The SS White Dental Mfg Co; 1906.
5. National Archives and Records Administration. Record Group 112. Robert T Oliver to surgeon general, USA (through channels) [April 1901–October 1904], October 15, 1904. Report. No. 89178. Box 616. Entry 26.
6. Boak SD. Army dental surgeon and his work in the Philippines. *Dental Register*. 1903;57:301–308.
7. National Archives and Records Administration. Record Group 112. Index, First Lieutenant George A Skinner, hospital commander, to letter of Charles A Petre to chief surgeon, Division of the Philippines, April 23, 1901. No. 75469. Box 357. Entry 101.
8. National Archives and Records Administration. Record Group 112. Major General Adna R Chaffee to Adjutant General, February 14, 1902. Cablegram. No. 75469. Box 496. Entry 26.
9. Oliver RT. The rational consideration of oral prophylaxis. *Dental Cosmos*. 1921;63:1118.
10. National Archives and Records Administration. Record Group 112. Robert T Oliver to surgeon general [July 1, 1902–June 30, 1903], June 30, 1903, 1. Report. No. 89178. Box 616. Entry 26.
11. Boak SD. Dental Army service in the Philippines. *Dental Register*. 1907;61:289–292.
12. Stone FP. Personal experiences in the Army Dental Corps. *Wash Univ Dent J*. 1937;3:121–125.
13. National Archives and Records Administration. Record Group 112. Lieutenant Colonel Girard to surgeon general's office, September 2, 1901. Telegram. No. 70760. Box 449. Entry 26.
14. National Archives and Records Administration. Record Group 112. Surgeon general's office to Girard, September 3, 1901. Letter. No. 70760. Box 449. Entry 26.

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

15. National Archives and Records Administration. Record Group 112. Marshall to Colonel William H Forwood, September 6, 1901. Letter. No. 70760.
16. National Archives and Records Administration. Record Group 112. Forwood to Marshall, September 12, 1901. Letter. No. 70760.
17. National Archives and Records Administration. Record Group 112. Sternberg to Marshall, October 11, 1901. Telegram. No. 70760.
18. National Archives and Records Administration. Record Group 112. Marshall to Sternberg, October 12, 1901. Telegram. No. 70760.
19. National Archives and Records Administration. Record Group 112. Marshall to the surgeon general, June 1, 1903. Letter. No 70760.
20. National Archives and Records Administration. Record Group 112. John S Marshall to the surgeon general, June 1, 1903. Personal service report [September 1, 1901–June 30, 1902]. Letter. No. 70760. Box 449. Entry 26.
21. National Archives and Records Administration. Record Group 94. War Department Special order no. 168, July 22, 1905. No. 391988. Box 2730. Entry 25.
22. Biographical files of Brigadier Generals AC Girard and George Torney. Biographical Files, Research Collection, Office of Medical History, OTSG/MEDCOM, Falls Church, Va.
23. National Archives and Records Administration. Record Group 112. O'Reilly to Marshall, Oliver, and Hess, March 9, 1905. Orders no. 79325. Box 527. Entry 26.
24. National Archives and Records Administration. Record Group 112. Correspondence with Marshall and Hess pertaining to dental examinations in 1902 and 1904. No. 79325. Box 527. Entry 26.
25. National Archives and Records Administration. Record Group 112. Frank E McDermott. Case files. No. 82082. Box 352. Entry 101.
26. National Archives and Records Administration. Record Group 112. General correspondence. No. 82082. Box 557. Entry 26.
27. National Archives and Records Administration. Record Group 94. Document file. No. 424245. Box 2961. Entry 25.
28. National Archives and Records Administration. Record Group 112. John S Marshall to surgeon general, July 5, 1903. Personal service report [July 1, 1902–June 30, 1903]. Letter. No. 70760.
29. National Archives and Records Administration. Record Group 112. John S Marshall to surgeon general, July 25, 1904. Personal service report [July 1, 1903–June 30, 1904]. Letter. No. 70760.

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

30. Dental Corps Biographical Files. Research collection. Office of Medical History, OTSG/MEDCOM, Falls Church, Va.
31. National Archives and Records Administration. Record Group 112. FA Baldwin to adjutant general (through channels), May 8, 1901. Letter with index. No. 78773. Box 519. Entry 26.
32. National Archives and Records Administration. Record Group 112. Havard May 9, 1901. Letter. No. 78773. Box 519. Entry 26.
33. National Archives and Records Administration. Record Group 112. Wood May 10, 1901. Letter. No. 78773. Box 519. Entry 26.
34. National Archives and Records Administration. Record Group 112. Ward to Wood August 22, 1901. Telegram. No. 78773. Box 519. Entry 26.
35. National Archives and Records Administration. Record Group 15. Major Valery Havard, chief surgeon, Department of Cuba, Havana, October 31, 1901, pension file. Letter. Certificate No. 584073.
36. V[ail] WD. Organization of the Dental Corps. *Dental Bulletin Supplement to the Army Medical Bulletin*. 1933;4:172.
37. National Archives and Records Administration. Record Group 112. Sternberg, surgeon general, to Marshall, November 29, 1901. Letter. No. 70760. Box 449. Entry 26.
38. National Archives and Records Administration. Record Group 112. Marshall to Sternberg, December 6, 1901. Letter. No. 70760. Box 449. Entry 26.
39. National Archives and Records Administration. Record Group 112. Sternberg to Marshall, January 4, 1902. Letter. No 70760. Box 449. Entry 26.
40. National Archives and Records Administration. Record Group 112. Marshall to surgeon general, January 12, 1901. Letter. No. 70760. Box 449. Entry 26.
41. Personnel files on Alexander P Bacon. Research Collections. Office of Medical History, OTSG/MEDCOM, Falls Church, Va.
42. Voorhies HG. Dentistry in the service. *The Dental Forum*. 1903;1:176–179.
43. Voorhies HG. Dentistry as practiced in the U.S. Army. *Dental Brief*. 1910;15:619.
44. National Archives and Records Administration. Record Group 112. HG Voorhies to chief surgeon, Department of the East, May 29, 1902. Letter with enclosure; The care of the teeth. No. 70417. Box 97. Entry 25.
45. National Archives and Records Administration. Record Group 112. Second endorsement, WH Forwood, surgeon general, to Marshall, June 12, 1902, to letter, Voorhies to chief surgeon, Department of the East, May 29, 1902. Letter. No. 70417.

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

46. National Archives and Records Administration. Record Group 112. Third endorsement, Marshall to surgeon general, June 23, 1920, to letter, Voorhies to chief surgeon, Department of the East, May 29, 1902. No. 70417.
47. National Archives and Records Administration. Record Group 112. Fourth endorsement, Forwood to Marshall, July 1, 1902, to letter, Voorhies to chief surgeon, Department of the East, May 29, 1902. Letter. No. 70417.
48. National Archives and Records Administration. Record Group 112. Fifth endorsement, Marshall to surgeon general, July 16, 1902, to letter, Voorhies to chief surgeon, Department of the East, May 29, 1902. Letter. No. 70417.
49. National Archives and Records Administration. Record Group 112. June 30, 1902, and first endorsement, O'Reilly through chief surgeon, Department of the East, to Voorhies, September 12, 1902. Memo. No. 70417.
50. Roller OP. California State Dental Association [proceedings]. *Dental Cosmos*. 1902;44:1072.
51. Marshall JS. Work done at Fort Presidio by the Dental Corps. *Pacific Gazette*. Quoted in: *Dental Register*. 1902;56:530.
52. Marshall JS. The Dental Corps of the Army. *Dent Rev*. 1902;16:171.
53. Roster of dental surgeons, U.S. Army. *Dental Cosmos*. 1902;44:402.
54. Army Dental Corps. *Dental Cosmos*. 1902;44:1100.
55. National Archives and Records Administration. Record Group 112. Contract dental surgeons. Report, enclosure to letter, John S Marshall to the surgeon general, August 19, 1902. No. 89178. Box 616. Entry 26.
56. National Archives and Records Administration. Record Group 112. Contract dental surgeons. Report, enclosure to letter, John S Marshall to the surgeon general, July 2, 1903. No. 89178. Box 616. Entry 26.
57. National Archives and Records Administration. Record Group 112. Walter D McCaw, surgeon general's office, to John S Marshall, July 8, 1903. Letter. No. 89178. Box 616. Entry 26.
58. Office of The Surgeon General. *Annual Report of the Surgeon General, 1903*. Washington, DC: Government Printing Office; 1903: 30.
59. National Archives and Records Administration. Record Group 112. Contract dental surgeons [July 2, 1902]. 21.
60. National Archives and Records Administration. Record Group 112. Marshall to surgeon general, September 12, 1903. Letter. No. 89178.
61. National Archives and Records Administration. Record Group 112. Marshall to surgeon general, October 31, 1904. Letter. No. 89178.

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

62. National Archives and Records Administration. Record Group 112. Major Charles F Mason, surgeon general's office, to Marshall, December 16, 1904. Letter. No. 89178.
63. National Archives and Records Administration. Record Group 112. Dr Noel to surgeon general, June 14, 1903. Letter. No. 70760.
64. National Archives and Records Administration. Record Group 112. Dr Finley to surgeon general, June 14, 1903. Letter. No. 70760.
65. National Archives and Records Administration. Record Group 112. Dr Finley to surgeon general, June 17, 1903. Letter. No. 70760.
66. National Archives and Records Administration. Record Group 112. Surgeon general's office to John Marshall, July 6, 1903. Letter. No. 70760.
67. Marshall JS. Certain abnormal oral manifestations peculiar to tropical and sub tropical climates, as manifested among the American troops in the Philippine Islands. *Dental Digest*. 1904;10:551–561.
68. National Archives and Records Administration. Record Group 112. Marshall to the surgeon general, September 14, 1903. Letter with enclosure; Marshall, hygiene of the teeth and mouth. No. 70417. Box 446. Entry 26.
69. National Archives and Records Administration. Record Group 112. WP Evans, assistant adjutant general, to chief surgeon, Department of California, April 16, 1904. Letter with enclosure; Memorandum for soldier's hand book. No. 105637. Box 709. Entry 26.
70. *The Soldier's Handbook for use in the Army of the United States*. Washington, DC: Government Printing Office; 1908: 80.
71. Ashburn PM. *A History of the Medical Department of the United States Army*. Boston, Mass: Houghton Mifflin Co; 1929: 285–290.
72. National Archives and Records Administration. Record Group 165. General staff folder, medical department efficiency bill, 1904. Box 19. Entry 3.
73. Gillett, MC. *The Army Medical Department, 1775–1818*. Vol 3. Washington, DC: Center of Military History, United States Army; 1981: 320–322.
74. National Archives and Records Administration. Record Group 165. O'Reilly to the chief of staff, December 24, 1903. Letter with enclosure; Memorandum to accompany a bill to increase the efficiency of the Medical Corps, U.S. Army. General staff folder, Medical Department Efficiency Bill, 1904.
75. National Archives and Records Administration. Record Group 165. Contract surgeons: eligibility of, to command troops. Judge Advocate Davis to adjutant general, April 8, 1903, Appendix IV to memorandum, enclosure to letter, O'Reilly to the chief of staff, December 24, 1903.

A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

76. National Archives and Records Administration. Record Group 112. John S Marshall to Surgeon General O'Reilly, November 30, 1903. Letter. No. 70760.
77. National Archives and Records Administration. Record Group 112. Surgeon general to Marshall, December 12, 1903. Letter. No. 70760.
78. National Archives and Records Administration. Record Group 112. Marshall to surgeon general, January 2, 1904. Letter. No. 70760.
79. National Archives and Records Administration. Record Group 112. Surgeon general to Marshall, January 4, 1904. Letter. No. 70760.
80. US War Department. General orders no. 132. In: *General Orders and Circulars, Adjutant General's Office, 1902*. Washington, DC: Government Printing Office; 1903: paragraphs 58–59.
81. National Archives and Records Administration. Record Group 94. Robert T Oliver to the military secretary, September 6, 1904. Letter. No. 407861. Box 2837.
82. National Archives and Records Administration. Record Group 94. Fourth endorsement, CL Heizman, acting surgeon general, to quartermaster general, October 26, 1904. No. 407861.
83. National Archives and Records Administration. Record Group 94. Lieutenant Colonel James T Kerr, acting chief, 1st Division, general staff, November 15, 1904. Memorandum report. No. 407861.
84. National Archives and Records Administration. Record Group 94. HP McCain, assistant adjutant general, to commanding general, Philippines Division, November 25, 1904. Letter. No. 407861.
85. Hussey SW. The life of an Army dentist. *Dental Register*. 1905;59:578–580.
86. The Army Dental Corps. *Army & Navy Journal*. Cited in: *Dental Cosmos*. 1903;45:902.
87. Marshall JS. The United States Army Dental Corps. Cited in: *Transactions of the Fourth International Dental Congress*. Ed. Kirk E. Philadelphia, Pa: Press of the Dental Cosmos; 1904: 48–49.
88. Sorber OM. The United States Army Dental Service. *Dental Brief*. Cited in: *Pacific Dental Gazette*. 1904;12:252–255.
89. National Archives and Records Administration. Record Group 112. Long to Brigadier General William E Dougherty, June 5, 1904. Letter. No. 106047. Box 712. Entry 26.
90. National Archives and Records Administration. Record Group 94. Order No. 44, WS Scott, captain, acting assistant adjutant general, Division of Philippines, to John D Millikin, January 5, 1903. Letter. No. 472628. Box 3319. Entry 25.

BUILDING THE FOUNDATION: THE EARLY YEARS OF ARMY DENTISTRY

91. National Archives and Records Administration. Record Group 112. War Department Circular No. 33, July 1905. Box 54. Entry 26.
92. National Archives and Records Administration. Record Group 94. Robert T Oliver, China service, 1903–1904. No. 516526. Box 3596. Entry 25.
93. V[ail] WD. The Dental Corps. *Dental Bulletin Supplement to the Army Medical Bulletin*. 1934;5:158–160.
94. National Archives and Records Administration. First endorsement, Colonel JB Girard, chief surgeon, Philippines Division, to report, Oliver, April 1901–October 1904.

