

# Schooling for the Medical Department

## 1860–1901



Army Medical Museum,  
Surgeon General's Office,  
Washington  
October 2, 1899.

University of the Army Medical  
School, 15th Street, Washington  
D.C. 1899. The purpose of  
this course is to provide  
the Army, U.S.A., with a  
class of 1899.  
President  
Members of the Faculty  
Having transmitted the  
report of the Faculty  
on the proposed  
and of the President

Amelia  
Col. Paul J. Cameron  
President  
Prof. J. H. H. H. H.  
Secretary

*“Training, too, was needed to make an Army.”<sup>1</sup>*

A War Department Order of April 7, 1862, placed general hospitals under the Surgeon General's direction, but the right of medical officers to command, within their own sphere, was not settled until publication of General Order No. 306, December 27, 1864. By February 8, 1865, such control was extended to include hospital trains and hospital boats. The great temporary general hospitals of the Civil War period disappeared rapidly as the Army demobilized and by 1866 there were none.<sup>2</sup> The collection of professional reference books, begun in 1836 for the Surgeon General's convenience, was increased through reassignment of surplus funds remaining from the deactivated general hospitals, and in the fifteen-year period following the war, the collection began to assume the proportions as well as the name of The Surgeon General's Library.

The Army was concentrated at small stations in the West, South and Southwest, with the number of regular Army medical officers supplemented by contract surgeons. Newly appointed officers could anticipate at least two four-year assignments at such stations,<sup>3</sup> where life was rugged and news of medical progress in the outside world was slow to arrive. Changes were occurring which would have a profound effect on the military medical service, but not even the best of dreamers could visualize the future.

Three civilian training schools for nurses were opened in 1873, but no prophet seems to have noted as unusual the new trend toward orderly technical schooling for females. Medical education was destined for professional reform, and a few American doctors even then were interested in Lister's controversial germ theory of disease. Isolated as they were, frontier Army doctors had little time or inclination to question the old ways, and so George M. Sternberg, an Army surgeon who began an independent study of disinfectants in 1878, was unusual.<sup>4</sup> Such persistence required courage as well as foresight, for he was ridiculed by more functionary and less scholarly contemporaries.<sup>5</sup> Nevertheless, by 1884, the year that the Congress authorized limited medical care for the civilian dependents of military personnel,<sup>6</sup> and before disinfectants were in general use either in Europe or America, Army doctors were beginning to use antiseptic techniques in surgery.<sup>7</sup>

Able military medical assistants were needed in this new era of hospitalization, men with different training than that required of teamsters and packers, of cavalymen and foot soldiers. On November 20, 1886, War Department General Order No. 86 authorized the instruction of corporals in first aid; the Act of March 1, 1887 (24 Stat. 435) established and permanently attached to the Medical Department of the Army, a Hospital Corps, whose uniform was still trimmed in the emerald green color used by the Civil War surgeons for the sashes of their full dress uniform. The United States, a procrastinator in ratifying the Geneva Treaty, had capitulated on March 1, 1882. By 1887 the Hospital Corpsmen were identified by a red cross mounted on a white arm band or brassard.<sup>8</sup> Likewise of major interest to the future structure of the medical service, on January 17, 1887, the Army and Navy General Hospital was opened in Hot Springs, Arkansas, with beds for sixteen officers and sixty-four enlisted men.<sup>9</sup>

Qualifying examinations had, since publication of the Medical Department Regulations of 1856, governed the promotion of corporals to acting hospital steward and steward, positions comparable to those held by non-commissioned officers of the line. War Department Order No. 56, August 11, 1887, promulgated rules and regulations. It would be many years, however, before the admission and departure of officers at general hospitals would be strictly controlled, for they continued, when they got chronic ailments, "to take a sick leave and wander off to be treated at their own expense, and often very poorly treated."<sup>10</sup> In fact prior to 1895, the sixteen-bed officer division received patients from October until June only.

By 1888, James E. Pilcher<sup>11</sup> had written the first Medical Department technical manual and similar manuals issued for some years thereafter included a section on Hospital Corps drill. Thus the post-Civil War period not only engendered a new interest in the care of the wounded, but for the Army medical service it was a period of organizational consciousness during which one of the first requisites "was to make the position of the medical officer such that he would place some value upon the retention of his office...."<sup>12</sup>

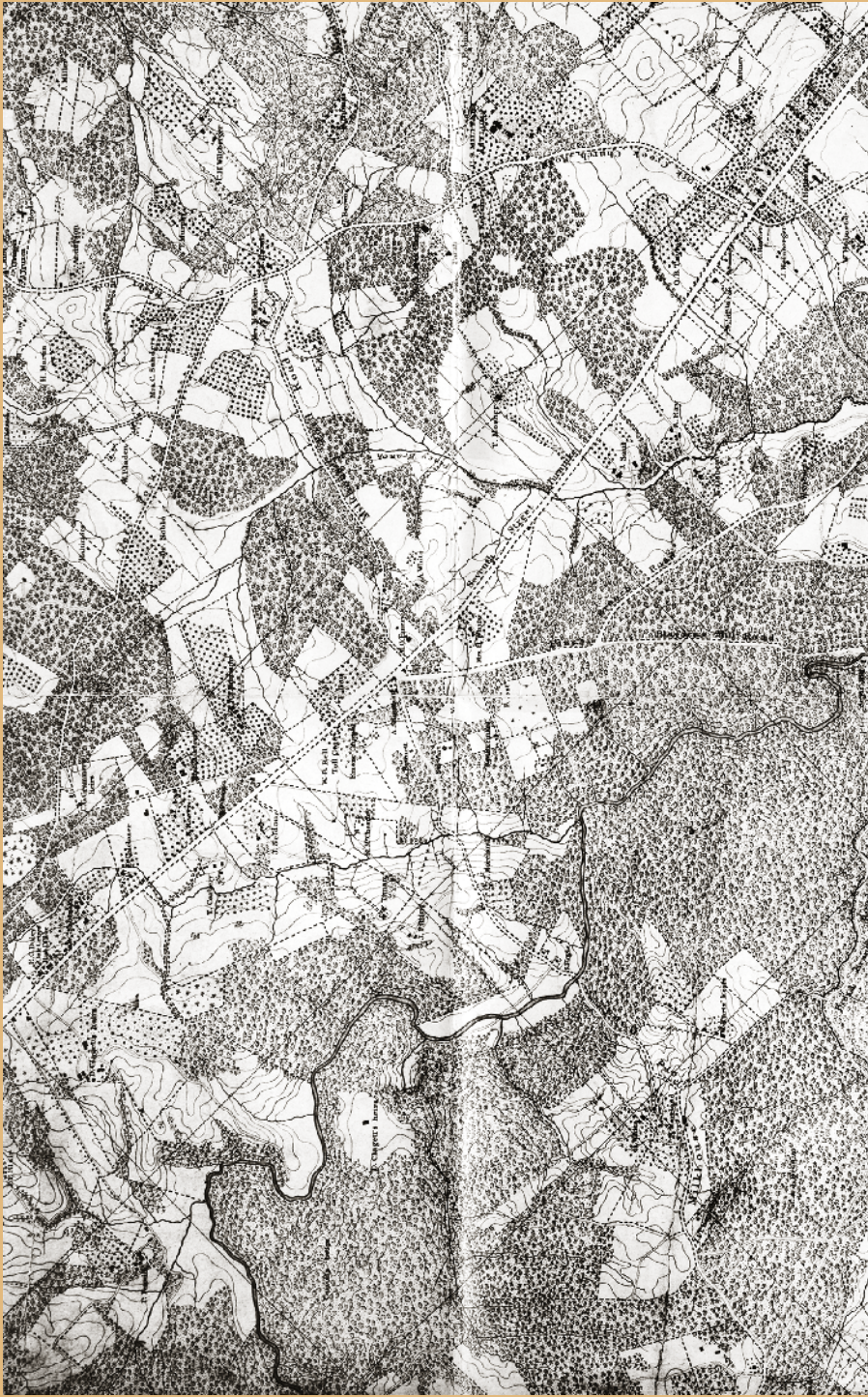
Hostilities against the Indians continued until about 1890, with the medical field soldiers performing their duties so satisfactorily that a detachment, or Company of Instruction, was organized at Ft. Riley, Kansas, in 1891. The military-minded young Captain John

Van R. Hoff was in command. Although in common use, the name Hospital Corps was not authorized officially for some ten years.<sup>13</sup> Securing satisfactory personnel for a stable and well-trained nursing service was an ever-present problem, as under the old system men detailed from the line received a higher rate of pay than those enlisting in the Medical Department. The Surgeon General was convinced that training the Hospital Corps was a major responsibility and that the organization must in “all particulars be a military one.” Thus by 1892, three Companies of Instruction were in training at western posts, each with tentage and field hospital furniture. New recruits received practical instruction in first aid, nursing, cooking, administration, drill and other related duties, and after being trained some of the men were reassigned to small hospitals at garrisons and posts.<sup>14</sup> In spite of Congressional recognition, however, the medical soldier was destined to have difficulty in “winning his spurs”, for now and then uncooperative Quartermasters decreed that mules were the only available mounts, hardly a dignified means of transportation when accompanying the more militant and clanking cavalry and artillery.

Militarily the United States was divided into eight Departments or areas of command by 1894: Department of the East; The Platte; Dakota; Missouri; Texas; California; Arizona and Columbia. The Columbia Department included the historic Washington Arsenal, renamed Washington Barracks in 1861.<sup>15</sup> Located at the confluence of the Po-tomac and Anacostia rivers and bounded on the east by James Creek Canal, the Barracks occupied some forty-four acres on Greenleaf’s Point, used as a fort since 1797. Shops had appeared in the neighborhood in 1807, and by 1812 the fort was an important storage place for powder. Destroyed by the British in 1813, it was rebuilt in 1815, but destined for varied military uses – in 1826 as a penitentiary and during the Civil War as an ordnance and supply depot for the Army of the Potomac.<sup>16</sup>

The location was attractive though not especially healthful, for the ground was low, actually at sea level. Tonsillitis and rheumatic conditions affected the troops in winter and in the summer the humid Washington heat made the area uncomfortable. As if heat and humidity were not enough, the troops likewise suffered from the presence of “malarial exhalations in this locality (which accounted) for the prevalence of the disease”. The James Creek Canal was still an open sewer in 1894, and the water was “foul smelling at all times”. The animate theory of disease was not generally accepted and so the Surgeon General believed that the troops were fortunate that the river “bank next to the post (was) lined with a double row of poplars and willows, forming a dense screen of foliage which (did) much to intercept malarious exhalations”.<sup>17</sup> True there were other health problems, for Washington City was still the naughty place of General Hammond’s day, and in 1896 the Barracks “had a considerable excess of venereal cases and twice as much alcoholism as is ordinarily found at military posts,”<sup>18</sup> but neither of these afflictions could be considered seasonal scourges. It required more than poplars and willows to curb the exuberance of soldiers.

Line officers were responsible for recruitments and assignments but many were careless in their selection of men detailed to the Medical Department as nurses. And so the



*Seventh Street Turnpike, about 1861*



*Army Medical Museum & Library Building; First Home of Army Medical School*

doctors wasted valuable time training subordinates for semi-professional duties, only to have them reassigned at will. Moreover, assignments were not necessarily permanent, especially during war, as company (military) affairs frequently took precedence over care of the sick. The quality of enlisted personnel so assigned depended to a large extent on the tolerance or liking which company commanders bore their weaponless adjuncts, the doctors,<sup>19</sup> some of whom were heretical enough to urge that the soldier-attendants be dishonorably discharged for drunkenness rather than merely discipline, for “a drunken nurse in one minute of error may cause injury that can never be remedied.”<sup>20</sup>

During this decade of apprenticeship, when the medical soldier was emerging as bonafide military personnel, his preceptor and sponsor, the medical officer, was being cultured by such men as Woodhull and Hoff.<sup>21</sup> Their contemporaries, when forced by circumstances to take a more general interest in sanitary matters affecting the health of the troops, would find that versatility in Army matters gained for them respect from line commanders inclined to ignore their professional recommendations if costly,<sup>22</sup> for many line commanders had the authoritarian’s honest resentment of recommendations made by the uninitiated. Moreover, some evaluated the military surgeon in terms of a proper “bedside manner” and a willingness to be addressed as “doctor.” Cured, or dead, they had no further use for him and seldom considered him a part of the Army.

Few of the grenadiers of that period agreed with the Surgeon General that “there are certain duties pertaining to the position of an Army Medical Officer more important than the clinical treatment of disease and injury.”<sup>23</sup> But some young doctors took seriously the adapted inscription from an old sentry box in Gibraltar, which hung as a plaque in the office of many practicing physicians,

*God and the doctor*<sup>24</sup>

*All men adore*

*In time of trouble*

*And no more;*

*For when war is over*

*And all things righted*

*God is neglected —*

*The old doctor slighted.*

Militarily, it was time to improve the doctors' status. The only way to do it, according to Woodhull and Hoff, was to be both soldier and physician. It would require brilliant men to play such a role, for the prize would be large and the burden heavy.

## The Army Medical School

While an organized field hospital service was acquiring a firm footing in training posts west of the Mississippi, Medical Department prestige was beginning a slow but sure climb in the East. The Army Medical Library and Museum were opened to “the medical profession at large, to scientific bodies and to professional students” by special act of Congress in 1892.<sup>25</sup> George M. Sternberg was appointed Surgeon General in 1893 and succeeded at last in establishing in Washington, the Army Medical School,<sup>26</sup> housed in the Museum Building, located at 7th and B, Southwest, which had sheltered the Surgeon General's<sup>27</sup> Library since 1888. Three of the principal activities planned for Hammond's quadrangular medical unit were now in existence; of the four, only the general hospital lacked authorization.

Three decades had passed since the proposal was made. Unless the Medical Department was willing to accept a secondary role in American medicine it was necessary to supplement the meager instruction in biological sciences, especially bacteriology and chemistry, then offered in the undergraduate medical schools.<sup>28</sup> Thus the School was established to instruct approved candidates for admission to the Medical Corps of the Army in their ever-widening responsibility as Medical Officers and in the basic sciences. Army physicians in and near the District of Columbia, and others who had sufficient leaves of absence, could be admitted to the four-month course under the same regula-

Army Medical Museum,  
 Surgeon General's office,  
 Washington,  
 October 2, 1893.

The Faculty of the Army Medical School held its first meeting at 11 am, O'clock, pursuant to General Order No. 78, Headquarters of the Army, A. G. O., Washington, September 22, 1893.

Present:

All the members of the Faculty.

Having transacted the business before it, the Faculty, at 11.15 am, adjourned, subject to the call of the President.

W. M. Allen  
 Col. & Asst. Surg. Gen. U.S.A.  
 President.

Walter Reed,  
 Capt. & Asst. Surg. U.S.A.  
 Secretary.

Memorandum recording first faculty meeting of the Army Medical School, October 2, 1893, signed by Walter Reed

tions governing the regular students. Four professors would be assigned from among the senior officers in or near Washington, and as many associate professors as necessary to provide practical laboratory instruction in the methods of sanitary analysis, microscopical technique, clinical microscopy, bacteriology, urine analysis, etc.

While designed for graduate instruction, it was a school in fact as well as name, for in addition to giving a course of lectures in property responsibility, the examination of recruits, certificates of discharge with disability (CDD) reports, rights, privileges and

customs of the service etc., the President of the Faculty was responsible for discipline. Judging from the first class photographs, so sedate a group of young doctors could have had little time or inclination for pranks, for during the hours of class instruction they wore the stiff and uncomfortable uniform of their grade and in the laboratory, a black cambric gown.<sup>29</sup> As usual in military procedure, when the faculty held its first meeting, October 2, 1893, the junior professor served as secretary and recorder. The junior professor was, at this time, a little known but diligent student of microbiology, Captain and Assistant Surgeon, USA, Walter Reed, curator of pathology at the Army Medical Museum. Some of his first Army Commanders believed he had little scientific ability, and in 1890, when he began post-graduate clinical study at the newly opened but already influential Johns Hopkins hospital, he was told to leave the laboratories alone. It was Surgeon General Sternberg, apparently, who urged him to follow his own specialty, an interest he pursued as a commuter from Washington, often accompanied by Hospital Steward James Carroll, whose "peculiar aptitude for this type of work gained for him admission to the regular University courses."<sup>30</sup>

Like all faculties, the professors had a certain amount of school administration to contend with, and determining academic standing became an important issue when they gathered on the first Monday of the month to discuss academic problems. Captain Reed was obviously a congenital schoolmaster, for with the course hardly a month old he was the first professor to infringe on class time belonging to another. Serene and scholarly, he appropriated, apparently without apology, one hour of the time allotted to the Assistant Professor of Military Surgery and Instructor in Hospital Corps Drill.<sup>31</sup>

The students were undeniably members of a learned profession, and they seem to have had less aptitude, or perhaps less interest, in strictly military matters, for it took them until January 12, 1894 to become adapt at drilling a squad of litter bearers. The price of military proficiency had other drawbacks, for no matter what their progress on the ground, the budding young officers were at a disadvantage on a horse. As officers they could not indulge in the undignified comfort of mule-riding, and so early in the New Year 1894, the President of the Faculty learned that "five at least of the gentlemen still needed instruction" in equitation at the riding academy at Fort Myer, Virginia, where Saturday mornings were devoted to drill and riding.<sup>32</sup>

Military rank was fixed prior to attendance at the School, but the faculty believed this prevented competition and that the corps rank of new officers should be determined by the combined results of their school work and the findings of the Army Examining Board.<sup>33</sup> Alas for professional promotion, for rank and precedence, had academic standing been influenced by a correct seat in the McClellan saddle! There were only five students in the first class, gentlemen obviously predisposed to the use of carriages, but their lack of interest in equine anatomy was characteristic of many of their successors. A half-century later to some of the earlier "schoolboys":





*First Graduating Class; Army Medical School, 1894. Assistant Surgeons: T.S. Bratton, A.S. Porter, W.W. Quinton (Sitting), D.C. Howard, W.H. Wilson*

*... Memory of the riding hall exercises (was) better than of more important subjects. Of the class of forty, six or seven had never been on a horse before. Some were afraid to jump ... and would collect on the side lines or find something wrong with their saddles. One, Collins, fell off his horse while he was standing still, and sprained his ankle. The ambulance was called, but as it was away, the soldiers loaded him in a trash cart and hauled him across the parade ground to the hospital.*

*George H.R. (High Ranking) Gosman was so short and his stomach was so large that he could not jump on the horse while it was standing still, much less while it was at a trot. His efforts were so amusing that the soldiers had great fun watching. He was good natured, and the more he laughed at himself the worse he got. On one occasion his fractious mount was misbehaving and H.R. dropped the reins. As he was unable to control the animal, he grabbed it around the neck and held on until the soldiers ran and caught him. At that point one of the bystanders suggested to the Doctor that he climb down the hind leg while the horse was standing still!<sup>34</sup>*

The curriculum for the first year was more or less arbitrarily established, but by the time the second session began, in the autumn of 1894, some of the younger professors were urging a broader program of instruction in pharmaceuticals, chemistry, involving the testing of drugs and determination of the specific gravity of urine, tests for sugar and albumin. Many of the new recruits for the Hospital Corps came from the eastern part of the United States, and so for convenience as well as economy a Company of Instruction was located at Washington Barracks during the year, with the men performing duties at the School and the recently built post hospital, where some received on-the-job training "in the preparation for" surgical operation. Some of the professors wanted to increase this training, but the President of the Faculty resisted, possibly because he thought the time wasted as the Department had a contract with Providence Hospital to care for "the support and treatment of ninety-five medical and surgical cases."<sup>35</sup> Captain Reed, supposedly shy and retiring with people, was on better terms with bacteria and stated his position firmly:

*...Saying that in his department it would be of importance to give stewards and acting stewards, and the brighter members of the (Hospital) Corps instruction in the principles of antiseptics, and that it would be not only feasible but most important to instruct them practically in hand disinfection.*<sup>36</sup>

The physical condition of American military camps was improving steadily during these years, and the awakening public health consciousness of medical officers was an effective instrument in reform. Basic humanitarian principles as well as good sense influenced some of the new measures, as the (diet) ration was improved, summer weight clothing was issued to men stationed in the south, bathing and latrine facilities were increased and decent mattresses and sheets were being issued in the garrisons. The Medical Department was making improvements within the hospitals, with the Surgeon General recommending that men assigned to nursing duties wear "white linen blouses and pantaloons."<sup>37</sup> The age of experimental medicine was dawning, and the professional care of the military ill was to be accomplished in a scientific manner, for in 1895 Post Surgeons were "directed to set aside in their hospitals a special room as an operating room..."<sup>38</sup>

Medical problems likewise received professional consideration during the autumn of 1895. The President of the Faculty was concerned for the mental health of the Army and believed that "instruction in lunacy (was) of importance to the student officers, especially as melancholia was so common a disease in the service."<sup>39</sup> As was characteristic of government agencies, even the "Bureau of Melancholia" was slow in cooperating, and while the budding young medical officers waited for Dr. Godding of the Government Hospital for the Insane, built in 1855,<sup>40</sup> to deliver a series of lectures on lunacy, Dr. Robert Fletcher, distinguished scholar and then editor of the famous



*Hoff Memorial Prize Medal, 1897*

when the new session opened in 1897, for he offered to the best all-round man of the year a forty-dollar<sup>44</sup> cash prize in honor of his medical-officer father. Early competition for the prize may not have been keen, or perhaps “the grind” was not as severe as the curriculum implied, for the students unanimously requested and were granted leave to attend the Army and Navy football game on November 26, 1897. However, with a real academic stimulus in view, the faculty determined to issue “Certificates of Proficiency” to students with average between 70-90, and “Proficiency With Honors” for grades of ninety and above.

## A Prod to Scientific Awakening

The new-found interest in military medical training was interrupted by the Spanish-American War, the first war which found the Medical Department centrally organized, even if poorly equipped to perform its mission. There was no War Department general

Index — Catalogue, discussed elementary library techniques — the use of books and journals in the Library of the Surgeon General’s Office.<sup>41</sup> It is worthy of note that whatever its other drawbacks and disabilities, the mental health of the Army as a whole failed to suffer markedly from the delay.

By 1896, three years after opening the School, the faculty decided that either the written or oral examinations could be used, with professional discretion. Captain Reed, whose scholarly lectures were salted with a certain amount of dry humor,<sup>42</sup> attacked the problem with enthusiasm and announced heartlessly that “the examination in his Department would cover the morning hours of the present week together with two mornings in the next.”<sup>43</sup>

The incentive to excel, which the faculty believed deplorably lacking because rank was established prior to admittance, was coaxed by Lieutenant Colonel John Van R. Hoff,

staff to correlate and coordinate military problems and inter-departmental relationships were complicated. Adequate financial support for a non-combatant arm of the service was hard to secure; supplies were poor, scarce, and the transfer of supplies still poorer; the Quartermaster was entirely responsible for the ration, and proper diets for the sick were not readily available. As in the Civil War, some newly uniformed civilian doctors were not only professionally unprepared but, lacking military training, they objected to discipline. Few had even the minimal administrative experience and knowledge of sanitation then being taught medical officers, and since they were unfamiliar with the vast requirements of a mobilization, some criticized the Medical Department freely.

Once again the women decided to go to war, this time with more determination, more publicity for their cause and a more knowledgeable basis for the freely voiced criticisms of camp sanitation and hospital management. In the interval since the Civil War, Clara Barton had organized the American National Red Cross, not without challenge, to be sure, but it was a going concern. Women welfare workers now had a recognized outlet for their energies, and the government had a humanitarian ally. Of more importance, the ally was able to act with an enviable degree of freedom and independence.

For the second time in less than half a century a woman physician took the initiative in sponsoring trained nurses for the Army. However, Dr. Anita Newcomb McGee, a prominent Washington physician, had an advantage which Dr. Blackwell lacked — she and her father were personal friends of General Sternberg.<sup>45</sup> Again in New York, the American National Red Cross Relief Committee formed a Women's Committee, an auxiliary which formed, in turn, an extremely active and influential subcommittee known as Auxiliary No. 3, or the Red Cross Society for Maintenance of Trained Nurses. The Auxiliary's two principal lay sponsors were Mrs. Whitelaw Reid and Mrs. Winthrop Cowdin, wealthy New York socialites, and its professional spokesmen included some of the most distinguished directors of nursing from New York hospitals. However, when both the national nursing organizations and the Auxiliary attempted to provide graduate nurses, they found the field controlled by the Hospital Corps of the Daughters of the American Revolution, with Dr. McGee installed as Superintendent of Nurses. There would be skirmishes among the skirtwearers as feminist challenged feminist, and until the nursing situation became acute, military commanders did not encourage the presence of female nurses in the camps.<sup>46</sup>

The Army was not alone in its conservative reaction to females, for in spite of the feminist movement then beginning to erupt in full force, the public had not endorsed wholeheartedly woman's new found freedom. The national Army was a hodgepodge of state militia. The Medical "Corps entered the war as a corps in name only, in reality an aggregation of post surgeons."<sup>47</sup> Its sentiments were the sentiments of the nation. Men familiar with rough camp life were not only unwilling to subject women to its trials but they were unwilling to add to their own burdens and responsibilities until defeated by conditions beyond their own control. Although the women viewed the disastrous epidemic condition in terms of the functional care of patients, the reluctance

of some doctors to accepting them as military and professional colleagues encouraged some of the leaders in the nursing movement to believe the Medical Department was unwilling rather than unready to accept the distaff branch.<sup>48</sup>

The hospital-trained women nurses then under temporary contract to the government objected violently to the sanitary conditions of the camps; they criticized the care or lack of care offered by the hastily recruited corpsmen; they resented the supposition of soldier and officer that women could not adjust to camp life; the assumption of physicians and men nurses that they could not perform, within woman's natural sphere — nursing — the duties of nurses without special favors for their sex; many of the more robust ones endured hardships rather than complain. Camp life was a new experience, one without preamble or guidepost. As was to be expected, some nurses commented without hesitation on supposed military inefficiencies. Challenged as women, challenged as nurses, they in turn challenged in behalf of women's rights!

Fortunately, the war was short-lived. The new crop of Army doctors, riven by their own undefined problem, the medical officer versus the strictly medical practitioner, wasted no time on a psychosomatic diagnosis of aroused womanhood. Such a consideration was, after all, beyond their abilities in an era when they had not solved more factual health problems. The majority of the doctors were warm in their praise of the nurses' services, and such official encouragement instilled hope of a permanent place in the Army. The nurses were obedient aides, undemanding and anxious to be useful, for as the Surgeon General said "the systematically educated and trained nurse (was) developed by the medical profession..."<sup>49</sup>

Alcoholism and venereal disease were two of the principal health problems of the peacetime Army — reason enough, by nineteenth century standards, to protect American womanhood from the rigors of camp life. Prior to their replacement by contract nurses, eleven of the Red Cross — paid nurses were sent for relief work in the Philippines, shortly after the war. Both contract nurses and Red Cross nurses had served in Cuba and the United States, and one young nurse expressed the (post-war) situation graphically: "The sickness now among the men is dwindling down to just what the majority of the soldiers have, and just what, for that reason, the Army doctors say, a post hospital is no place for female nurses."<sup>50</sup> Nevertheless, a Congressional bill was already in the hopper to create a permanent Nurse Corps to replace the contract nurses appointed during the emergency. Corrected of some features objectionable to the Surgeon General, who earnestly desired to evade responsibility for its first defeat,<sup>51</sup> it passed, in 1901, and Eve entered the Army to stay.

The Army Medical School closed early in the spring of 1898, before recommendations for extending the course from four to five months could be effected.<sup>52</sup> Its students departed for "the front." Walter Reed, by then a major, was still in Washington when camp pollution from typhoid fever reached the proportions of a national scandal. There were few recognized sanitarians either in or out of the Army, and laboratory diagnosis of typhoid fever by stool and blood examination was an unused technique. Recognition of human

carriers of this disease was nearly a decade away. As one of the three physicians composing the Typhoid Fever Board appointed by the Surgeon General, Major Reed eventually made important recommendations on what then was thought to be the spread as well as the etiology of the disease.<sup>53</sup> The monumental report prepared by this Board was a noteworthy scientific contribution both to public health and clinical medicine, and through his work Major Reed brought credit to the Army Medical School. For the Medical Department, much scientific work lay ahead; some of it would be more spectacular than any of its budding scientists had dreamed. Like twice told tales, the saga of military medicine during the otherwise gay nineties became a legend of heroic proportions. Although an advanced scholar for his day, even the Surgeon General was a baffled sanitarian. Cannily he qualified his observations and couched his comments on epidemics in vague terms:

*Given certain conditions as to the environment of soldiers recently enlisted and assembled in camps of instruction and the prevalence of typhoid fever may be predicted with certainty.*<sup>54</sup>

## References

1. Margaret Leech, *Reveille in Washington 1860–1865*, Harper & Brothers, New York and London, ca 1941, pg 107.
2. P.M. Ashburn, *A History of the Medical Department of the United States Army*, Boston and New York, Houghton-Mifflin Company, 1929, pg 88.
3. Ltr from “JM”, Surgeon General, U.S. Army to S.F. Philipps, Senate Office Bldg. Washington, D.C., Jan. 10, 1890, SGO Folder 1430, War Records Div Nat’l Archives.
4. Ashburn, *op cit*, pg 137.
5. Ashburn, *op cit*, pg 147, 148.
6. U.S. Statues at large, Chps. 217, 48th Congress, Sect. I, app. June 5, 1884; Act 5 July 1884 (23 Stat. 112).
7. Annual Report TSG to TSW, 1885, pg 27, 28.
8. Ashburn, *op cit*, pg 425.
9. James Mathew Phalen, *Chiefs of the Medical Department United States Army 1775–1940* (published by the Army Medical Bulletin) pg 60.
10. Biography of Gen. J.R. Kean, pg 96, Manuscript Copy, on file AML.
11. James E. Pilcher, the *Transportation of the Disabled... by Human Bearers*, Reprint from J. Mil. Serv. Ints. NY, 1888; *Ibid*, *An Exercise in the Extemporization of Litters from Rifles and Gunslings* Rept. from Boston M & SG, 1888.
12. Phalen, *op cit*, pg 29.

13. Phalen, *op cit*, pg 68.
14. Annual Report TSG... 1891–1892, pg 10–16.
15. General Order No. 40, May 12, 1881, changed name from Washington Arsenal to Washington Barracks, Telephone information provided by Miss Charlotte Greenwood, Ref. Lib., NWC, Dec. 6, 1950.
16. Charles J. Sullivan (comp) *Army Posts and Towns...* Burlington Free Press Printing, 1926, pg 46; *Arsenal in Old Days*, Washington Post, July 14, 1901.
17. Annual Report TSG... 1893–1894, pg 58, 59.
18. Annual Report TSG... 1895–1896, pg 19.
19. Kean, *loc-cit*.
20. Annual Report, TSG... 1891–1892, pg 14.
21. Ashburn, *op cit*, pg 156.
22. Kean, *op cit*, pg 128; Interview, Major General Orlando Ward, Chf. Office of Military History, WDSS.
23. Annual Report TSG... 1893–1894, pg 15.
24. The word doctor substituted for soldier.
25. James C. Magee, TSG, Memorandum, Reference, Army Medical Library and Museum Bldg., April 27, 1940 (prep. By Love) 631-1 SGO Judge Thompson's file.
26. General Orders No. 51, Hdq. of the Army, AGO, Washington, June 24, 1893.
27. Information provided by Brig. Gen. Raymond Dart, M.C. (telephone) March 8, 1950.
28. Based on interviews with: J.R. Kean, B.G., M.C., Ret'd., Nov. 1946, Dec. 11, 1947, Apr. 17, 1950; J.M. Phalen, Col., M.C., Ret'd., April 19, 1950; A.G. Love, B.G., M.C., Ret'd., April 5, 1950; R.U. Patterson, M.G., M.C., Ret'd., Aug. 24, 29, 1950; A.E. Truby, B.G., M.C., Ret'd., Jun. 27–28, 1950.
29. Records of the Army Medical School, Oct. 2, 1893 – April 10, 1905, First to Ninth Session incl., original on file AMS, AMC.
30. *Ibid.* General Order No. 78 — Sept. 22, 1893, named faculty — Colonel Chas. H. Alden, Ass't Surgeon General, Pres; Lt. Col. Wm. H. Forwood, Deputy Surgeon General (Mil. Surgery); Maj. Charles Smart, Surgeon, Mil. Med. & Director of the chem. laboratory; John S. Billings later took over Prof. of Mil. Hyg; Capt. Walter Reed, Asst. Surg. professor of clinical and sanitary microscopy and director of the pathological laboratory; Capt. John M. Cabell, Asst. Surg., Asst. Professor of military surgery and instructor in Hospital Corps drill; Dr. Hurd's unpublished MS "First Quarter Century of the Johns Hopkins Hospital," apparently extracted from notes on *Welch's pupils* in folder "Welch as Scientist... Teacher and Speaker." Collection of the Inst. of Hist. of Med., Welch Medical Library, Baltimore, Md.
31. Minutes... AMS, (on file Office of the Commandant), Nov. 6, 1893.

32. Minutes... Jan. 12, 1894, *op cit.*
33. Minutes... March 6, 1894, *op cit.*
34. Ltr from Col. Jas. D. Fife, M.C., Ret'd, to the writer, Jan. 11, 1951 (edited).
35. Annual Report TSG... 1895-1896, pg 10.
36. Minutes... AMS, October 15, 1894, *op cit.*
37. Annual Report TSG... 1893-1894, pg 15-19.
38. Annual Report TSG... 1895-1896, pg 7.
39. Minutes... AMS, October 30, 1895, *op cit.*
40. Act 3 March 1855 (10 Stat. 682) built for use of Army & Navy personnel of the U.S. and D.C.; name changed to St. Elizabeths Hospital by Act 1 July 1916 (39 Stat. 309).
41. Minutes... AMS, Nov. 7, 1895, *op cit.*
42. Interview with Maj. Gen. Robert U. Patterson, Aug. 24, 29, 1950.
43. Minutes... AMS, March 2, 1896, *op cit.*
44. Minutes... AMS, Dec. 6, 1897, *op cit.*
45. Florence A. Blanchfield, *Organized Nursing and the Army in Three Wars*, MSS on file Historical Division, SGO.
46. Ashburn, *op cit.*, pg 175, 176.
47. Ashburn, *op cit.*, pg 218.
48. Florence A. Blanchfield, *Organized Nursing and the Army in Three Wars*, MSS on file Historical Division, SGO; History of WAC organization in World War II (unpublished) MSS by Miss Mattie Treadwell, on file WDSS.
49. Annual Report TSG... 1899, pg 24.
50. Ltr from Lida G. Starr to Mrs. Whitelaw Reid, Feb. 22, 1899, written en route to the Philippines. Files of Auxiliary No. 3, Archives, ANRC.
51. Ltr from George M. Sternberg, TSG to Mrs. Winthrop Cowdin, March 13, 1899, File, Auxiliary No. 3, Archives, ANRC.
52. Annual Report TSG... 1897-1898, pg 22.
53. Ashburn, *op cit.*, 161-182.
54. George M. Sternberg, M.D., LL.D., *The Functions of the Army Medical School*, American Medicine, Vol. III, No. 14, April 5, 1902, pg 547-551.