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## AMERICAN ARMY HOSPITALS IN PENNSYLVANIA DURING THE REVOLUTIONARY WAR

**D**UE to British and American strategy in the War of American Independence from 1776 through 1778, the focus of military operations was the Middle Colonies. Due to the defeat of the Continental Army at Manhattan in October 1776, and its retreat over New Jersey to the Delaware in November, Pennsylvania was inundated with casualties. In 1777, Pennsylvania was invaded by the enemy, and the province again encountered the dilemma of sheltering incapacitated soldiers during an emergency. The following year, while General George Washington's troops encamped at Valley Forge, the army used numerous villages in the state as convalescent centers. The impact of these experiences on Pennsylvania, the response of its population to the crises, and the administration of military hospitals in this period are the subjects of this essay. More than any other state during the Revolutionary War, Pennsylvania made the greatest contribution to protecting sick and wounded patriots.

Philadelphia was the medical center of late eighteenth-century colonial North America. Eight of its thirty practitioners had European medical training; twelve made significant contributions to their fields; and from 1753 to 1777 over thirty essays on medical topics flowed from local presses.<sup>1</sup> The metropolis was proud of its medical men. Boasting the fine 120-bed Pennsylvania Hospital (the only such

1. See Carl Bridenbaugh and Jessica Bridenbaugh, *Rebels and Gentlemen. Philadelphia in the Age of Franklin* (New York, 1942), pp. 263-303, *passim.*, and Carl Bridenbaugh, *Cities in Revolt. Urban Life in America, 1743-1776* (New York, 1955), pp. 199-201, 409-410.

institution in the colonies), a medical school at the College of Philadelphia (rivalled only by King's College in New York), several scientific societies, and impressive libraries, doctors in the thriving port developed a sense of pride in elevating the standards of their occupation. Although few changes occurred in the theory or practice of medicine during the Enlightenment, and though medical services throughout the colonies were still haphazardly disorganized, on the eve of the Revolution in the Quaker City at least, medicine was acquiring the status of a profession. It was inevitable that the Continental Congress would select as administrators for its army medical department many Philadelphia-trained physicians, surgeons and apothecaries.

The organization of American military medicine began in early 1775 when the Massachusetts Provincial Congress provided medical staff and supplies for its militia battalions. Although thirteen doctors participated in the actions at Lexington and Concord on 19 April, and although the Bay Colony's Committee of Safety used homes and churches in Cambridge and Roxbury for hospitals, no formal medical bureaucracy was created. As volunteers from other New England colonies poured into the area to mount the attack on Boston, as the slaughter on Bunker Hill on 17 June demonstrated the necessity for improved medical services, and as Congress gradually assumed control of the provincial military forces, it established a medical department. After the brief leadership of the "Hospital Department," as it was termed under Dr. Benjamin Church (July-October 1775), a prominent Bostonian dismissed for treason, the delegates appointed the famed Dr. John Morgan of Philadelphia as Director General. The energetic Morgan procured bandages from the public, acquired drugs and surgical instruments, instituted rules for "sick call," examined candidates for surgeoncies, instructed his staff in wound treatment, and devised procedures necessary to protect masses of troops confined in crowded quarters from disease.<sup>2</sup>

The army doctors at Boston acquired some experience in military medicine and managed to keep the ration of sick during the ten-month investment of the city to an average of twelve per cent, a figure regarded as typical for lengthy siege warfare conducted in western

2. For information about Boston, see Philip Cash, *Medical Men at the Siege of Boston, April 1775-April 1776* (Philadelphia, 1973), *passim*.

Europe.<sup>3</sup> The medical men learned that fears of pestilence inhibited enlistments, and that the troops' health could be protected by the maintenance of certain favorable living conditions. Contagious diseases were not widespread at Boston, and few combat casualties occurred. Many local doctors volunteered their services, the surrounding area was generally sympathetic to the patriotic cause, and the campaign was conducted along static lines near populated market and supply centers. A major factor in the enforcement of camp sanitary regulations was Washington's personal interest in hygienic matters, reflected throughout the struggle in his general orders, which testify to his deep concern for the welfare of his troops. But whether the medical department could function effectively in less fortunate circumstances would soon be determined. In fact, the next major operations during 1776, waged in Canada and New York, graphically demonstrated the inefficiency of army medical care.

The daring American expeditions to Canada in late 1775 by Continentals from the upper Hudson and the Maine wilderness, their near capture of Quebec in December their determined investment of the citadel during early 1776, and their panicky retreat in May before newly arrived British reinforcements on the St. Lawrence are beyond the scope of this paper. Yet it is clear that hospital preparations were grossly inadequate, that inoculation procedures to prevent the spread of smallpox-epidemic at Quebec were carelessly supervised, and the shortages of drugs, surgical equipment, medical personnel, and, particularly, the ravages in the ranks caused by unchecked smallpox were major features of the pathetic American withdrawal to sanctuary at Fort Ticonderoga in July 1776. Although precise statistics are unavailable, about forty per cent (including many Pennsylvanians) involved in the Canadian campaign were killed, captured, or were incapacitated for months by smallpox, that "King of Terrors" as John Adams called it, during this disastrous adventure.<sup>4</sup>

Rampant sickness in the ranks was also a prominent feature in the fighting at lower New York during the autumn of 1776. Although Morgan made extensive hospital preparations, and for casualty evacuation at Manhattan, Long Island, and Fort Washington, and

3. John Hennen, *Military Surgery* (London, 1820), p. 30.

4. For a summary of the Canadian campaign, see Richard L. Blanco, *Physician of the American Revolution*, Jonathan Potts (New York, 1979), pp. 83-111.

although the army had the experience of the Boston siege in preventive medicine, the military, like the medical staff, were ignorant of the etiology of disease. Furthermore, Morgan's arrangements for removing the wounded had been untested in combat, and preparations to shift medical staff to crucial battle sectors were incomplete before the British landed in August. More significant was the fact that the Americans were invariably affected by environmental problems caused by the transformation of an eighteenth-century metropolis into a major military base. The torrid summer, the lack of rainfall, the enervating toil building miles of defenses, the prevalence of venereal disease, the polluted water supply, and the careless sanitary habits of the troops were all detrimental to the army's health.<sup>5</sup> The sheer exhaustion from weeks of work on entrenchments under a broiling sun weakened many troops even before the shooting commenced and left them targets for debilitating ailments. Even before the Royal Navy appeared in the harbor, an array of enfeebling diseases—typhus, dysentery, typhoid, and perhaps, malaria—had weakened Washington's army. In early August, over 6,000 men out of 17,000 were described as sick. At Harlem Heights on 8 September, nearly one-third of the Continentals was listed as unfit, and by early October at White Plains, Washington had only 12,000 capable for combat out of 20,000 troops.<sup>6</sup> Clearly, pestilence, as in the Canadian campaign, and the inadequacies of hospital facilities during the continued retreat before the inexorable enemy offensive diminished the army's effectiveness, and contributed to the plummeting morale of the troops.

During the retreat from the Hudson, Morgan's control of medical affairs virtually disintegrated, for as the Continentals dispersed to the Highlands, to Connecticut, and New Jersey, he lost control of his staff. Yet, the maligned Morgan—bitterly criticized for failures in medical care—performed his duties heroically, and he seemed to be everywhere—visiting the sick, operating on the wounded, supervising

5. For an account of the hygienic problems at New York City, see Morris H. Saffron, "Rebels and Disease: The New York Campaign of 1776," *Academy of Medicine of New Jersey Bulletin*, 13 (1967): 107-118.

6. Estimates are in Louis C. Duncan, *Medical Men in the American Revolution, 1775-1783* (Carlisle, Pa. 1931), pp. 130-136, 143, 148; and in a more precise form by Charles H. Lesser, *The Sinews of Independence* (Chicago 1976), p. xxxi.

the evacuation of men from Manhattan, and finding them shelter in Newark, Hoboken, Weehawken, and Hackensack.<sup>7</sup>

Yet the constant flow of sick and wounded overwhelmed his facilities located in homes, barns, churches, and schoolhouses; and Morgan again had to scatter his patients (especially after the loss of Forts Lee and Washington in early November) to Amboy, Trenton, Brunswick, Elizabeth, and Morristown. Some men ended up at Fishkill and Peekskill on the Hudson; others at Norwich and Stamford, Connecticut. Perhaps another dozen villages served as convalescent centers that winter as Morgan tried to protect his patients from capture by the triumphant redcoats. Commenting on the malignant effects of typhus on the defeated regiments, Surgeon James Tilton of Maryland lamented that the soldiers "fell like rotten sheep as they straggled home where they commuted the camp infection to their neighbors and friends of whom many died."<sup>8</sup>

By early December, wagonloads of sick reached Philadelphia where the frenzied inhabitants assumed that the enemy would soon cross the Delaware to destroy Washington's command. Heretofore, Pennsylvania had only been peripherally involved in army medical matters. In 1775, for example, civilian doctors had inspected the battalions of Colonels Anthony Wayne, Arthur St. Clair and William Thomson;<sup>9</sup> the Committee of Safety had prepared "hospitals" in the city jail and the poor-house;<sup>10</sup> and it urged patriotic ladies to contribute rags "for bandages and lint . . ."<sup>11</sup> But the state now faced its first medical crisis of the war. Inasmuch as Morgan—castigated alike by his subordinates, as well as generals and politicians—was unable to procure accommodations in Pennsylvania, Washington requested the Council of Safety in Philadelphia to assist and hoped that the city's civilian doctors would aid his hard-pressed surgeons.<sup>12</sup>

7. The best account of Morgan's difficulties is his *Vindication of His Public Character . . .* (Boston 1777), *passim*.

8. James Tilton, *Economical Observations on Military Hospitals* (Wilmington, Del., 1813), p. 25.

9. *Pennsylvania Archives*, 1st Ser., 4: 679, 695. (Hereafter cited as *Pa. Arch.*), and *Journals of the Continental Congress*, 34 vols. (Washington, 1904-37) 4: 229, 271.

10. *Records of Pennsylvania's Revolutionary Governments, 1775-1790*, Roll 10, ff. 327, 364, 369, 373, 390, 394. Hereafter cited as *Records*.

11. *Ibid.*, f. 729.

12. John C. Fitzpatrick, *The Writings of George Washington from the Original Manuscript Sources, 1745-1799*, 39 vols. (Washington, D.C., 1931-1944), 6: 327-328.

On 4 December, Dr. Thomas Bond, Sr., of the Pennsylvania Hospital, pondering how his own son—serving as a regimental surgeon in Jersey—could transport wounded over bumpy roads to the Delaware, appealed to the Council to prepare for the emergency. He suggested “that some able, judicious, and experienced persons be empowered to find proper places for supplying [the wounded] with all [the] conveniences which Art and Humanity can provide . . .”<sup>13</sup> Acting promptly, the Council created a Committee of Sick and Wounded Soldiers under the leadership of Christopher Marshall, a leading apothecary, and requested the Committee to find quarters at the Pennsylvania Hospital, the Bettering House, the smallpox hospital on Pine Street, and at various homes and stores vacated by Loyalists. The Committee further advised Marshall to “provide without delay thirty houses for the reception of the sick and wounded, and to lay in wood and straw in sufficient quantities,” and it appointed Dr. Jonathan Potts of nearby Reading to supervise the treatment of the patients.<sup>14</sup> As the directives to regimental commanders stated, officers in charge of sick details were “directed to make returns to Dr. Jonathan Potts at Mr. John Biddle on Market Street of the number and places of residence that proper care may be taken of them.”<sup>15</sup>

How many invalids were sheltered in the City of Brotherly Love during the winter of 1776-1777 is uncertain—perhaps five hundred in December, and over one thousand in January. Private Henry Hallows of Massachusetts and six sick companions found a spartan haven there. The rapid movement over the Delaware, he remembered, “was so sudden . . . [that]small preparation was made for the sick . . . My lodging was a hard floor day and night, and no nurse at first and not more than the Continental allowance [the standard food ration].” But with the aid of some concerned women who provided him tea, sugar and a bed, he managed to survive the ordeal. Yet, without clothing changes for weeks, he recalled, “I got very lousy and flesh much gone.”<sup>16</sup>

13. *Pa. Arch.*, 1st. Ser. 5: 78-79.

14. *Records*, Roll 11, ff. 401, 481; Thomas Wharton to Jonathan Potts, the *Jonathan Potts Papers*, Library of Congress; Wharton to Potts, the *Jonathan Potts Papers*, f. 139, Historical Society of Pennsylvania. Hereafter cited as *P. P.*

15. William Duane, ed., *Extracts from the Diary of Christopher Marshall Kept in Philadelphia and Lancaster During the American Revolution, 1774-1781* (Albany 1877), p. 295.

16. Cited by Howard Kendell Sanderson, *Lynn in the Revolution* (Boston, 1909), pp. 156-157.

Typhus killed innumerable soldiers that winter in eastern Pennsylvania. Regardless of the Sick Committee's efforts to provide doctors, nurses, and "Necessaries," for the patients, the city was incapable of handling such hordes of emaciated, vermin-ridden men, and it was unable to feed, cloth or even to provide adequate fuel for them.<sup>17</sup> "Great numbers were sent to the House of Employment," explained Marshall on 17 January 1777 "who died so fast that we were greatly importuned to remove them and accordingly brought from there more than two hundred of the Third Virginia Battalion. Upwards of 1100 sick soldiers have come under our notice from the beginning and some hundreds whom we cannot so well account for."<sup>18</sup> Shocked by the daily sight of carts laden with dead, Nancy Shippen of Philadelphia exclaimed: "It is too dreadful a scene to attempt to describe. The poor creatures died without numbers . . . The well soldiers are quartered on private families."<sup>19</sup> And John Adams, a delegate to Congress, claimed that by the spring of 1777 over 2,000 troops had been buried in Potter's Field.<sup>20</sup>

So many incapacitated men were hauled over the Delaware in December that other locations were needed. About three hundred patients were scattered to Easton, Allentown, Northampton, and Wilmington. Another seven hundred were hauled to Bethlehem, which, after Philadelphia, became the second largest convalescent center in the state. The Moravians of Bethlehem, under the leadership of Bishop John Ettwein, had quietly indicated their neutrality in the war, although the commune's donation of linen for Pennsylvania battalions in April 1776 had been gratefully acknowledged by the Council of Safety.<sup>21</sup> But in September, the village was suddenly immersed in the war when two hundred British prisoners were temporarily halted there, and when seven hundred wagonloads of Continental stores jolted through the tiny community. "In a single night," complained Ettwein, "they destroyed our buckwheat and fences."<sup>22</sup> Now the United Brethren were confronted by ragged

17. *Records*, Roll 11, f. 645.

18. *Ibid.*, Roll 11, f. 1028.

19. Ethel Ames, *Nancy Shippen, Her Journal Book* (Boston, 1909), pp. 156-157.

20. Lyman H. Butterfield, ed., *The Diary and Autobiography of John Adams*, 5 vols. (Cambridge, 1961-1966), 2: 209.

21. *Records*, Reel 10, f. 486.

22. Cited by Kenneth Gardner Hamilton, *John Ettwein and the Moravian Church* (Bethlehem, Pa., 1940), p. 173.

hordes of invalids who invaded their peaceful hamlet. Needing a center with large buildings, Congress ignored the sect's protests and on 6 December, cartloads of sick arrived at the single Brethrens' House, which became, Ettwein stated, "a sewer of impurities."<sup>23</sup> Bethlehem is particularly important as the first religious settlement in the province known to have been commandeered as an army hospital, and because of the fearsome twenty-five per cent mortality rate that occurred there by March 1777. Luckily for the patriots, General William Howe had halted the advance of troops under Lord Cornwallis by mid-December 1776, and Pennsylvania and its crammed hospitals were safe from invasion that season.

The Philadelphia area soon had a vital role as an inoculation center for the army. After his surprising victories at Trenton and Princeton, Washington made his headquarters at Morristown where he recommended to Congress in early 1777 that troops in his command be inoculated. From February through May, Dr. William Shippen, Jr., a prominent Philadelphia physician who had replaced the disgraced Morgan as Director General, supervised the variolation procedures—the inoculation itself; the diet of corn meal and rice; doses of niter, calomel and several cathartics; and a "cleansing" of uniforms by washing and smoking them—at Province Island and Fort Island in the Delaware, and at nearby Germantown. In late January, Shippen assured Washington about the precautionary measures underway, adding, "The houses where [the troops] are kept, are out of town strictly guarded and no patient is suffered to remain a minute in the City with the Smallpox . . . and the Hospital on Province Island shall be the receptacle for all hereafter infected."<sup>24</sup> Similar efforts took place at other mobilization centers from Boston to Alexandria, Virginia, but, undoubtedly, more troops were inoculated around Philadelphia than at any other area that year. As Shippen later wrote to Dr. Michael Wallace, a colleague in Annapolis, "Your [Maryland] men are patiently look'd for—1000 can be accommodated at Germantown and as many in the environs of ye City. Let me know a few days before they come."<sup>25</sup> Mass inoculation

23. Ibid.

24. Shippen to Washington, 31 January 1777, The George Washington Papers, Reel 39, Library of Congress. Hereafter cited as *G. W.*

25. Shippen to Wallace, [April?] 1777, Revolutionary War Collection, Maryland Historical Society.

of the army was quite effective. Although the case death rate caused by the natural contagion averaged sixteen per cent for the seaboard population, the mortality rate for Washington's army that underwent supervised inoculation that year was under one per cent.<sup>26</sup> Although thousands of Continental and militia had to be inoculated in the future, the program of early 1777 was a success. The adoption of mass inoculation eliminated a major obstacle to recruiting, and in the spring, thousands of men converged on the Delaware to join Washington's pox-free army.

Pennsylvania next served as a major military medical haven in late 1777 when Howe invaded the Chesapeake with the intention of marching onto Philadelphia and ending the war. Medical preparations for the battle of Brandywine (11 September) were deplorable. Typical of military medicine in eighteenth-century warfare, Shippen maintained the traditional regimental hospitals (temporary shelters close to the line staffed by a surgeon and his mate), field or "flying" hospitals (located behind the lines and supervised by medical department surgeons), and general hospitals (situated in villages supposedly remote from combat sectors and administered by physicians). Yet Shippen was unable to provide sufficient drugs, surgical tools, or personnel. Captain Samuel Dewees of Maryland left a graphic description of how the wounded were summarily dumped at a Quaker meeting house near the battlefield: "To hear the wild and frantic cries of the wounded, the groans and cries, and . . . to see them all covered with blood . . . running in numerous places from the wagons and bodies was enough to chill the blood in the warmest heart."<sup>27</sup>

After the fighting, five hundred casualties were moved to nearby towns—Burlington, Bethlehem, Northampton, Philadelphia, Trenton, Wilmington—and to smaller settlements like Trappe, Hanover, Skippack, Evansburgh, Lancaster, Falkner's Swamp, and Pennypacker's Mill. Reverend Henry Muhlenberg, the patriarch of Lutheranism in America, noted the confusion in handling casualties. He remarked that the wounded poured into Philadelphia after Brandywine, and that "the church at Reading has been turned into

26. Hugh Thursfield, "Smallpox in the American War of Independence," *Annals of Medical History*, 3rd Ser., 4 (1942): 312-38, p. 316. Hereafter *Ann. Med. Hist.*

27. Cited by John Smith Hanna, *A History of the Life and Services of Captain Samuel Dewees* (Baltimore, 1885), p. 95.

a hospital and is filled with wounded." Many other men, Muhlenberg added, were quartered "in houses here and there."<sup>28</sup> In an exchange of letters characteristic of contesting generals who tried to maintain their urbanity amid the carnage of battle, Washington and his adversary Howe corresponded about the care of some American wounded who fell into British hands. On 13 September, Washington sent Dr. Benjamin Rush of Philadelphia, destined to be America's foremost physician of the era, and a small staff to treat patriots held by the enemy at Dilworth. On 21 September, Howe advised Washington to send additional doctors to an unnamed British sector, "there being some wounded officers and men of your Army at Howel's Tavern, and the neighbouring houses . . ."<sup>29</sup>

In a repetition of the 1776 campaign, the Pennsylvania Hospital, the Bettering House again were used. When Howe threatened to capture the city, Shippen planned to transfer his charges from the capital to safer locations. Shippen's problem of protecting his patients in Jersey locations was complicated by his own reluctance to transport disabled men in open carts over bumpy roads, by Washington's uncertainty about strategy, by the continual movements of the Continental army, and by the constant flow of wounded from the besieged fortresses at Red Bank, Fort Mercer, and Fort Mifflin on the Delaware. Even after his defeat at Germantown on 4 October, in which the patriots suffered another six hundred fifty casualties, Washington contemplated still another attack in early November. Not until 12 December, in fact, did Washington order Shippen to evacuate the Trenton and Princeton hospitals to safer areas such as Easton, informing him that "we must always keep the sick in the rear of the Army, or they will be subject to captivity."<sup>30</sup> Due to the fluid nature of the campaign, the large number of casualties, and the lack of sanctuaries for the sick and wounded, preparations for their reception were disastrous. Never before had Pennsylvania been confronted by such masses of helpless men, nor did the state possess the quarters to house them. The British held Philadelphia and its large buildings, the Continentals were severed from many routes to the

28. Henry Melchior Muhlenberg, *Journals*, trans. by Theodore G. Tappert and John W. Doberstein, 3 vols. (Philadelphia, 1945), 2: 82-84.

29. Washington to Howe, 13 September 1777, and Howe to Washington, 21 September, *G. W.*, Reel 44.

30. Fitzpatrick, 10: 150.

Delaware, which complicated not the housing but supply problems, and the province had few areas where casualties could be properly quartered.

Under these circumstances, Shippen again had to occupy Bethlehem. On 18 September, he informed Ettwein that the army desperately required some havens. "It gives me great pain to be obliged by order of Congress to send my sick and wounded soldiers to your peaceful village, but so it is. We will want room for 2,000 at Bethlehem, Easton, and Northampton . . . I am truly concerned for your Society and wish sincerely that stroke could be averted but 'tis impossible."<sup>31</sup> By 24 September, carts of wounded were dumped in the settlement. In early October, the three-storied Brethrens' House—which had a capacity for 360 patients at four feet of space per man—was crammed. When this edifice was packed, additional wounded were placed in nearby tents and barns. "It seemed as if the world would engulf us," wailed Ettwein. Just as the doctors were about to seize the Widows' House and the Single Sisters' House for their patients, Ettwein convinced sixteen delegates temporarily residing in the village, to designate these female sanctuaries as "off limits." As the Congressional order, penned by Henry Laurens of South Carolina, read on 22 September, "We desire that all Continental Officers refrain from disturbing the Persons or Property of the Moravian Brethren, and particularly that they do not disturb or molest the Houses where the Women are assembled."<sup>32</sup> By October, about 500 patients were housed in Bethlehem, a hamlet with a normal population of 300, and by December 700 men were quartered here. The medical staff was so overwhelmed with patients that Dr. Moses Scott, the supervisor, was unable to keep records of admittance. Ettwein noted that facilities were so crowded that newcomers were moved to Easton. Many of the soldiers, he commented, "came here in rags, swarming with vermin, while others during their stay, had been deprived of their clothing by their comrades."<sup>33</sup> In such unsanitary

31. Cited by John W. Jordan, "The Military Hospitals at Bethlehem and Litz During the Revolution," *Pennsylvania Magazine of History and Biography*, 12 (1888): 405.

32. Hamilton, pp. 174–175.

33. Cited by James M. Beck, *Bethlehem and the Military Hospitals*, Bethlehem, Pa. (1897), p.13.

conditions, in which filthy, emaciated men shivered in tattered uniforms, typhus struck. Medical men were among its victims. Ten of the eleven surgeons at Bethlehem caught the contagion, and three died. By the spring of 1778, at least three hundred patients had perished in the little village, and Bethlehem ironically maintained its unwholesome reputation for its supposedly inhuman treatment of suffering soldiers.

By late October, the army established additional convalescent centers at Easton, Mannheim, Lancaster, Allentown, Rheimstown, Sheafertown, and Buckingham. Then Lititz, another Moravian commune, was occupied on 19 December, and Ephrata, belonging to the Seventh Day Baptists, on 24 December. Although scores of men were left in private homes, such places were usually too small and often too isolated to be more than temporary quarters. Barns were spacious, but they were damp and dirty. Churches at least had pews for beds, but they were usually cold and poorly ventilated. As Washington scribbled a dispatch on 25 September from Pennypacker's Mill to Surgeon Samuel Kennedy of the Fourth Pennsylvania Regiment, he added, "If you are obliged to make use of churches or houses that have no fire places you should purchase stoves to make them warm and comfortable."<sup>34</sup> Taverns and schoolhouses were frequently used, even though their rooms were often cramped. But in the frenzy to house the sick, such inconveniences were disregarded, and even a shoe factory was used. In Reading, for example, accommodations for sixty-nine soldiers and their six female nurses were found in the Court House, the Trinity Church, the Reformed Church, the Friends' Meeting House, the Potter's Shop, and various residences.<sup>35</sup>

Unfortunately, conditions at these locations were deplorable. Casualties were moved long distances in pelting snow and sleet, and were provided wretched attention at their destinations. Placed on the sick list at Gulph Mills on 16 December, Private Elijah Fisher remarked that he was first hauled to Reading, "but when we came there the sick belonging to the other regiment had taken it up so we

34. Washington to Kennedy, 26 September 1777, Revolutionary War Collection, Berks County Historical Society, Pa.

35. Francis Alison, Jr. A List of Soldiers and Attending Nurses . . . , 17 November 1779, M-29-25, Library of the College of Physicians of Philadelphia.

was sent to Dunkertown [Ephrata] to the hospital there.”<sup>36</sup> At Ephrata, on Christmas Eve, recalled Joseph Kimmel, an inhabitant, “the troops arrived in open wagons at night time, almost naked, many of them without shoes, stockings or blankets to cover them. Neither were they accompanied by nurses or other attendants, and left there by the waggoners . . .” Hans Baer, Ephrata’s miller, testified that his parents died from “camp fever” transmitted by the troops and that “the disorder raged through the neighborhood and proved fatal to a great number of all ages.”<sup>37</sup> Another horror was Lancaster where Captain Charles Lloyd recalled that with 500 others, he spent six weeks on cold floors without straw or covering.<sup>38</sup> Lititz, which received the overflow from Reading, became another Bethlehem. In mid-December, it had eighty patients. By 1 January 1778, 260 men were packed into its tiny wards; 120 men, 5 nurses and a local pastor died there from typhus that winter. About 2,800 soldiers were quartered in these hospitals that season and perhaps another 2,000 were dispersed elsewhere over the state. The prevalence of disease undoubtedly contributed to the demoralization of the army. Over seventeen percent of the troops were listed as sick in October, twenty-five percent in November, and when the army trudged off to Valley Forge in late December, thirty-two percent of Washington’s men—sick present and sick absent—was listed as unfit for duty.<sup>39</sup>

By mid-January 1778, the stream of patients was such that additional hospitals had to be established at Red Lion (Lionville), French Creek, Uwchlan, and Yellow Springs. Ignoring local protests, army officers seized any available shelter. Muhlenberg noted that the Lutheran and Reformed Churches in Lionville were filled with casualties. “Yea, they even filled the parsonage, and afflicted [the ministers] with all kinds of persecution because [they] publicly refused to pray for Congress. . . .”<sup>40</sup> The minutes of the Quaker Meeting House at Uwchlan contains this dramatic passage: “The key of the meeting house was demanded by some of the physicians of the Continental

36. Cited by John B. B. Trussell, Jr., *Birthplace of an Army—A Sketch of the Valley Forge Encampment* (Harrisburg, Pa., 1976), p. 41.

37. Cited by George L. Heiges, “Letters Relating to the Continental Military Hospitals in Lancaster County,” *Lancaster County Historical Society Papers*, 52 (1948): 94.

38. *Ibid.*

39. Lesser, p. xxxi.

40. Muhlenberg, 2: 93.

Army. . . . The Friend who had care of the house refusing to deliver it, forcible entry was made into the house and stable.”<sup>41</sup>

Dysentery, for which no adequate remedy existed, caused havoc in the ranks, but typhus was the great scourge of the army. Many men hospitalized for respiratory and other ailments caught it from their bedfellows. “Many a fine fellow have I seen brought into the hospital for a slight syphilitic affliction,” Surgeon Tilton remarked, “and carried out dead of a hospital fever.”<sup>42</sup> Inasmuch as doctors were unaware of the scientific treatment of the contagion, newcomers to a ward were provided the same straw and linen—along with the ever-present lice—of recently deceased patients. Rush noted how frequently men with pneumonia were struck by typhus. “Whenever a hospital was removed in winter, one half of the patients generally sickened on the way, and soon after their arrival to the place where they were sent. There were many instances of patients with slight sicknesses,” he continued, “who suddenly fell dead after being removed from a hospital.”<sup>43</sup> But under the prevailing therapy of the day—which consisted of bleeding, blistering and purging the patient and providing him with wine, Jesuits’ bark, and tartar emetic—the physicians were virtually helpless to stem the contagion. If the hospitals had been heated, cleaned and provisioned, some of the destruction caused by the pestilence may have been averted. On 12 November, Shippen pleaded with the Committee of Safety for “an immediate Supply of Cloaths, so absolutely requisite for the very existence of the sick now in great distress in the Hospital . . .”<sup>44</sup> And two days later, the Director wrote a similar note to Washington: “The suffering of sick soliders for want of Blankets—Eight Loads of these are passing through this place [Bethlehem] for camp [sic]. Will you send an Order Sir by the Express to the Waggoners to send two loads of them back to Bethlehem. I know how much your Army wants them; but your sick and wounded soldiers lay naked. Putrid fever are creeping in among us for want of cloaths and I dread the consequences of not being quickly supplied.”<sup>45</sup> Complaints about shortages of food, straw,

41. Cited by James E. Gibson, *Bodo Otto and the Medical Background of the American Revolution* (Springfield, Ohio), p. 153.

42. Tilton, pp. 14-15.

43. Benjamin Rush, *Medical Inquiries and Observations*, 2 vols. (Philadelphia, 1794), 1: 258.

44. *Records*, Reel 13, f. 147.

45. Shippen to Washington, 14 November 1777, *G. W.*, Reel 45.

bedding, medicine, and clothing (for which the disintegrating Commissary and Quartermaster departments shared the blame) fill the contemporary literature as the medical department was again denounced for contributing to the heavy incidence of sickness and death. Under a torrent of invective for his reputedly inept and callous administration of army hospitals, in February 1778, Shippen was subjected to a Congressional investigation of his conduct. But due to insufficient evidence produced by his enemies, led by Rush, his former student, and Morgan, his old professional rival, Washington's support of Shippen, and the Delegates' hesitation to embroil the already tottering department in further controversy, Shippen was exonerated of the charges.

Yet, during Shippen's trial at York, and while the army struggled to survive that bleak winter at Valley Forge, the military and medical men attempted to improve the health of the troops, and to ameliorate hospital conditions. During the hasty construction of the encampment, little attention was paid to the proper disposal of waste, latrine conditions were primitive, and few facilities existed for bathing and washing. Although not as harsh as the Morristown winter of 1779-1780, the weather permitted few hygienic practices. Horses died by the hundreds, and their carcasses lay unburied for weeks. In an effort to cleanse the camp, Washington repeatedly ordered that brigade commanders inspect quarters frequently, that the soldiers use privies, and careless men who disregarded this injunction be punished. Linked to this attention on sanitation was the general regeneration of the dispirited troops through superior training—a process in which Baron von Steuben stood as an inspiring force. Best remembered for instructing recruits in musketry, the bayonet and in the manual of arms, Steuben also stressed the necessity of hygienic measures. He urged that the troops pride themselves on their personal cleanliness, and that officers consider the welfare of their men.

The increased attention devoted to such matters at Valley Forge was matched by efforts of the medical staff to improve the health of regiments. Although a poorly provisioned army or fleet in the eighteenth century was usually stricken by scurvy, little information about the extent of this vitamin-deficiency malady is extant in the evidence, except a document citing a shipment of two barrels of lime-juice to the site in April.<sup>46</sup> A more serious problem was scabies,

46. ? to Potts, *P. P.*, f. 415.

resulting from the scarcity of soap, inadequate washing facilities, and infrequent clothing changes. In early January 1778, Baron deKalb, another German mercenary, noted, "Our men are infected with the itch . . . I have seen the poor fellows covered over and over with the scabies."<sup>47</sup> The treatment for the affliction was that the men were isolated in separate barracks, where they cleansed themselves and applied a mixture of sulphur and hog's lard to their skin. Another common problem was venereal disease, but how widespread it was is difficult to determine, particularly because Congress imposed a fine on officers and men known to have the ailment. Consequently, most men suffered in silence, or they tried to secure mercurial ointment from sympathetic surgeons. Smallpox was still a threat, for most recruits entering the encampment had not been inoculated. Due to delay in obtaining drugs and hospital foods, mass inoculation was delayed until early April. Although hundreds of men on foraging parties, isolated outposts, and in general hospitals had not been treated by June, the program—probably the largest undertaken during the war—was successful, and out of some four thousand men inoculated at Valley Forge, only ten perished. Albigenice Waldo of the First Connecticut Infantry noted on the fly leaf of his surgical textbook the following:

"While the American Army lay in Winter Quarters at Valley Forge in Pennsylvania at the opening of the Spring, about four thousand officers and soldiers were inoculated with the Small-pox, where they had little else but beef and flour for regimen, and their preparation (i.e. the drug dosage) was almost universally that of Tartar Emetic and Jalap only . . . The success was remarkable, and but few died, and those chiefly with a second fever would turn putrid principally owing to the fatigue of the proceeding campaign and unwholesome provisions for which the Campaign of 1777 was remarkable."<sup>48</sup>

Hospital conditions at Valley Forge during the first months were shocking. General Wayne even declared that he would rather fight the British under great odds than be required to inspect camp hospi-

47. Cited by Frederick Knapp, *The Life of John Kalb* (New York, 1870), pp. 136–140.

48. Albigenice Waldo's copy of Samuel Sharpe, *A Treatise on the Operations & Surgery . . .* (London, 1769), Trent Collection, Duke University Medical Center Library.

tals.<sup>49</sup> The army retained the traditional regimental hospital system at the camp, but Washington and Dr. John Cochran of New Jersey, Chief Surgeon of the Flying Camp, framed regulations for the location, construction and furnishings for two flying hospitals for each brigade. Furthermore, doctors were admonished to inspect their sick more frequently and not to move them long distances to overcrowded general hospitals. The medical staff tried to feed the sick with special diets by making determined efforts to supply the base and outlying hospitals with rice, sugar, milk, barley, Indian meal, port and Madeira wine, and on rare occasions even with beef. The regimental and flying hospitals at Valley Forge contained 1,500 men in January 1778, 3,000 in February, and due to inoculation, about 3,800 in April and May. About 2,200 men supposedly perished at Valley Forge, but few graves have been discovered, and apparently no central burial ground existed.<sup>50</sup> On 17 June, when Washington broke camp as the British began to withdraw from Philadelphia, some 2,800 troops remained sick at the camp, and another 2,000 in the general hospitals.

If contrary to traditional military practice, the regimental and flying hospitals in the camp held most of the sick, what then was the function of the general hospitals? Administrative control of these far-flung units at first was ineffective. Doctors were uncertain of the number of patients, some men deserted the wards for home, medicine and linen were scant, guards stole clothing from helpless inmates, and orderlies—who often overindulged in wine intended for their patients—neglected their duties. Andrew Chapman, a Connecticut surgeon serving at Ephrata, that had only ten blankets for one hundred eighty patients in early February, “found them [the hospital] all in confusion, for nobody could give any particular account of the Dead Men’s Cloathes . . .”<sup>51</sup> Washington was so distressed by such reports that on 30 January he ordered two brigade commanders to restore order at these hospitals, to curtail the number of desertions, and to compile data about the number of inmates. Alexander

49. Cited by William S. Middleton, “Medicine at Valley Forge,” *Ann. Med. Hist.*, Ser. 3, 3 (1941): 483.

50. Ricardo Torres-Reyes, *1779–80 Encampment, A Study of Medical Services*, (Washington, 1971), p. 30.

51. Chapman to Theodore Woodbridge, 29 January 1778, Theodore Woodbridge Papers, Connecticut Historical Society.

Scammel, the Adjutant General, wrote detailed instructions for regimental colonels concerning the transfer of sick to these places, but the only surviving commentary made of an inspection was completed in late April by General Lachlan McIntosh of North Carolina.<sup>52</sup> Due to the confusion in the transfer of casualties in late 1777, few doctors could provide McIntosh with sufficient information. The Carolinian admitted that he was uncertain about when some locations had opened, about how many patients had been treated, or even about how many soldiers had died or deserted. Only Reading had records since 18 September, Ephrata since 24 December, and the rest—although most of them had functioned since October—had accounts that began only in January or February 1778. At Allentown, occupied since the early autumn, McIntosh discovered “no account of the general hospital can be found before 10 March,” Tallying his somewhat unreliable figures, the general reported to Washington that since October 1777, the general hospital in Pennsylvania had treated 3,612 patients. Of this number about 2,000 had been returned to duty, 690 had died or deserted, and 910 remained. Half the patients in the wards, McIntosh stressed, “were disabled by old wounds and chronic disorders . . .” and he recommended that they be discharged.<sup>53</sup>

The number of general hospitals in January 1778 remained the same during the spring, and no additional units were established thereafter. These structures occupied temporary and requisitioned quarters. Yellow Springs, however, was different. Yellow Springs was a famous pre-Revolutionary health spa where Philadelphia physicians had sent patients to nurse their ills in the bubbling mineral waters.<sup>54</sup> In September 1777, American troops camped there briefly, and Washington wrote hurried dispatches from its tavern. In late December, the inns and barns there were used as hospitals. Requiring a more permanent building to house the seriously ill, on 3 January 1778 Washington ordered the erection of a three-story building at Yellow Springs with broad porches and with kitchen and bathing

52. Scammel to Washington, January 1778, *G. W.*, Reel 47.

53. McIntosh to Washington, 19 April 1778, Revolutionary War Papers, Item 135, f 10, National Archives.

54. See Carol Shiels Roark, “Historic Yellow Springs: The Restoration of an American Spa,” *Pennsylvania Folklife*, Autumn (1974), pp. 28–38.

facilities. Construction began in March, and the hospital was completed in August. In contrast to the unhealthy reputation of Bethlehem and Lititz, Yellow Springs had a better record. On 13 May, Washington visited it to console the sick. With him was Dr. James Craik, his fellow Virginian, who reported that the Commander-in-Chief found the wards were in excellent order. "He spoke to every person in their bunks," Craik remarked, "which pleased the sick exceedingly."<sup>55</sup> By August, some 1,300 patients had been treated here, of which 445 were discharged, 124 died, and 725 remained. Although Fort George on Lake George, New York was the largest military hospital of the war with about 1,500 patients in July 1776,<sup>56</sup> Yellow Springs was the largest military hospital in Pennsylvania—probably slightly larger than Bethlehem at its peak—and it was the first and only army hospital built by congressional order during the Revolution.

The improvement of hospital services in Pennsylvania was part of the general reorganization of provincial forces into a national army that transpired at Valley Forge. After a dismal winter beginning, the medical department gradually began to function more effectively. Medical chests were filled with imported drugs, the quantity of medicine and instruments was standardized, apothecaries manufactured some chemicals at Carlisle and Yellow Springs (such as Glauber's Salts, castor oil, and cream of tartar), inventories of stores were kept, registers of sick were maintained, the transfer of convalescents proceeded more efficiently over improved roads (due to the diligence of General Nathanael Greene, the Quartermaster),<sup>57</sup> thousands of men were inoculated, and officers and men were indoctrinated in hygienic matters. As Shippen reported from Mannheim to Washington on 13 April 1778:

From the most exact accounts, Dr. [Willaim] Brown, the Physician General and myself have been able to collect the number of our deaths [does not] exceed 1000 or 1100 men since April 1777, which considering our want of necessarys which were not

55. *P.P.* f. 467.

56. Unsigned Return, July 1776, Fort George, Unbound Manuscripts, Massachusetts Historical Society.

57. Greene to Charles Petit, April 1778, Joseph Reed Papers, New York Historical Society.

to be purchased. The necessity we went under to move our sick in the most inclement weather more than 100 miles with many other distressing circumstances, among none is more shocking than hard duty and great fatigue these poor, naked brave fellows performed and suffer'd during a long and active Campaign and severe winter.<sup>58</sup>

After General Henry Clinton, who replaced Howe, crossed the Delaware *en route* to New York, and after the battle of Monmouth (23 June 1778), Pennsylvania was no longer the major theater of war that it had been for two years. The struggle now became a virtual stalemate in the north. After encamping around Manhattan in the fall, Washington shifted most of his troops to Middlebrook, New Jersey for the winter. With the exception of Yellow Springs, and a few invalids in the Pennsylvania Hospital, the other units in Pennsylvania were closed. With the termination of sustained combat and maneuvering for the year in the Middle States, the heavy incidence of disease in American regiments tapered off.<sup>59</sup> Henceforth, the British concentrated on recovering the southern colonies.

Pennsylvania's experience with army hospitals and with masses of soldier patients was unique for the war and unmatched by any other province. No other northern state was required to harbor so many casualties and to provide so many hospitals for a comparable period. In the south—even taking into account the sieges of Savannah and Charlestown, and the guerilla warfare waged by Greene—only Virginia in 1780–1781 had some small hospitals, and only Williamsburg, which quartered seven hundred American and French casualties during the battle of Yorktown could be considered a large hospital for the era.

Placed within another context, were the attitudes in Pennsylvania to the army's plea for aid—responses ranging from total assistance to passive acceptance of the sick, to outright hostility toward troops in an area—unique compared to other colonies? Perhaps one rough indication of an area's commitment to the patriotic cause, or its lack of medical sophistication (as in inoculation matters) could be demonstrated, imprecisely, by a community's willingness to shelter American casualties, but such evidence is sparse. If some Pennsylvanians

58. Shippen to Washington, 13 April 1778, *G. W.*, Reel 48.

59. Lesser, p. xxxi.

protested about the commandeering of their property for army hospitals, such dissent seems to have been limited to pacifist religious groups.

Documentation on this elusive topic is limited, but some tentative observations can be made. In other colonies, the defense of property rights, or the fears of pestilence sparked some opposition to the army's efforts to locate hospitals. If places like Philadelphia, Boston, Albany, New Haven, Annapolis, and Charlestown to cite a few, made commendable efforts to assist Continental casualties, there were other areas which refused to cooperate in such matters, or they did so quite reluctantly; and Loyalism seems not to have been the dominant factor. The town fathers of Newark and other Jersey locations inhibited Morgan's efforts to shelter his sick.<sup>60</sup> The owners of a school in Fishkill protested bitterly about the supposed destruction of their classrooms by wounded men,<sup>61</sup> as did the proprietors of an academy in Wilmington, Delaware.<sup>62</sup> The Committee of Safety of Watertown, Massachusetts refused to permit soldiers to be inoculated within its jurisdiction,<sup>63</sup> and the tiny hamlet of Hanover, New Hampshire penned a lengthy letter to Washington indicating its terror of having sick troops quartered there, due to the possible destruction of crops and livestock.<sup>64</sup> The trustees of William and Mary College early in the war prevented the use of campus buildings for sick troops.<sup>65</sup> Likewise various hamlets in Maryland and Virginia voiced their opposition to having troops inoculated nearby.<sup>66</sup> If the defense of private

60. John Morgan, *The Memorial and Representation of Dr. John Morgan* (Fishkill, 1777), pp. 12-13.

61. Charles McKnight to General William Heath, 7 December 1776, The Heath Papers, Massachusetts Historical Society.

62. Trustees to ?, Wilmington, 5 February 1780, *Papers of the Continental Congress*, Roll 56, Item 42, Vol. 2, f. 16, National Archives.

63. John Avery to General Artemus Ward, 4 July 1776. The Artemus Ward Papers, Massachusetts Historical Society.

64. Petition of Citizens of Hanover to General George Washington, 12 February 1777, *G. W.*, Reel 40.

65. *The Proceedings of the Convention of Delegates Held at the Capital at Williamsburg*, 15 June 1776 (Richmond, 1816), pp. 388-390.

66. Clues are in the Executive Letter Book, 1780-81, the War Office Letter Book, 1778-80, and Col. Christian Febiger's Orderly Book, 1777-82, *passim.*, Virginia State Archives; see also William Smallwood Papers, *passim.*, Maryland Historical Society; and Mss. 3920, 12,217,25,179, etc., The Era of the American Revolution Papers, (Maryland) Hall of Records.

property rights, and the fears of pestilence were major themes in these examples, perhaps the best indication of such attitudes is demonstrated in the correspondence by Dr. Craik with Washington in 1780 about his frustrated attempts to obtain permission from the leaders of Providence, Rhode Island, solidly patriotic, to establish hospitals for the seamen and soldiers of the French fleet.<sup>67</sup> Within this broader perspective, it appears that the Pennsylvanians' responses to the medical crisis and the war may have been typical, perhaps even more humanitarian than other states during the Revolution.

67. Craik to Washington, 6 June, 21 June, and 7 July 1780. *G. W.*, Reel 67.

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