

Military Hospitals on the Frontier of Colonial America

David R. Starbuck

Health care in 18th-century America was radically different from today, and one of the greatest contrasts is in the role played by hospitals. The 18th-century hospital was a rarity, except in urban settings such as New York and Philadelphia where the poor needed inexpensive, readily accessible health care and could not afford to get it at home. In most cases, though, physicians saw patients in their homes, and only travelers needed medical facilities of a more institutional nature.

There was, however, one category of hospital that appeared with some frequency in the second half of the 18th century: the military hospital. While these facilities performed an essential function in treating soldiers and officers in the field, the mortality rate was so high that soldiers may have had a better chance of recovering by remaining in their huts and barracks. Military hospitals necessarily varied in the comprehensiveness of their services, ranging from mobile “flying hospitals” to the more permanent regimental hospitals and General Hospitals that housed substantial numbers of patients with fevers, dysentery, infectious diseases such as measles, and injuries of all types. Most such hospitals were in use for no more than a few months, or the space of a single campaign. Military doctors who owned a well-stocked medicine chest might have such therapeutic instruments as scalpels, amputation knives and

saws, lancets and other bloodletting instruments, forceps, scissors, bullet probes, and bullet extractors. Medicines were so difficult to obtain during both the

French and Indian War and the American Revolution that physicians often spent more of their time searching for medicines than doing any actual healing.

One type of military hospital was somewhat more specialized; this was the smallpox hospital which served to isolate highly contagious patients. Soldiers who contracted smallpox in the 18th century were typically sent to central hospital facilities, such as Fort George in Lake George, New York, where as many as 3,000 soldiers lay dying in July of 1776. There was not a stan-

dardized design for military hospitals, and it appears that the smallpox hospital of the 1750s and 1770s was little more than a large, open barn that provided fresh air and perhaps a bed of straw for its patients. There was no cure for smallpox until Edward Jenner’s cowpox vaccine in the 1790s, even though quite a variety of opium-based medicines were available for treating other ailments. (See box on Smallpox in the 18th Century.)

Fort Edward, and the adjacent Rogers Island . . . , was home to 15–16,000 soldiers in the late 1750s, briefly making it the third-largest city in America

RESEARCH AT MILITARY HOSPITALS

Unfortunately, little historical documentation survives for these enigmatic temporary hospitals, and in



FIG. 1. Eighteenth-century military sites along the corridor from New York City to Canada. The most extensive hospital complexes were located at Fort Edward and Mount Independence, but even the smaller encampments typically had temporary hospitals. Map prepared by J. Edens, after author's original

1985 this prompted me to begin what has now become a 12-year search for the archaeological remains of military hospitals. It was in that year that I excavated the site of the American Headquarters at the Saratoga Battlefield (now Saratoga National Historical Park). However, a determined effort to find the adjacent American Field Hospital revealed only small clusters of stones that *may* have been the corners for a post-type barn. While the American hospital is known to have briefly occupied a barn that existed both before and after the Revolution, the failure of our excavation to turn up any medical supplies increased my resolve to find a more intact hospital site that still retained evidence for medicines, surgical implements, amputated body parts, and architectural remains. After all, almost nothing is known about how these buildings were constructed, whether activity areas—such as operating rooms, dining or storage areas, or rows of bunks—can be identified within them, and whether associated dumps have the potential to reconstruct the medical procedures that were employed inside.

My search has led me to the ruins of two of the largest and most intact military encampments of 18th-

century America (Fig. 1). The first was the 1776–1777 fortification known as Mount Independence, a 300-acre mountaintop fortress in Vermont that overlooks Lake Champlain and faces Fort Ticonderoga on the New York shore. The second was the site of Fort Edward, a mammoth British installation of the French and Indian War (1754–1763), located on the Hudson River roughly 40 miles north of Albany, New York. Although separated by twenty years, both sites were principally hospital camps for the treatment of soldiers who had been injured or become sick during northern military campaigns, and each hospital complex saw the death of approximately 500 to 1000 soldiers.

Fort Edward, and the adjacent Rogers Island in the Hudson, was home to 15–16,000 soldiers in the late 1750s, briefly making it the third-largest city in America (after New York and Philadelphia). It was from here that British armies marched and rowed north to attack the French fortifications at Ticonderoga, with the sick and injured returning to hospitals on Rogers Island for treatment. Easily the best known of these casualties was Major Duncan Campbell of the Scottish Black Watch,

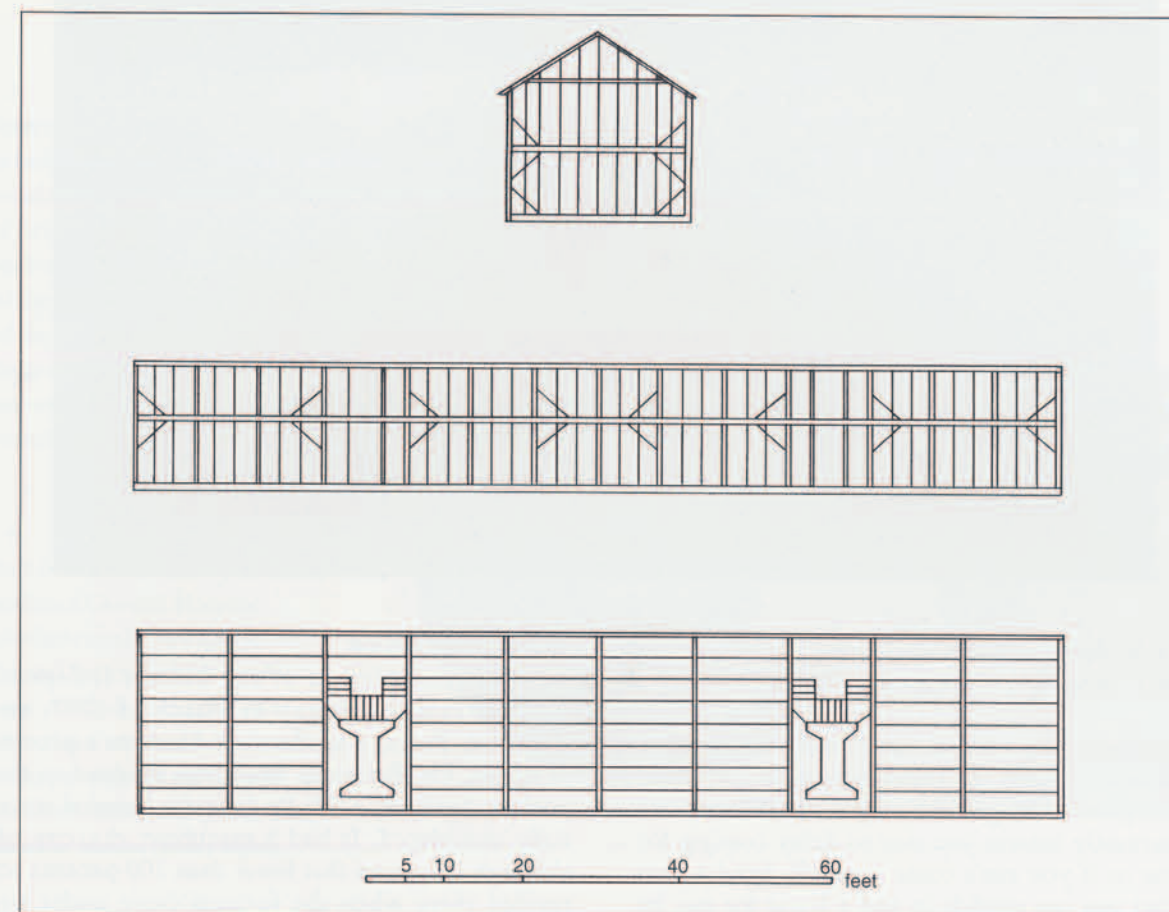


FIG. 2. Elevations and ground plot "of one of the Hospitals on Mount Independence. 120 feet Long, 24 feet Wide," with two interior fireplaces. Redrawn from a diagram in the Philip J. Schuyler papers (New York Public Library, Reel 20, Box 41) dated June 1776

who was wounded on the field of battle outside Fort Ticonderoga in 1758, carried to Fort Edward, and died eleven days later in one of the hospitals on Rogers Island.

Twenty years later, Mount Independence served the same function when its hospitals handled the American casualties from the disastrous 1775–1776 attack upon Quebec City. Mount Independence and its outlier—the older site of Fort Ticonderoga—contained regimental hospitals as well as a massive General Hospital, constructed at the order of the Northern Medical Department. Their combined population totaled 10,000.

What has made Mount Independence and Rogers Island unusually well suited to a study of early hospitals is that both were occupied by a vast force for only a brief period, and the ruins of both were never built upon after abandonment. In 1990 I excavated the foundation of the General Hospital at Mount Independence with a field school from the University of Vermont. At Fort Edward/Rogers Island I sought the smallpox hospital for several seasons with field schools

from Adirondack Community College, before we finally found and excavated it in 1994.

MOUNT INDEPENDENCE

In July 1776, in anticipation of a British assault from Canada, a rocky Vermont promontory was cleared, and hundreds of huts, barracks, storehouses, lookout posts, and blockhouses were constructed at what became the northernmost outpost of American forces in New England. Within this complex were one or more regimental hospitals that immediately took in casualties from Canada. Many of them died from disease—chiefly measles and smallpox—in the months that followed, while others froze to death at night that winter. While none of these hospital sites have yet been located, it is probable that considerable supplies were left behind at each, given their intensive use.

It is difficult to imagine life inside one of these hospitals. While documentation is scant, a 1776 drawing has survived that shows a regimental hospital at Mount Independence (Fig. 2). In addition, a sick soldier hospi-



talized at Mount Independence wrote home to his brother on October 11, 1776, stating that

I inform you that I am and have been in a low state of health for some time past and don't imagine I shall get well very soon. Wherefore I earnestly intreat you not to delay coming for me or if you can't come yourself. Send a man that you can confide in and a horse for me; let whoever comes; bring some butter and Indian meal with him to serve me on the way home. I can get discharged as soon as one comes for me; but am as frail at present that I could not venture home alone. . . . (Matthew Kennedy 1776)

Regrettably, Kennedy was one of the many who did not survive his hospital stay.

Small regimental hospitals would not have been adequate, however, for coping with the heavier casualties from a major battle. Such was the thinking of the Continental Congress in early 1777 when it authorized the construction of a General Hospital on Mount Independence, in anticipation of the advance of General John Burgoyne's army from Canada. While no drawings survive that document the hospital's layout, a 1776 letter from Dr. John Morgan, then Director-General of Hospitals for the Continental Army, specifies that hospitals

ought to be floored above, so as to make two stories each, and to have a stack of chimneys carried up the middle. . . . It is further required that bed bunks be made, and straw be always in readiness, for the sick, and a carpenter or two to be employed solely in the business of the general hospital in making coffins, tables, and utensils of various kinds. (Duncan 1931:165-66)

The General Hospital

Construction of the Mount Independence General Hospital began in March of 1777, and Dr. Jonathan Potts, a student of America's preeminent physician, Dr. Benjamin Rush, was assigned to the hospital on April 14, 1777. By June the hospital was essentially completed. It had a maximum capacity of 600, although it appears that fewer than 100 patients actually resided there when the fortress came under siege in early July. In the days that followed, James Thacher, one of the surgeons' mates, removed most of the medical supplies and all but four of the patients, and then Burgoyne's attack wrested the site from American hands. After rather brief use by the British, the General Hospital was deliberately burned in November so that it would not fall back into American hands, and the entire mountaintop was allowed to revert to forest.

When the Vermont Division for Historic Preservation, the owner of the southern half of Mount Independence, asked me to dig the hospital in 1990, all that remained on the surface was a rectangular outline of foundation stones (Fig. 3). A British map drawn by Lt. Charles Wintersmith in July 1777 clearly identified this as the site of the hospital, and a lively oral tradition among local Vermonters gave further support to the identification. Also, Vermont game warden Thomas Daniels had dug there intensively in the 1950s and discovered a modest cache of medical supplies, including several medicine cups of white salt-glazed stoneware, knife blades, and medicine bottles and stoppers (Fig. 4).

We excavated over 60 test pits within the hospital site in an effort to determine the locations of doors and fireplaces, as well as any evidence for the overall appearance of the building. In doing so, we found numerous shingle nails but no window glass, suggesting that the hospital was shingled but may otherwise have had a rather unfinished appearance. As we uncovered

FIG. 3. Foundation of the General Hospital on Mount Independence prior to excavation in 1990. Single lines of field stones (arrowed) on the surface marked the north and south sides of the foundation. The building measured some 250 feet east-west by 25 feet north-south.



FIG. 4. Artifacts excavated by collectors from the Mount Independence General Hospital. These include medicine cups (upper left), a metal "worm" which would have been attached to the end of a ramrod to clean out the bore of a musket (upper right), a saucer with "scratch blue" decoration (lower left), and medicine bottles (lower right).

Smallpox in 18th-Century America

Smallpox has often been described as the most dreaded disease in human history. Once pustules developed on the surface of the skin, death typically followed between 10 and 14 days later. The smallpox virus left most of its traces, the characteristic pockmarking, on the victim's face, where it destroyed the sebaceous glands. Afterwards, the wounds in the skin often became infected, resulting in additional deaths.

The 18th century saw important steps toward the curtailment of this disease, and smallpox inoculation was introduced into Europe and North America in 1721. Self-inoculation was common among soldiers on the frontier, although this practice was frequently banned because of the risk of spreading the virus. One of the most severe outbreaks of the disease was in 1775-1776 as the Continental Army lay siege to Quebec City. In the following year General George Washington wrote to William Shippen, the newly appointed Director-General of the Continental Army Medical Department, insisting that the army be inoculated.

Not long afterward, an English physician, Edward Jenner, noticed that milkmaids had very clear complexions and did not get smallpox. In his subsequent experiments he vaccinated using the cowpox virus, and thus established that milkmaids' contact with cows' udders had, in effect, inoculated them (through cracks in their hands). Jenner published his *Inquiry into the Causes and Effects of Variola Vaccinae* in London in 1798, but it took much longer to eradicate smallpox altogether. The world's last reported case of endemic smallpox, *Variola minor*, was discovered in Somalia in 1977, and the Global Commission for the Certification of Smallpox Eradication finally certified the eradication of the disease in 1979. It required much systematic effort and willpower to conquer the smallpox virus, and doctors today tend to compare it with the HIV virus that causes AIDS, suggesting that it will take just as much effort to eradicate this new killer. Still, the smallpox virus is remarkably resistant to extermination, even outside the body, and traces of the disease may yet be out there in the world, waiting to be reintroduced.

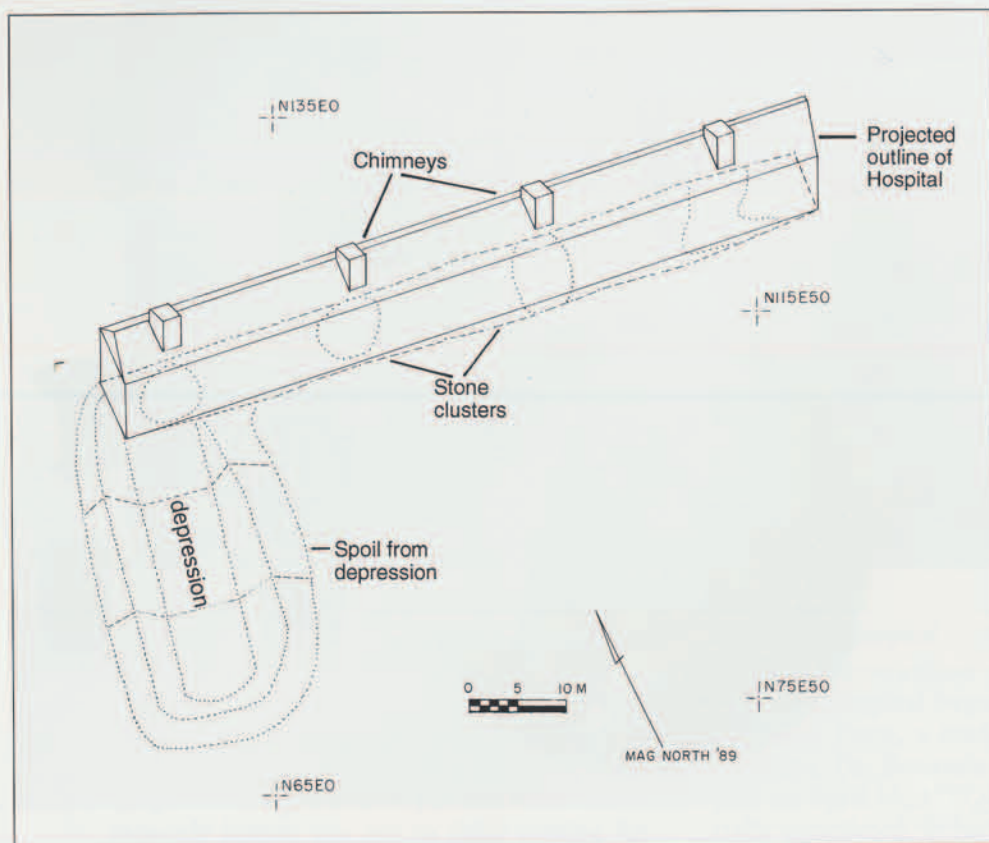


FIG. 5. Schematic representation of the General Hospital on Mount Independence, based on surface mapping, excavations, and interpolation from the only available drawing of a regimental hospital (see Fig. 2). The large depression on the left is the cellar hole from an unfinished addition.

Drawn by Gordon DeAngelo

four piles of stone rubble running down the center of the foundation, it became apparent that we were exposing the bases of four fireplaces (Fig. 5). We also found hundreds of fragments of melted wine bottles inside the foundation, as well as sherds from additional medicine cups (Figs. 6, 7). Just outside the wall, we found a trash pit that contained a single knife blade, the lid from a creamware jar (Fig. 8), and a delft ointment pot or jar. About 46 meters to the north, we found an extensive garbage pit full of butchered leg bones from at least 17 cows (Fig. 9). This represented fresh meat (rather than salted), probably consumed by officers and men in the hospital.

The resulting impression is that the hospital was popular as a dining hall, even if it may have seen minimal use as a house of healing. Our discovery of only limited medical supplies was most likely the combined result of Thacher's systematic removal of the hospital stores and

the long-term digging of the site by collectors such as Daniels. When we examined historical records and excavated many of the small cabins of the soldiers, it also became clear that the soldiers must have taken their medicines with them back to their cabins whenever possible, rather than risk the very real danger of being exposed to contagion in the hospital. We discovered fragments of medicine bottles in a great many of the soldiers' hut sites, suggesting that the General Hospital may have principally served as a giant dispensary.

FORT EDWARD AND ROGERS ISLAND

As the excavation of the hospital at Mount Independence came to a conclusion, permission was obtained from land-

owners in upstate New York to conduct a long-term project at Rogers Island, one of the premier sites of the French and Indian War (1754–1763). Fighting between

the soldiers must have taken their medicines . . . back to their cabins whenever possible, rather than risk the very real danger of being exposed to contagion in the hospital.



FIG. 6. Medicine bottles excavated from the hospital foundation on Mount Independence. Many medicines contained a high proportion of alcohol or opium, and it was common for apothecaries to use a separate bottle for each dose of medicine.



FIG. 7. Medicine cups of white salt-glazed stoneware excavated from the hospital foundation on Mount Independence.

the French and the British in New York State began with the Battle of Lake George in 1755, followed by a period of fort-building as both sides sought to solidify their positions. While Fort Ticonderoga represented the southernmost advance of French forces on Lake Champlain, it was Fort William Henry at the southern end of Lake George and Fort Edward on the Hudson River that represented the most northerly advance of the British.

Fort Edward was by far the larger of these British sites, constructed at a total cost of more than 42,000 pounds (Fig. 10). Most of the British forces at that installation were based on Rogers Island, named after the famed Major Robert Rogers. From 1757 to 1759 Rogers Island was the principal base camp for about 400 of Rogers' Rangers as they conducted raids upon French and Native American settlements in the north, including the Abenaki village of St. Francis. The Rangers were accompanied by thousands of British Regulars and American provincial soldiers, and the island and Fort Edward served as a massive supplies depot, training camp, and hospital complex for soldiers traveling north from Albany.

Fort William Henry, 15 miles closer to the French fort and garrisoned by only about 2,000 soldiers, was much more vulnerable to attack and was ultimately

destroyed in 1757. The so-called massacre described in James Fenimore Cooper's great novel, *The Last of the Mohicans*, was one of many actions in the fall of Fort William Henry that provided casualties for the hospitals on Rogers Island. The complex of barracks, huts, tents, storehouses, and hospitals in Fort Edward was never attacked, and most of the casualties from the British assaults upon Ticonderoga in 1758 and 1759 were sent to Rogers Island. The hospitals there were of several types, including a blockhouse that was converted into a hospital, assorted barracks' rooms that were used for patients, and a smallpox hospital that was positioned at the southern end of the island, as far from the main barracks complex as possible.

The Smallpox Hospital

The smallpox hospital appeared the most promising for archaeological research because the barracks' sites had been deeply buried under dredge from the Hudson River early in the 1900s. Moreover, the smallpox hospital had stood alone, on top of a high terrace that reduced the hazard of flooding, and its isolation meant there was little danger of confusing its remains with those from any surrounding buildings. We knew from historical sources that it had been hurriedly constructed by a soldier named Jabez Fitch and about

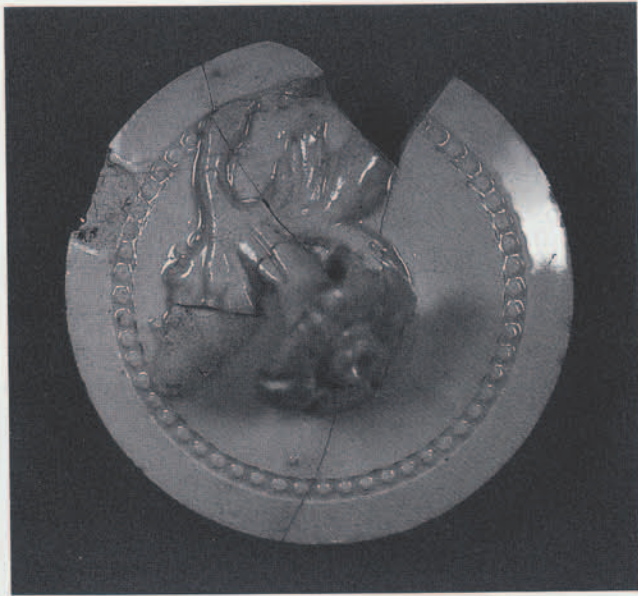


FIG. 8. Ornate lid, 2 inches in diameter, from an English creamware jar. This was excavated from a trash pit on the northern edge of the General Hospital on Mount Independence.

twenty of his comrades. Construction began on May 31, 1757, and an addition was made in 1758. The hospital's approximate location was later indicated on an historical map drawn in 1772. Because the hospital was in use for a couple of years, we had reason to believe that considerable evidence might have survived. But while there were about one hundred patients at a time housed there, we did not expect to find medicines for treating smallpox. None are known to have existed at that time, and it was not until the American Revolution that inoculations against smallpox began on a more regular basis.

No traces of the smallpox hospital had survived on the surface of Rogers Island, and it ultimately took four field seasons to find the remains (Fig. 11). The first evidence was a sizable dump discovered on the eastern edge of the raised terrace in 1993. The dump contained a large brush (or fascine) knife, buttons, knives, the bowl from a pewter spoon, a 1751 Spanish one-real piece, gun flints, and more (Figs. 12–14), but the only artifacts that suggested a hospital function were small fragments of glass medicine bottles.

The 1994 season proved much more rewarding. Dark linear stains began to be defined beneath the topsoil atop the terrace, outlining a trench or palisade line that ran for over 130 feet north-south along the western side of the terrace and for over 58 feet east-west across the terrace (Figs. 11 and 15). While the outlines of individual posts were not discovered within this staining, it appeared that this had been a ditch into which palisade posts were set. The staining was full of rosehead nails and charcoal flecks, and the complete blade from a spade was discovered at the end of the western stain. In

the center of the northern stain there was a gap of about 3 feet that suggested a possible doorway or entrance, and a key was discovered just outside the opening.

Using the lines of staining and the eastern dump as outer limits for the hospital building, extensive testing ultimately revealed two north-south rows of postmolds, forming the eastern and western sides of a building whose weight had rested upon posts. This type of temporary construction seems appropriate to a building that had been thrown up hastily by soldiers. The large, square postmolds were positioned at 5-foot intervals, outlining a foundation that was 15 feet wide. We uncovered six posts on either side of the building, so we had exposed just the mid-section of the hospital, an area that measured 15 feet east-west by 30 feet north-south (Fig. 16).

In the fine yellow sand of Rogers Island there was no evidence of room divisions within the smallpox hospital, nor did we discover any medicines for treating smallpox. However, we did find that the artifacts in the associated dump were essentially no different from those found in any other hut or barracks on the island. They were an assortment of kitchen artifacts (utensils for food consumption), clothing artifacts, and arms. Even the medicine bottle fragments in the dump did not prove the proximity of a hospital because we knew the soldiers would have taken medicines back to their cabins. However, we do feel confident that this long, narrow building raised on posts was the smallpox hospital, and we left enough of it intact that future archaeologists may someday continue exposing its outline and the associated dump.



FIG. 9. Trash pit filled with butchered cow leg bones, found north of the Mount Independence General Hospital. Out of 726 bones found in the pit, there were 64 articulated lower legs, including 17 left metatarsals and 17 left metacarpals. The lower leg would have been the least meaty part of each cow, probably the first part to be thrown out during butchering.

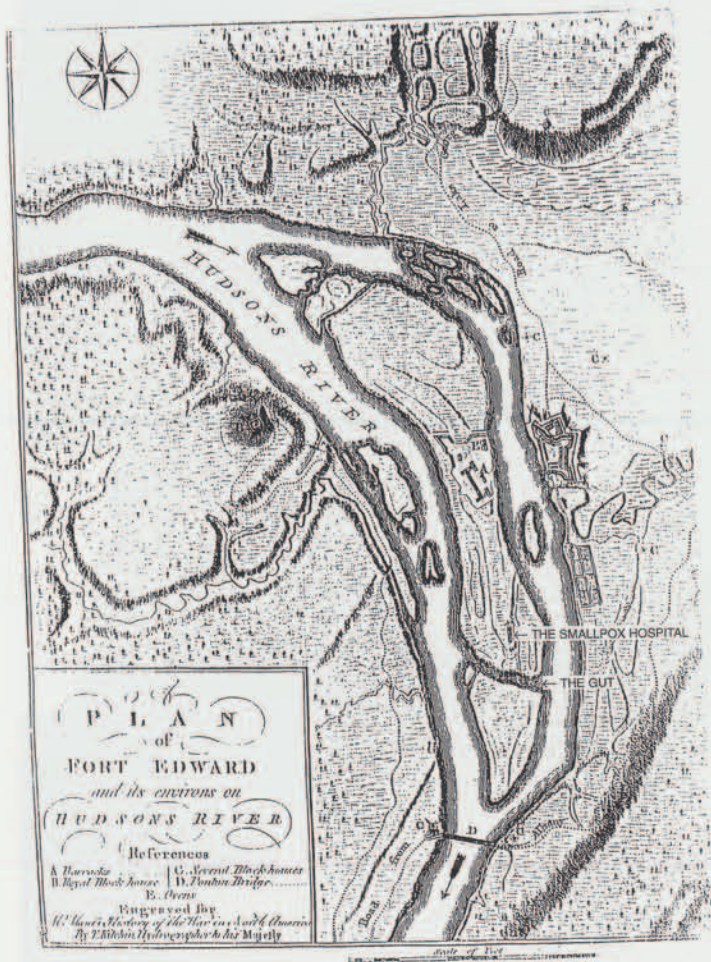


FIG. 10. "A Plan of Fort Edward and its environs on Hudsons River." Rogers Island is shown in the middle of the river, which flows south, and Fort Edward appears on the east bank.

Engraved for Thomas Mante, 1772, by T. Kitchen. *Catalog of Kings' Maps, British Museum.* (The labels "The Smallpox Hospital" and "The Gut" have been added)

FIG. 11. The 1757 smallpox hospital on Rogers Island. Numerals on the plan locate features and individual artifacts, including an iron spade blade (1) found within the ditch, a complete iron key (6) found near a possible gateway, an iron fascine knife with tang (16; see Fig. 12), and a 1751 Spanish coin (18; see Fig. 13).

Drawn after a field drawing by Matthew Rozell

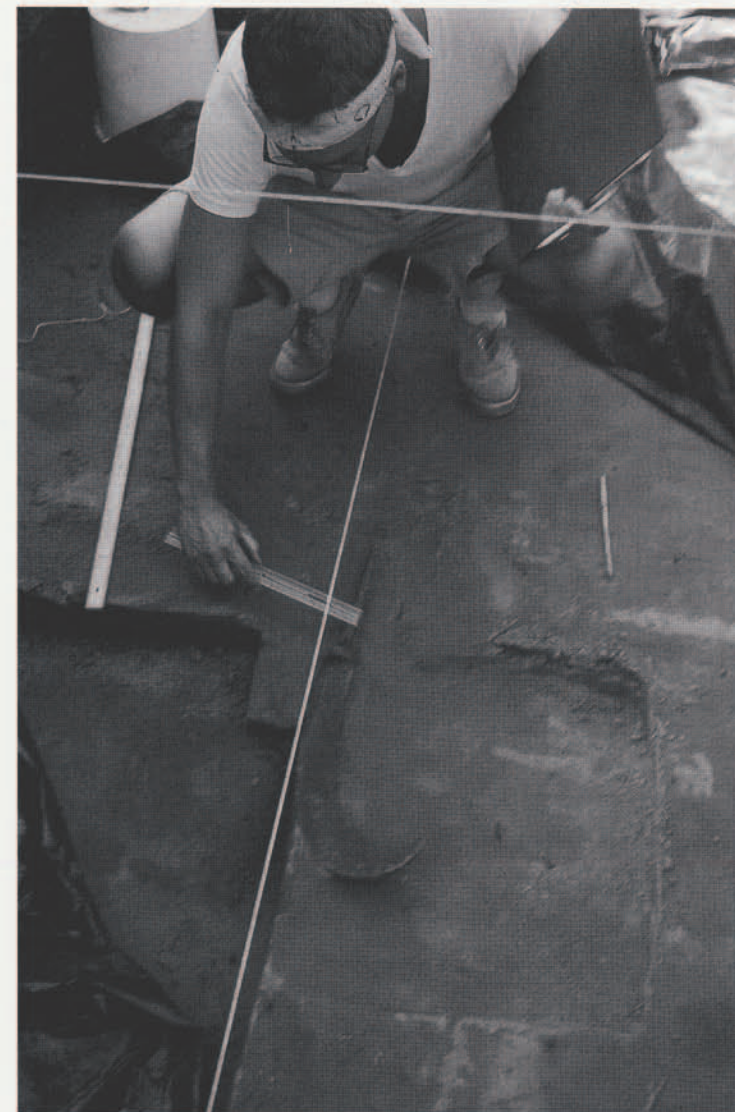
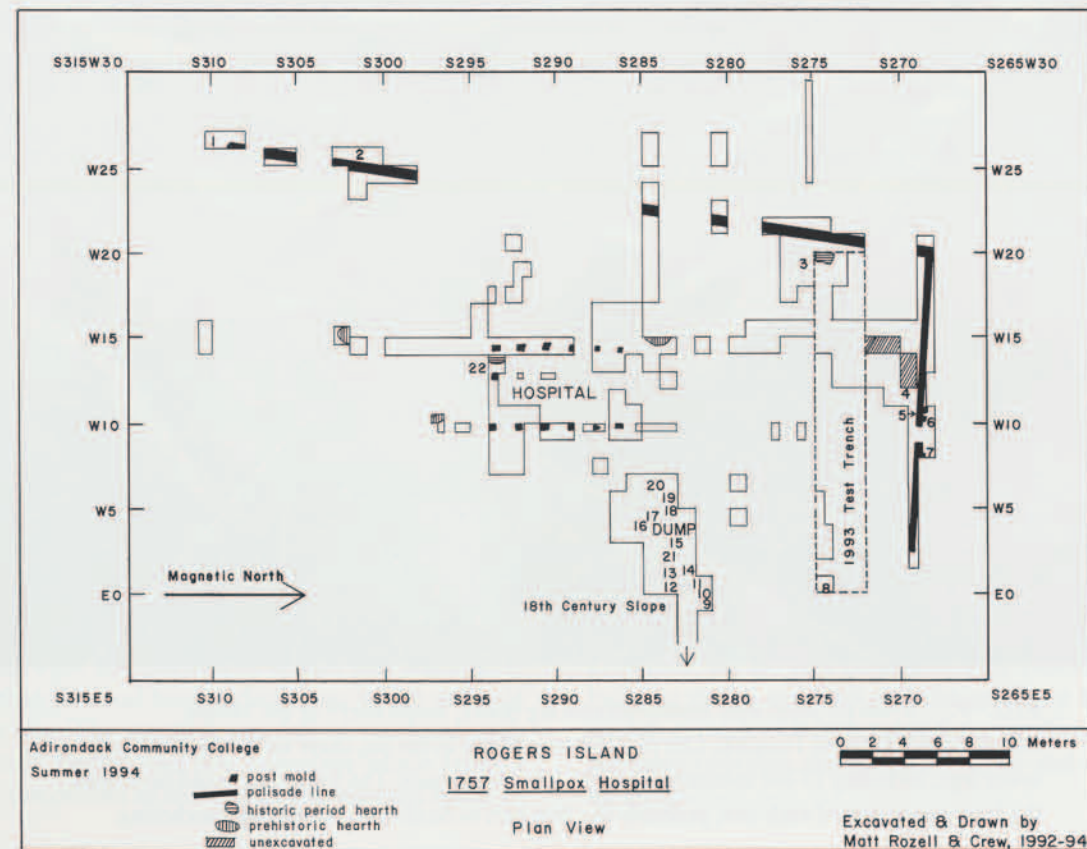


FIG. 12. Brush-clearing knife, 22½ inches long, marked "LE," found in the dump east of the smallpox hospital on Rogers Island. Only a few slivers had survived from the short wooden handle.



FIG. 13. Spanish silver one-real piece (1751) found in the dump east of the smallpox hospital.

CONCLUSIONS AND FUTURE OBJECTIVES

After 12 years of searching, it is becoming clear that finding the fairly intact remains of an 18th-century military hospital is far more difficult than was first anticipated. Unlike urban hospitals for the poor, military hospitals were not built for permanency, and buildings of post construction that were occupied for only weeks or months simply do not leave substantial remains behind. Also, the medicines or medical instruments that were used inside military hospitals were sufficiently rare that associated dumps now contain only minimal amounts of medical trash. Nevertheless, when given the opportunity, I would like to return to Mount Independence to examine its smaller regimental hospitals—which saw much more use than the big General Hospital—and I plan to continue searching for the rest of the hospitals at the Fort Edward encampment. We have already devoted two seasons (1995 and 1996) to looking for the

West Barracks inside the main fort as that was the building that contained the fort's principal hospital.

Efforts are also underway to examine additional hospital sites. Chief among these is the hospital complex at Fort George located in Lake George, New York. The very largest smallpox hospitals of the American Revolution were constructed there, as well as a General Hospital established in 1777; and it was in March of 1777 that the Continental Army began doing smallpox inoculations at the Fort George hospitals. While permission has not yet been obtained to conduct intensive testing, I nevertheless headed a team that began mapping the surface of Fort George in 1994. We are hopeful that in time it will be possible to begin a long-term effort there, and it may well prove to be the hospital complex we have been seeking—with intact foundations, dumps, and sufficient medical supplies to adequately reconstruct the American military's medical procedures in the late 18th century. ➤



▲ FIG. 14. Gun flints excavated from the dump east of the smallpox hospital. Those at the upper left have been discolored by burning, while the remainder are typical brown or honey-colored "French" gun flints.



◀ FIG. 15. The foot-wide palisade stain that borders the smallpox hospital on the west. This dark linear stain appeared at the top of the subsoil; if it was a palisade fence, then sharpened logs would have been set vertically into the ditch at intervals of several inches.



FIG. 16. Amputated human phalanges (finger bones) found inside a post-mold on Rogers Island. These had been thrown out with the garbage, perhaps after an operation for gangrene or frostbite.

BIBLIOGRAPHY

- Blanco, Richard L.**
1979. *Physician of the American Revolution: Jonathan Potts*. New York: Garland.
- Cuneo, John R.**
1988. *Robert Rogers of the Rangers*. Ticonderoga, N.Y.: Fort Ticonderoga Museum.
- Duncan, Louis C.**
1931. *Medical Men in the American Revolution (1775-1783)*. Carlisle Barracks, Pa.: Medical Field Service School.
- Fitch, Jabez**
1966. *The Diary of Jabez Fitch, Jr. in the French and Indian War 1757*. Publication No. 1, Rogers Island Historical Association. Fort Edward, N.Y.
- Gillett, Mary C.**
1981. *The Army Medical Department 1775-1818*. Washington, D.C.: Center of Military History, United States Army.
- Henderson, Donald A.**
1976. "The Eradication of Smallpox." *Scientific American* 235(4):25-33.
- Hopkins, Donald R.**
1983. *Princes and Peasants. Smallpox in History*. Chicago: University of Chicago Press.
- Kennedy, Matthew**
1776. Letter from "Camp at Mount Independence 11th Octr 1776" to "Mr. Robert Kennedy In Goffstown [N.H.]". Kennedy family documents, Special Collections, University of Vermont.
- Saffron, Morris H.**
1982. "The Northern Medical Department 1776-1777." *The Bulletin of the Fort Ticonderoga Museum* 14(2):81-120.
- Siebert, Charles**
1994. "Smallpox Is Dead. Long Live Smallpox." *The New York Times Magazine* August 21, 1994/Section 6, pp. 30-37, 44, 52, 55.
- Starbuck, David R.**
1988. "The American Headquarters for the Battle of Saratoga." *Northeast Historical Archaeology* 17:16-39.
1990. "The General Hospital at Mount Independence: 18th Century Health Care at a Revolutionary War Cantonment." *Northeast Historical Archaeology* 19:50-68.
1993. "Building Independence on Lake Champlain." *Archaeology* 46(5):60-63.
1993. "Anatomy of a Massacre." *Archaeology* 46(6):42-46.
1997. "America's Forgotten War." *Archaeology* 50(1):60-63.
- Thacher, James, M.D.**
1862. *Military Journal of the American Revolution . . .*. Hartford, Conn.: Hurlbut, Williams & Company.
- Wilbur, C. Keith, M.D.**
1980. *Revolutionary Medicine 1700-1800*. Chester, Conn.: The Globe Pequot Press.
1987. *Antique Medical Instruments*. West Chester, Pa.: Schiffer Publishing.
- Wintersmith, Lt. Charles**
1777. Map prepared by Lt. Charles Wintersmith by order of Lt. Twiss, Burgoyne's chief engineer, July 1777. "Plan of Carillon or Ticonderoga which was quitted by the Americans in the night [sic] from the 5th to the 6th of July 1777." Original in possession of the Public Archives of Canada.