Objects of Endurance: Buttons, Glass, Tools, and Surgical Implements as Material Witnesses at Valley Forge

Valley Forge is often remembered through weather: snow, wind, bare feet, the winter of 1777-78 reduced into a national icon of suffering. But the archaeology of the encampment points toward a more intimate and, in some ways, more convincing history. The most eloquent witnesses are not always statues, paintings, or later patriotic legends. They are small, damaged, half-buried things: a button that kept a coat closed; a glass rim from a bottle or vessel; a nail from a hut; a gunflint or musket ball; a brass buckle; a surgical probe; a tooth key; a bit of animal bone; a soil stain where someone cooked, repaired, discarded, or endured.

That is the value of thinking about Valley Forge through "objects of endurance." These objects do not simply illustrate the winter. They correct it. They pull the story away from a smooth patriotic tableau and return it to bodies, tools, repairs, waste, class differences, health, pain, food, labor, and the administrative machinery that kept the army from dissolving. Valley Forge was not only a crucible of morale. It was a material system under stress.

The Ground Beneath the Story

Archaeology matters at Valley Forge because the written record, even when abundant, preserves the encampment unevenly. Officers wrote letters; commanders issued orders; Congress received complaints; quartermasters kept accounts; later generations built monuments. But the daily life of enlisted men, camp women, servants, teamsters, artisans, guards, cooks, and the sick is often clearest in things that were dropped, broken, reused, or buried.

The National Park Service's work at Washington's Headquarters is especially revealing. Archaeologists emphasize that artifacts must be understood not only as objects, but as objects in context: where they were found, in what layer, in relation to what feature, and beside what other materials. A shard of glass means little by itself. A shard of glass from a sealed eighteenth-century refuse pit, near a preserved ground surface, behind the headquarters building, means something else entirely.

This is one of the most important interpretive points: at Valley Forge, features are often as important as artifacts. A trash pit, a sill trench, a hearth, a post mold, a buried plow zone, or a dark soil stain may preserve more meaning than a single attractive object. In the 2009-2011 investigations around Washington's Headquarters, archaeologists found refuse pits dating to the last quarter of the eighteenth century, a buried 1700s plow zone marked by charcoal and hearth sweepings, and a shallow trench that may indicate a substantial dining cabin where Washington could meet or eat with officers. Those features change the story. They show that

headquarters was not merely a heroic command post. It was a household, an office, a guarded administrative center, and a place of hierarchy and domestic routine.

Excavating outside of Washington's Headquarters in 2010.

Buttons: Holding the Army Together

Buttons are easy to underestimate. They are small, ordinary, and rarely dramatic in a museum case. Yet at Valley Forge they are among the most intimate military artifacts because they connect the army directly to the soldier's body. A button kept a coat closed. It held a waistcoat in place. It helped preserve warmth, modesty, and the visible order of a military body. A missing button could mean cold, exposure, shame, or simply another small failure in a winter already full of failures.

Excavations at Conway's Brigade recovered buttons along with calcined bone fragments, musket balls, lead sprue, nails, domestic earthenware pottery, bottle and vessel glass, gunflints, flakes, and ceramics. The archaeologists noted that the quantities and weights were small. That smallness is significant. This was not an overflowing camp dump of abundance. It was a sparse material record of scarcity, repair, movement, and careful reuse.

The most interesting button-related evidence is not only the button itself, but the possibility of making and replacing them. Valley Forge has highlighted a rare Continental Army button mold used to cast pewter buttons. The mold, reportedly one of only two known examples of its kind, carried a roped border and "USA" in the center. That object transforms a button from clothing hardware into evidence of improvised production. Soldiers and camp artisans were not simply waiting for supply wagons. They were making, repairing, recasting, and adapting.

This is a useful way to read the encampment. The army endured not by heroic feeling alone, but by maintenance. It survived through the constant work of keeping coats closed, shoes patched, muskets functional, huts standing, wagons moving, and bodies alive. A button mold is therefore a quiet artifact of institutional survival.

Continental Uniform Button – In 18th century armies, regiments had pewter uniform buttons with individual number designations. Prior to entering Valley Forge, General Washington wrote Captain Caleb Gibbs regarding the acquisition of new uniforms for his Commander-in-Chief's Guard. Since the Guard did not have an individual number for their buttons, Captain Gibbs chose a new cipher – "USA." As far as is known, the Guard was the first unit to use this symbol. The same uniform button became widely worn during the Valley Forge Encampment when the Continental Army was transformed from individual state units into a single unified force.

Glass: Medicine, Alcohol, Tea, Status, and Trash

Glass fragments at Valley Forge are especially rich because they point in several directions at once. Bottle glass could mean alcohol, medicine, food storage, reused containers, or household refuse. Vessel glass could suggest dining, rank, domestic service, or the difference between a private soldier's hut and an officer's table. Even broken glass becomes a clue to who had access to what.

At Washington's Headquarters, the recovered material culture complicates the standard image of Valley Forge as a single landscape of deprivation. Archaeologists found refined ceramics, including creamware and a cherub-decorated piece that probably came from a soup tureen or similar serving object. NPS interpretation notes that such an object points to class difference: no enlisted soldier could have afforded that kind of vessel. The same site produced animal bones that may help distinguish Washington's diet from that of enlisted soldiers.

That contrast is essential. Valley Forge was a shared encampment, but not a shared experience. Washington's headquarters was crowded, difficult, and administrative, but it also contained refined objects, visitors, staff, guards, servants, Martha Washington's presence, and high-ranking officers. The enlisted huts elsewhere represented another world: log walls, packed bodies, smoke, cold, mud, repairs, hunger, fatigue duty, and disease.

Glass also belongs to the medical story. Bottles and vials were part of eighteenth-century treatment, pharmacy, and storage. At a place where disease killed more than combat, the difference between a liquor bottle, a medicine bottle, and a reused container matters. It reminds us that "endurance" was also chemical and bodily: doses, tinctures, spirits, poultices, and the hopeful, sometimes desperate, medical practice of the eighteenth century.

Pieces of porcelain and creamware

NPS/VAFO

Tools: The Encampment as a Built Thing

Valley Forge was not simply occupied. It was made. Thousands of soldiers had to convert a winter landscape into a military city: hut lines, roads, kitchens, workshops, defenses, stables, guard areas, storage places, and hospital routes. The most important artifacts of this transformation may not be weapons at all, but tools.

The axe deserves special attention. It cut the logs, shaped the huts, produced firewood, cleared space, and made winter survivable. Nails, wedges, knives, hinges, saws, spades, and other tools performed the less romantic work of the Revolution. They made walls, roofs, doors, bunks, chimneys, bridges, repairs, and routines. The hut was not simply a backdrop to suffering. It was a labor artifact.

Descriptions of the encampment emphasize ordered hut lines and repeated forms, but archaeology gives that order texture. Huts survive as stains, hearths, chimney bases, nails, postholes, and refuse distributions. Where later visitors may see a grassy field, archaeologists may see a pattern of past labor: where logs stood, where fires burned, where trash accumulated, where soldiers walked, where a fence crossed the ground, where a later landscape improvement disturbed the eighteenth-century surface.

The Washington's Headquarters investigations are a good example. The field blog explains post holes and post molds in plain terms: the hole dug for the post, and the trace left by the post itself when it decayed, was removed, or was backfilled. That kind of evidence is not spectacular,

but it is deeply human. A posthole records an act: someone dug here, placed timber here, divided space here, repaired or removed something here.

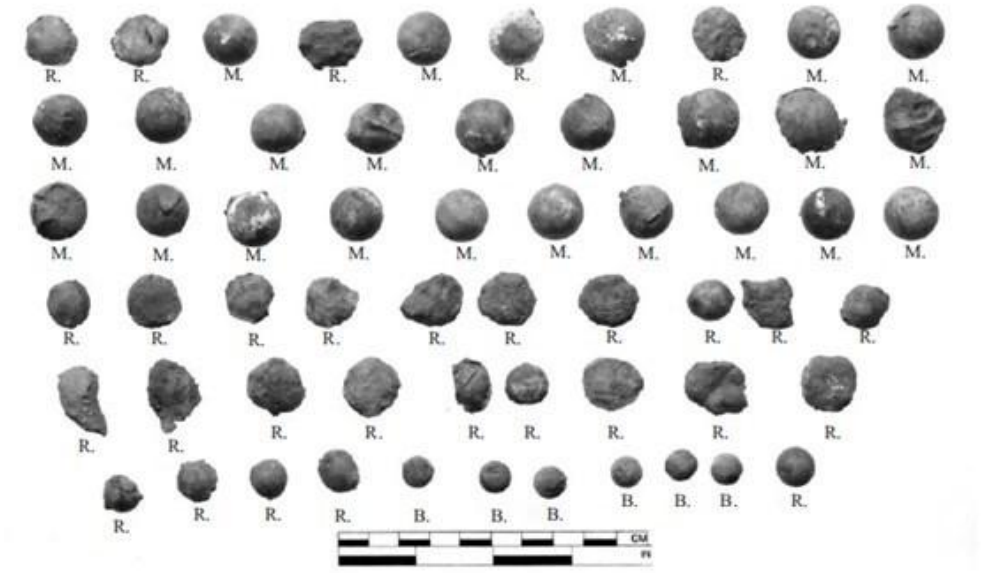
Revolutionary War artifacts from the George C. Neumann Collection at Valley Forge National Historical Park, including spurs, ice creepers, and musket ball molds. *Citation: National Park Service, "Digitizing Artifacts from the Museum Collections at Valley Forge National Historical Park," Valley Forge National Historical Park.* *https://www.nps.gov/articles/000/digitizing-artifacts-vafo.htm*

Musket Balls, Gunflints, and Training: The Army Learning to Fight

Weapons-related artifacts at Valley Forge do not only represent battle. They also represent training. Valley Forge was not a battlefield in the usual sense. Its military importance lay in discipline, standardization, recovery, and preparation.

Recent NPS work in connection with Section 106 review identified a concentration of squashed and misshapen musket balls, rifle balls, and buckshot interpreted as evidence of a firing or musketry range used during the encampment. Their distribution followed what appeared to be a target line. Analysis of projectile diameters suggested at least thirteen different types of muskets and rifles used by soldiers. NPS also notes that the abundance of fired bullets of rifle caliber was unusual at Valley Forge and pointed to specialized training by some troops.

That is a remarkable detail. The archaeology shows not just that soldiers possessed weapons, but that they practiced. The army at Valley Forge was not only waiting out the winter. It was being disciplined into a more effective force. The bullets in the ground are evidence of transformation: varied weapons, practical training, and the uneven process of turning a suffering army into a more coherent one.



Sample of musket balls, rifle balls, and buckshot recovered in the investigations. NPS photo.

The Bayonet Cache: A Buried Question

The most cinematic artifact story connected to Valley Forge is the discovery of a cache of thirty bayonets, stacked together and buried near the encampment landscape. The find is striking because bayonets were valuable military equipment. They were not casual trash. A single dropped bayonet might be ordinary. Thirty together is a question.

The most responsible interpretation is to keep that question open. Were they hidden and never recovered? Damaged? Stored and forgotten? Concealed during a movement? Associated with a unit's equipment issue or a later disturbance? The meaning is not fully settled, but that uncertainty is part of the object's power. A cache is not just an artifact group; it is an interrupted action.

Bayonets also carry symbolic weight at Valley Forge. They point toward the professionalization of the Continental Army and the emphasis on drill and discipline associated with Baron von Steuben's arrival in February 1778. The army that left Valley Forge was not simply an army that had suffered. It was an army increasingly trained to stand, maneuver, and use the bayonet as part of a disciplined military system.

The collection of bayonets. Jesse West-Rosenthal/Courtesy of Battlefield Restoration & Archaeological Volunteer Organization (BRAVO)

Surgical Implements: The Body as Battlefield

The medical objects are perhaps the most haunting "objects of endurance" because they preserve the winter through pain. Valley Forge was a medical crisis: disease, cold, malnutrition, infection, respiratory illness, dysentery, wounds, exhaustion, and the consequences of inadequate shelter and sanitation. The body was one of the encampment's main battlefields.

Nearby Yellow Springs became an important hospital site for the encampment. Dr. Bodo Otto, a German-born physician serving the American cause, was ordered to take charge there after sick soldiers were already being sent to the area. Historic Yellow Springs has interpreted instruments associated with Otto's surgical world: tooth key, cupping glass, trephine, saw, tourniquet, bullet probe, ball forceps, scalpel, trocar, fleam, capital knife, and mortar and pestle.

Those tools are difficult to look at without imagining pain. A tooth key pulled diseased teeth. A trephine cut into the skull. A saw could amputate. A probe searched for bullets. Ball forceps grasped projectiles. A tourniquet slowed bleeding. A mortar and pestle prepared medicine. A cupping glass reflects a medical theory now rejected but then understood as care. These objects reveal a world in which healing and suffering were inseparable.

This is where the phrase "objects of endurance" becomes most literal. Endurance did not mean noble patience. It meant submitting to treatment, surviving infection, waiting for medicine, being carried to a hospital, or watching others die in huts and wards. The surgical kit is the opposite of a clean patriotic symbol. It is the material culture of survival at the edge of the body.

Food, Bone, and Class Difference

Food remains are some of the most useful artifacts because they test memory against appetite. Valley Forge's popular image emphasizes hunger, and rightly so. Yet the archaeological record also reveals variation: different diets, different access, different social positions inside the same encampment. At Washington's Headquarters, animal bone analysis has been used to ask what Washington's household and officers ate and how that differed from enlisted soldiers. Archaeologists identified refuse and ceramics that speak to class. Other summaries of Valley Forge archaeology notes saw-cut cattle and pig bones, uniform buttons, musket balls, and redware sherds from Revolutionary-period contexts. They show people eating, butchering, cooking, serving, discarding, and living inside a war.

The enlisted soldier's hunger and the officer's table existed in the same winter. That is not a contradiction. It is history. Valley Forge was a collective ordeal structured by rank, access, proximity to command, and the uneven success of supply. A pork bone and a porcelain shard can tell us as much about authority as a general order.

The Precontact Landscape Beneath the Revolutionary One

One of the most interesting findings from the Washington's Headquarters archaeology is that the Revolution was only one layer of a much older landscape. NPS reports that the 2009-2011 field seasons recovered more than 3,000 precontact artifacts, including projectile points dating to the Late Archaic period and stemmed points from the Late Woodland period. Debris from stone-tool manufacture made up much of the assemblage, and quartz appears to have been a preferred local material.

This does not distract from Valley Forge. It deepens it. The Continental Army encamped on land already marked by thousands of years of Indigenous presence, movement, toolmaking, seasonal use, and memory. The winter encampment was a dramatic layer laid over older human geographies.

Valley Forge is not only Washington's ground. It is also Native ground, agricultural ground, industrial ground, commemorative ground, and archaeological ground. Each layer alters the meaning of the others.

Preservation Before Curiosity

A final point is worth emphasizing. Archaeology at Valley Forge often happens not because someone simply wants to dig, but because preservation law requires careful review before construction, utilities, roads, septic systems, entrances, or landscape work disturb the ground. NPS's discussion of Section 106 review at Valley Forge is useful because it shows preservation in

action. Routine projects can disclose unknown artifacts, identify site integrity, redirect construction, and prevent damage before it happens.

That is an important frame. The goal is not to extract relics. The goal is to protect context. A musket ball, button, shard, or buckle removed without context becomes a collectible. The same object documented in relation to soil, feature, depth, and surrounding materials becomes evidence.

Conclusion: The Winter in Small Things

The power of Valley Forge archaeology is that it brings the winter back down to scale. The encampment was enormous in consequence, but it was lived in small acts: fastening a coat, sharpening a tool, cutting a log, cleaning a musket, casting a bullet, losing a button, breaking a bottle, eating from a bowl, sweeping a hearth, digging a posthole, enduring surgery, carrying water, discarding bone, and walking over the same packed ground day after day.

The monuments make Valley Forge legible as national memory. Archaeology makes it human. The objects are not only relics of hardship; they are evidence of maintenance, discipline, adaptation, medical pain, and survival. Together they show that endurance was not abstract patriotism. It was material. It was a button, a shard, a tool, a stain, a pit, a bone, a bullet, a bayonet, a surgeon's instrument, and the ground itself remembering what documents could not fully say.

Constructing Activities by the Continental Army by Don Troiani for the National Park Service.

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