

ARMS & ARMOR OF THE PEQUOT WAR (1636-1637): A HISTORICAL & ARCHAEOLOGICAL PERSPECTIVE

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Introduction

Lieutenant Lion Gardiner, English commander of Saybrook Fort at the mouth of the Connecticut River, believed “war is like a three-footed stool, want one foot and down comes all,” the legs of which were “men, victuals, and munitions.”¹ Though well versed in warfare as a veteran military engineer during the Thirty Years Wars in the “Low-Countries,” by his own account Gardiner experienced the toughest fighting of his life during his time at Saybrook.² During the first six months of the Pequot War (September 1636 – August 1637) the fort’s garrison barely withstood a siege by numerically superior veteran Pequot forces. Gardiner adapted his strategy and armaments to counter that of the Pequot and respected their martial abilities so much so that Governor Edward Winslow of Plimoth Colony (spelled today as Plymouth) complained to Governor John Winthrop at Boston that the Lieutenant “*much discourageth common men by extolling the valor of your adversaries [Pequot] preferring them before the Spaniards.*”³ Pequot combat effectiveness was honed during conflict with Connecticut River tribes in the late 1620’s as well as a war with the Dutch in 1634 where they experienced firearms in combat and developed tactics to minimize their impact. The Pequot War was the first large scale European-Native conflict in present-day New England during which combatants evolved their respective styles of warfare to counter their opponent. This study draws from the latest historical and archaeological research to reexamine the “munitions” of Gardiner’s stool of war, the arms and armor of the Pequot War.⁴

The Battlefields of the Pequot War Project

After more than 375 years, the Pequot War (1636-1637) remains one of the most controversial and important events in early American history that forever changed the political and social landscape of the region. The war demonstrated to Native peoples in the northeast the ability of the English to wage total war against their communities and the need for European armaments in future conflicts. Politically, the defeat of the Pequot created a power vacuum while their lands were claimed by newly formed Connecticut Colony and other Native groups through right of conquest. In recognition of its historical significance the Mashantucket Pequot Museum & Research Center, in partnership with the University of Connecticut, was awarded several National Park Service American Battlefield Protection Program grants between 2007 and 2018.⁵ Under the direction of Dr. Kevin McBride, battlefield locations were studied to determine if any original land remained intact. If so, an archeological survey soon followed to uncover evidence of the battle. This included traditional archeological excavation and historical research along with remote sensing devices such as metal detecting and ground penetrating radar. Archeologists surveyed several Pequot War battlefields referred to as the Siege of Saybrook Fort (September 1636 – March 1637), the Battle of Mistick Fort and English-Allied Withdrawal (May 26, 1637) and the Battle of Munnacommock Swamp (July 13-14, 1637). The Battlefields of the Pequot War project resulted in new historical perspectives,

thousands of seventeenth century artifacts and preservation initiatives for these important sites.

War Comes to Southern New England (1636-1637)

In the early seventeenth century approximately 8,000 Pequot lived in present-day southeastern Connecticut. The Pequot first encountered Europeans around this time beginning with the Dutch and by 1622 the two groups entered an economic relationship involving fur and wampum for trade goods such as iron tools, cloth and firearms.⁶ In the early 1630’s a smallpox epidemic swept through the northeast reducing the Pequot’s population to about 5,000. At the same time, the Pequot exerted control across southern New England and Long Island Sound forming a regional confederacy of tribes under their leadership. Influence over these communities was critical for maintaining control of the fur and wampum trade. To increase their access to European goods, Pequot sachems allowed the Dutch to build a trading post on the Connecticut River at present-day Hartford in 1633. English traders who arrived in the river valley later that fall sought to break the Dutch-Pequot monopoly by establishing their own relationships with Native tribes in the region.

During the winter of 1633-1634 the Dutch and Pequot briefly warred over a trade dispute, during which time Virginia trader Captain John Stone and his crew were killed by Pequot warriors after Stone had taken several of their kinsmen captive. Although the Pequot provided explanations for the murders, explaining they had mistaken the Europeans for Dutchmen, the English would not let the deaths go unpunished. After a second trader, John Oldham, was killed off of Block Island in 1636 Massachusetts Bay sent a 90-man army under Colonel John Endicott to exact retribution. They first destroyed villages on Block Island before sailing to the Pequot (Thames) River where they burned two Pequot villages killing several. The Pequot saw this as an unprovoked attack and immediately laid siege to Saybrook Fort where they killed over 20 Englishmen along the lower Connecticut River during the winter of 1636-1637. They attacked the garrison daily, destroyed provisions, warehouses and interrupted river traffic between Windsor, Wethersfield and Hartford.

In the spring, the war expanded upriver as the Pequot attacked Wethersfield on April 23, 1637, killing several settlers and capturing two girls. The attack galvanized the English along the river and the General Court at Hartford ordered an “Offensive War against the Pequot” on May 1 whereupon they levied 90 soldiers from Hartford, Windsor and Wethersfield commanded by Captain John Mason. The English allied themselves with around 100 “River Indians” and Mohegan warriors. They sailed east to present-day Rhode Island where enlisted the aid of another 200 Narragansett warriors who were also at war with the Pequot. In the early morning of May 26, English allied forces marched to present-day Mystic, Connecticut where they assaulted the fortified Pequot village of Mistick at dawn (Figure 1).

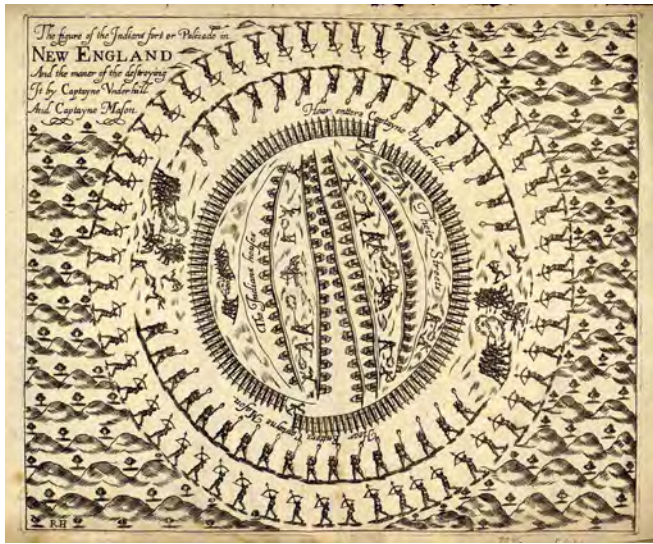


Figure 1. Battle of Mistick Fort Engraving by Captain John Underhill (John Underhill, *Newwes from America*. London: J.D., 1638).

The initial attack on the fort led by Captains Mason and Underhill was repulsed and retreating English troops set fire to Pequot dwellings as they exited the palisaded village. Within an hour more than 400 Pequot noncombatants lay dead, many burned to death, along with up to 200 Pequot warriors. Pequot reinforcements soon after counterattacked English-allied forces throughout the day who withdrew west to meet their ships at Pequot (New London) Harbor. Some of the most intensive combat of the day occurred during the English march to the harbor where they inflicted hundreds of casualties on the Pequot but also suffered heavily themselves during the fighting. When Mason's army met their ships at Pequot Harbor there were only 10 English troops unharmed out of the 77 who attacked Mistick and their Indian allies likely suffered a high casualty rate as well. Following the loss of so many of their people during the Battle of Mistick Fort, their leaders opted to abandon their villages and temporarily flee their homelands while their warriors continued the war against the English and their allies. The last battle of the war occurred July 13-14, 1637 at the Battle of Munnacmock Swamp in present-day Southport, Connecticut. There, a large group of Pequot warriors were defeated, and their captured people were enslaved or distributed to English allies. The English considered the war over when they learned of the death of the Pequot sachem Sassacus in late 1637 and soon after codified their victory with the Hartford Treaty of 1638.

English Armaments & Tactics

There is an assumption that the soldiers of the Pequot War were inexperienced militiamen armed with antiquated weaponry protected by heavy iron armor. In fact, this characterization is the exception and not the rule. By the time of the war New England militia were largely commanded by officers who were veterans of Europe's Thirty Years War (1618-1648) while nearly half of Pequot War soldiers themselves were veterans of the wars in the Low Countries. In terms of armaments, the Pequot War English soldier more often carried modern snaphaunce or wheellock arms than antiquated matchlock systems still in use. These settler-soldiers adopted armor preferences and modified some weaponry to the realities of northeastern woodland combat. The combination of veteran soldiers, modern armaments and dedicated Native allies all contributed to English victory in the Pequot War (1636-1637).

During the war, Connecticut, Massachusetts Bay, Plimoth Colony and Saybrook Fort forces were generally well armed and utilized a wide variety of weaponry of various European designs. From inception, colonists perceived threats not only from Native inhabitants but from the Dutch in New Netherland who claimed lands as far east as Narragansett Bay and Cape Cod. The Puritans also feared the English Crown itself as growing political tensions between King Charles and Parliament could lead to conflict and threaten the existence of the colonies altogether. New England colonists built defensive fortifications and imported small arms and ordnance without attracting too much attention from London for a time. Colonial leaders went to different lengths to arm their "trayned bands," or militias, often modeling them after familiar Dutch pike and shot formations used in the Low Countries (Figure 2).



Figure 2. Detail of a French engraving depicting pike and shot units with pikemen forming the core of the battle formation flanked by musketeers (Jacques Callot, "Enrolling the Troops" from *The Great Miseries of War*, 1633).

Founded in 1620, Plimoth Colony maintained few firearms for public use, and expected that the majority of colonists purchase their own personal equipment. Early accounts note that Myles Standish, the colony's military adviser, brought a snaphaunce musket with him while several colonists carried matchlock muskets and one Mayflower passenger had a loaded "fowling-piece" on board which accidentally discharged. Writing in 1621, Governor Edward Winslow recommended "bring every man a musket or fowling piece. Let your piece be long in the barrel; and fear not the weight of it, for most of our shooting is from stands" (Figure 3).

The "stand" Winslow refers to is better known as a "musket rest" which consisted of a "U" shaped iron fork fastened to a wooden pole with an iron cap or spike at the base and was used to stabilize heavy muskets of the day. In 1635 John Thompson arrived in Plimoth with a fowler fitted with an early English flintlock weighing twenty-eight pounds with an overall length of 5.7 ft which likely required a musket rest (Figure 4). In 1637 Thompson volunteered for the Pequot War but was never deployed and in 1913 his descendants donated the musket to the Old Colony Historical Society, Taunton, Massachusetts and is on permanent exhibit.

Even with an emphasis on private purchase, Plymouth maintained a small supply of public arms, one of which is preserved at Pilgrim Hall, Plymouth, Massachusetts. The matchlock musket is of Italian origin and is a little over five feet in length (5.125 feet) including a four foot barrel. Its muzzle is .975" diameter but the average barrel bore size is .73" (Figure 5). If the Pilgrim Hall musket

is any indication, it appears that full-bore muskets were desired for military service, but new settlers were encouraged to purchase the more versatile fowling musket. In 1630 Massachusetts Bay Colony was founded north of Plimmoth and the company took steps to purchase public arms while encouraging private purchasing as indicated in the colonial charter which stated “*it shall be lawfull and free*” for individuals in “*our realms or dominions whatsoever to take, leade, carry, and transport...armour, weapons, ordnance, municon, powder, shott...and all other things necessarie for the saide plantacon, and for their use and defence.*” As early as 1628, the company compiled a list of “*Armes for 100 men*” they hoped to obtain, which included two partisans, seven halberds, 80 snaphaunce muskets of varying caliber without musket rests, 10 matchlock muskets with musket rests, 10 6-foot matchlock fowling muskets, 90 bandoliers with bullet bags, 100 swords, 60 sets of armor and pikes for pikemen, 20 half pikes, as well as eight pieces of heavy ordnance for fortifications. It is unclear to what extent this wish list was fulfilled when the “*Winthrop Fleet*” sailed for New England but it reflects a desire to equip their militia with modern arms, 80% of which were flintlocks. A hundred arms were a fraction of those required for the militia and therefor Massachusetts Bay Colony placed the burden of obtaining arms on the settler much like neighboring Plymouth Colony.



Figure 3. Engraving of a Dutch soldier preparing to fire a matchlock musket from a rest (Jacob De Gehyn. *Exercise of Armes*. 1590).

While the versatile fowling-musket was popular in Plimoth and the snaphaunce musket was desired in Massachusetts Bay, shorter-barreled carbines, calivers and pistols were also popular arms at the time of the Pequot War. Such arms were significantly lighter than a full-sized musket and did not require a rest to fire accurately,

but the shorter barrel length greatly reduced their range. The 1599 Dutch regulations dictated a caliver weigh 8.5 pounds, be 4.5 feet in length and have a bore size of .615” diameter to fit a .58” caliber ball (Figure 6). In 1630 the English Council of War similarly standardized carbines at 3.75 feet long with a .58” diameter bore. Such arms could be equipped with any firing mechanism but as favored cavalry weapons most were produced as Wheelock or Flintlock arms since a Matchlock was impractical on horseback. Carbines, or calivers, may have been relatively common in New England by 1635 and appear in Pequot War-era accounts. Winthrop’s history of the Antinomian Controversy (1636-1638), a political-religious crisis in Massachusetts contemporary with the Pequot War, noted that Governor Henry Vane was forced to walk Boston guarded by “*Serjeants*” with “*Halberts or Carbines*” while Saybrook proprietor George Fenwick sent “*6 carabines*” to the fort in 1636. During the withdrawal from Mistick, Captain Underhill recalled how one sergeant made a remarkable shot with “*a Carbine of three foot long.*”



Figure 4. The “*Thompson Fowler*” Ca. 1635 (Old Colonial Society, Taunton, Massachusetts).

The 1630 Council of War standardized pistols at 26” in length with an 18” barrel sized to fire a .58” diameter ball. They were considered close-range weapons which could hit a target at 35 yards and it was a common practice to load them with two lead balls to better the chance of hitting the target. During the Pequot War, officers such as Gardiner and Underhill carried pistols while Fenwick brought pistols with him to New England in 1636. Pilgrim Hall is home to a seventeenth century pistol also attributed to John Thompson whose fowler was detailed earlier which was originally fitted with a snaphaunce lock but was converted in later years to an early flintlock complete with a “*dog*” or safety latch (Figure 7). It is about a foot in length while the brass barrel is slightly over 7” long and is .41” diameter bore. Shot uncovered at the Mistick Fort battlefield site ranging between .50 and .56” diameter could have been fired from 1630 regulation pistols while other lead balls between .35 and .40” diameter could have been fired by an arm like the Thompson pistol.

Findings from several Pequot War battlefield surveys indicate that English forces were armed with a wide variety of matchlock, flintlock and wheelock firearms. This included full-sized muskets, caliver or carbine-sized weapons, fowling muskets and pistols. These firearms undoubtedly varied in terms of lock type, manufacture, country of origin, classification, overall length and caliber. This should come as no surprise considering that the war occurred as New English colonies were in their infancy and relied heavily on privately armed settlers. Some colonies, like Massachusetts, probably equipped their troops with more standardized



Figure 5. Plimoth garrison Matchlock Musket (Pilgrim Hall Museum, Plymouth, Massachusetts).



Figure 6. Dutch Soldier armed with a Caliver, De Gehyn.



Figure 7. The Thompson Pistol. (Pilgrim Hall, Plymouth, Massachusetts).

Connecticut soldiers carried matchlock or snaphaunce muskets and carbines in the fight, noting how:

“souldiers so unexpert in the use of their armes, should give so compleat a volley, as though the finger of God had touched both match and flint...having our swords in our right hand, our Carbins or Muskets in our left hand.”

Musket rests have been recovered from the Mistick Fort site (Figure 8) and lead shot recovered from the Mistick Fort battle-field between .48 and .60” diameters confirm the carbines noted by Underhill were used while larger balls ranging from .60 to .77 inches indicate larger bore muskets (Figure 9). Two matchlock serpentine were recovered at Mistick, one of which was a rare snap-matchlock mechanism where depressing the trigger would release the serpentine that would snap down into the flash pan through the force of a mainspring (Figure 9, lower left). The typical matchlock serpentine was manipulated when a trigger bar was depressed or a trigger was pulled. Additionally, several matchlock trigger bars, or levers, were found at the Saybrook Fort site which were often screwed into the sear bar to manipulate the serpentine (Figure 9, lower right).

Evidence of flint and steel firearms was recovered in the form of a pristine lead flint wrap, a thin sheet of lead used to securely hold a gunflint in the jaws of hammer, likely dropped by an English soldier south of the Mistick Fort site (Figure 10). A hammer fragment and a flintlock frizzen fragment were also recovered from Mistick. The only diagnostic evidence of wheellock weaponry was a heavily used pyrite block recovered at the English allied campsite at

arms from their public stores as evident by Underhill’s description of his company sent to reinforce Saybrook Fort in April 1637 as “completely armed, with Corslets, Muskets, bandileeres, rests, and swords.” During the assault on the Pequot fortified village at Mistick, he indicated that his mixed company of Massachusetts and

Porters Rocks, where they rested the night before the assault on Mistick. It would have been secured in the jaws of the hammer and dropped against a spinning, serrated wheel thus causing sparks to ignite the powder charge. Several frizzen springs, or interior main-spring, fragments were also recovered from each battlefield site.

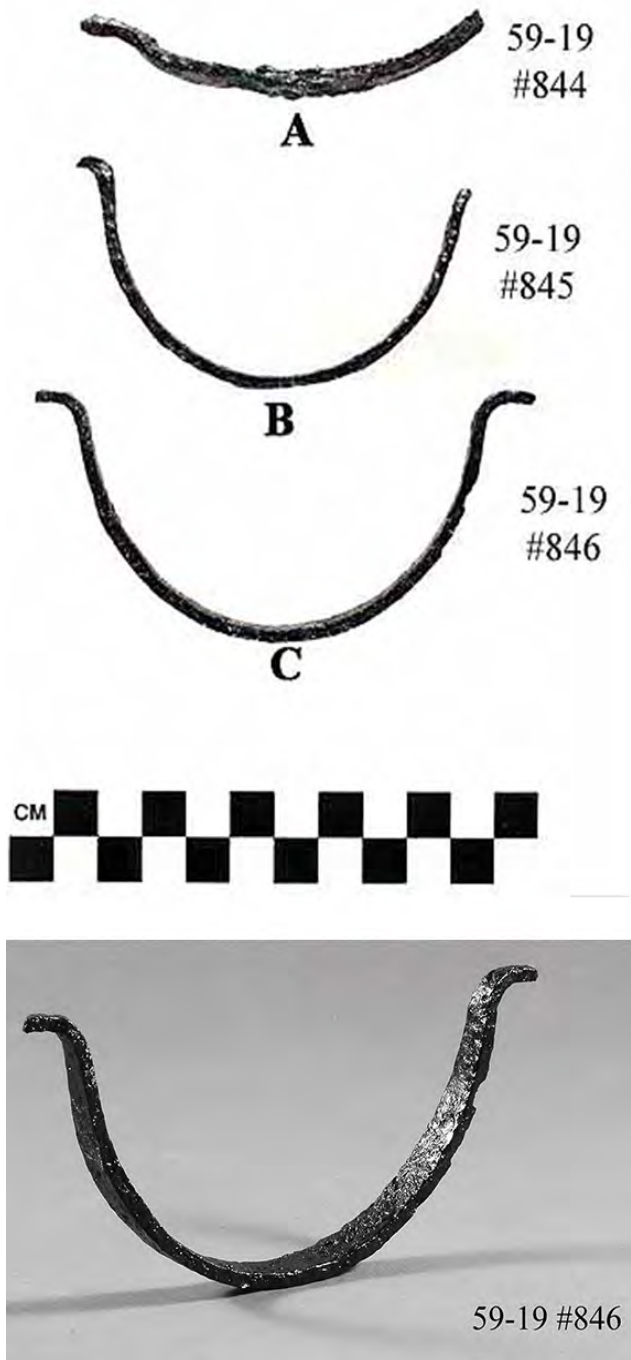


Figure 8. The remains of a musket rest recovered from the Mistick Fort site which was likely constructed domestically in Windsor, Hartford or Wethersfield, Connecticut. It would have originally been affixed to a thin wooden pole by means of an iron strap.

In terms of armor, seventeenth century New England soldiers generally utilized either the iron corslet or leather buff-coat as body armor. The corslet was heavy and limited the wearers' speed and mobility but offered protection against Native weaponry short of musket fire. It was originally issued to European pikemen and the full ensemble consisted of a breastplate, backplate, tassets

to protect the legs above the knee, a gorget to protect the neck, and helmet (Figure 11). This armor was commonly available but most often only breast and back plates accompanied early settlers. During the English invasion of Block Island, Captain Underhill described how another officer, Captain Turner "*himself received a shot upon the breast of his Corselet...and if hee had not it on, hee had lost his life.*" In describing an early war skirmish Lieutenant Gardner noted that the only Saybrook soldier who was armored happened to be wounded in the leg by arrow fire. One of the most surprising discoveries of the Mistick Fort survey was a corslet backplate fragment about a mile east of the fort site lodged under several stones by a stream bank along the English withdrawal route. It is tempting to speculate that an English combatant decided to discard the heavy iron armor on that hot May afternoon next to the cold stream but never returned (Figure 12).

A buff-coat was made of thick leather and meant to be worn under the corslet but in New England it provided sufficient protection against Native arrow fire and offered more mobility than iron armor. There are numerous references to buff-coats during the Pequot War including Gardiner who wrote that during a February 22, 1637 ambush he had been "*Shott with many arrows...but my buff Coate prserved mee; only one hurt mee*" (Figure 13). Both corslets and buff-coats were employed by the English but by war's end many soldiers disregarded nearly all armor in favor of speed and maneuverability.

Iron helmets were the most common armor used in New England and surviving examples fall within three distinct forms: the pikeman's helmet, the trooper's helmet and the cabasset or morion. The pikeman's helmet was standard issued with the corslet and had a wide brim turned down on the sides. An example excavated around Boston in the early nineteenth century is now in the collection of the Massachusetts Historical Society (Figure 13). The trooper, or horseman's helmet, had an iron skull which covered most of the head, a neck guard running off the back of the skull and a pivoted visor often equipped with a barred face guard. The distinct shape led them to become known as "lobster tail" or "lobster back" helmets. An example at the Connecticut Historical Society is attributed to the Reverend John Davenport, founder of New Haven Colony (1638) (Figure 14). The cabasset or morion was a popular infantry helmet which resembled a deep bowl and shaped with an elongated comb along the crest of the helmet with a broad brim turned down to the front and back to protect from sword blows. Captain Underhill's saved his life while landing on Block Island when he "*received an arrow...against my Helmet on the forehead.*" Although the helmet was common among soldiers no archaeological evidence was recovered during the Pequot War battlefield surveys.

Native Armaments

By 1635 the Pequot could field upwards to 1,000 veteran troops and were the most formidable Native peoples in southern New England in terms of armed forces, territorial domain and control of wampum production. Throughout the 1620s they forged a regional confederacy of tribes throughout Long Island Sound and the lower Connecticut valley. At the time of the war two important Pequot sachems, Sassacus and Mononatto, were frequently mentioned as fearless warriors while the very thought of attacking Sassacus' fort during the Mistick Campaign caused English allied warriors to desert. For the first six months of the war, the Pequot won nearly

Figure 9. Lead shot recovered from the Mistick Fort site (top) and matchlock serpentine (lower left) recovered from Mistick Fort battlefield and matchlock trigger fragments (lower right) recovered from the Saybrook Fort site.



Figure 10. Lead flint wrap for a flintlock firearm collected south of the Mistick Fort site (upper left); hammer and frizzen fragment collected from Mistick (upper right); pyrite block for a wheellock arm recovered at the English allied campsite at Porters Rocks (lower left) and frizzen spring from Saybrook Fort battlefield (lower right).



all engagements against English forces. Much of this success was not only due to their early experiences fighting the Dutch and the resulting new tactics but their political skills in maintaining a confederacy of allied tribes.

The “skulking way of war” which often characterizes northeastern Native warfare is not an accurate description of actual seventeenth century combat and it does not convey the complex tactics employed during the Pequot War in response to European battle formations and weaponry. Several early accounts of the inter-trib-

al warfare of the 1620s and the brief Pequot-Dutch War of 1634 suggest opposing forces fought pitched battles between relatively large numbers of combatants' in the open-field. This all changed by 1636 now that veteran Native warriors understood the capabilities and limitations of European armaments as well as the ineffectiveness of massed formations of warriors in the open against musketeers. The Pequot quickly adjusted their tactics to counter English military advantages while maximizing their own newly developed tactics. When the Pequot War began in late August 1636, English soldiers battled small units of warriors, between ten or twenty, who attacked in open order shooting a volley of arrows at their targets while often remaining just beyond musket range. Pequot warriors utilized all forms of cover and concealment to advance against English soldiers with accurate arrow fire at the least armored points – usually the head, neck, shoulders, arms and legs. The Pequot employed strategies to draw English forces close enough to mitigate their superior firepower through ruses, feints, ambushes and quick assaults on the flanks and rear of enemy formations. No longer were massive Native armies employed in battle against European troops with firearms.



Figure 11. Pikeman engraving from De Geyhn's *Exercise of Arms*, Plate III:11.

Pequot warriors typically carried iron edged weapons including knives, axes and sword blades as well as traditional wooden ball-headed clubs. Edward Johnson of Massachusetts described how “the most of them were armed also with a small Hatchet on a long handle” while some “had a small number of Mawhawkes, Hammers...made of stone, having a long pike on the one side, and a hole in the handle, which they tie about their wrists.” The small hatchets referred to are likely European trade axes but the “Mo-

hawkes Hammer” may reference a monolithic stone axe similar to one found in Branford, Connecticut not far from an area known as “Sachem’s Head” where several Pequot sachems were executed during the war. The axe is made from Greywacke stone found around Albany, New York (Mohawk territory) while the form is derived from a hafted celt, a common woodworking tools or weapon of war (Figure 15). It is covered with carvings including a bird of prey for the handle, an owl facing away from the user and the image of a human face towards the user. Pieces of shell, or wampum, were once glued to each side of the axe, and two more formed the eyes of the owl. It dates to at least the seventeenth century as there are remnants of vermilion, a common trade item made of brilliant Chinese red ochre mixed with mercury. It likely belonged to a person of rank, perhaps a sachem, warrior or powwow as similar monolithic axes recovered from Mississippian burial mounds are associated with warriors of high social status. In addition, pole arm weapons were reportedly used. Philip Vincent’s 1637 war narrative mentioned some Pequot warriors carried “*Javelins, &c.*” which suggests a sort of arm intended to be thrown. Early illustrations of Native warriors from Florida, Virginia and New France depict men armed with spear-like weapons (Figure 16).



Figure 12. Pequot War backplate fragment recovered along the English-allied withdrawal route from Misitck Fort compared to an original example from the Plymouth Plantation research collection.



Figure 13. Governor Levitt’s Buff Coat (Massachusetts Historical Society).



Figure 14. Pikeman's helmet found in Boston. (Massachusetts Historical Society, Boston, MA; left). A Trooper helmet attributed to the Reverend John Davenport. (Connecticut Historical Society; right).



Figure 15. A possible "Mohawakes Hammer" collected in Brandford, Connecticut (Office of the State of Connecticut Archaeologist).



Figure 16. Timucuan Indians of Florida marching in a massed formation, some armed with spears. (Jacques le Moyne 1564).

At the time of the Pequot War the bow and arrow was the primary projectile weapon used in open-field combat. Arrows shot at an English landing party at Plimouth Colony in 1620 "were headed with brass, others with hart's horn, and others with eagles' claws." By the

1630's arrow points were generally made from brass cut from sheet brass or brass kettles and occasionally iron. Pequot War projectile points were of two specific types: flat, two-dimensional triangular points and rolled conical points. Within the flat group are many variations of triangular shape, with or without flared "barbs" at the base (Figure 17). The rolled conical points were generally six inches long and rolled to a fine, needle-like, point and sometimes have three-dimensional "barbs" or flares at their base. These cuprous points were often sourced from European kettles, a regular fur trade commodity. During the Pequot War English commanders like Captain Underhill attempted to interrupt Dutch and Pequot trade in fear that they might "goe and trade with them our enemies, with such commodities as might be prejudicial unto us, and advantageous to them, as kettles, or the like, which make them Arrow heads." These cuprous projectile points could easily penetrate European clothing, may penetrate an English buff coats, but were ineffective against iron armor. According to historical accounts and experimentation, the Algonquian bow had a point-blank range of 40 yards, with a maximum range of 120-150 yards if shot at a 45-degree angle, while a bowman could fire up to a dozen aimed shots a minute. One example of a seventeenth century New England bow, the "Sudbury Bow," survives in the collections of Harvard University. Each bow was unique in that each one was made to match the height of the user when unstrung and in the case of the hickory "Sudbury Bow," it was 67 inches long (5.6 feet) (Figure 18).

The Pequot had acquired firearms from the Dutch and French among others since the 1620s and during the siege of Saybrook Fort Pequot forces captured a number of guns from soldiers and traders. Two English girls captured during the Pequot raid at Wethersfield were later rescued and counted seeing at least 16 firearms during their two weeks of captivity. According to Lieutenant Gardiner, the Pequot regularly used their firearms against English forces around Saybrook and captured others in the process:

...the Indians are many hundreds of both sides the river and shoote at our Pinaces as they goe up and downe; for they furnish the Indians with peeces powder and shot, and they come many times and shoot our owne peeces at us, they have 3 from us already, 5 of Capt: Stones, one of Charles.



Figure 17. Triangular and Conical Cuprous Arrow Points recovered from the Mistick Fort site.

Several years after the Pequot War, Dutch colonist Adriaen Van Der Donck detailed the armaments of Native warriors around Manhattan but his description can also be applied to the Pequot warrior of 1636-1637 and other Algonquian men of southern New England.

Their weapons used to be, always and everywhere, bow and arrow; a war club on the arm and, hanging from the shoulder, a shield big enough to cover the trunk up to the shoulders. They paint and make up their faces in such a manner that they are barely recognizable, even to those who know them well. Then they tie a strap or snakeskin around the head, fix a wolf's or a fox's tail upright on top, and stride imperiously like a peacock. Nowadays they make much use in their warfare of

flintlock guns, which they learn to handle well, have a great liking for, and spare no money to buy in quantity at high prices from the Christians. With it they carry a light ax in place of the war club, and so they march off.

Evolving Strategies and Tactics

The leadership and organizational structure of Pequot armed forces are not as well understood as the English. At the time of the war Sassacus was the principal Pequot Sachem but a second sachem named Momomattuck commanded the armed forces. Other military leaders under these sachems known as "Pniese" were men groomed for leadership at a young age and often served as military advisors. Writing in 1623, Governor Winslow of Plymouth described the Pniese with some respect as he noted:

The pnieases are men of great courage and wisdom, and to those also the devil appeareth more familiarly than to others, and as we conceive...to preserve them from death by wounds with arrows, knives, hatchets, &c...yet they are known by their courage and boldness, by reason whereof one of them will chase almost an hundred men; for they account it death for whomsoever stand in their way. These are highly esteemed of all sorts of people, and are of the sachim's council, without whom they will not war...In war their sachims, for their more safety, go in the midst of them. They are commonly men of the greatest stature and strength, and such as will endure most hardness, and yet are more discreet, courteous and humane in their carriage than any amongst them, scorning theft, lying and the like base dealings, and stand as much upon their reputation as any men.



Figure 18. Virginian Indian with strung bow, titled “An Indian wereowance or chief painted for a great solemn gathering” (John White ca. 1587/8).

By the Pequot War, the traditional strategy of fighting in massed formations ended due to the experience of the brief Dutch-Pequot War of 1634 when large groups of Pequot warriors fought Dutch

troops on open ground and suffered the effect of firearms at close range. Pequot tactics varied upon the situation, but Pequot warriors generally engaged the English just out of musket range (approximately 125-175 yards), and in smaller groups (five to 15 warriors). This tactic presented the English with a smaller target and allowed the Pequot to maximize their arrow fire. Pequot warriors utilized natural camouflage and cover of the tall grasses to observe the unsuspecting English before they struck and generally attempted to remain out of musket range but were prepared to fight at close range and charge the enemy if the opportunity presented itself. When Massachusetts Bay invaded Pequot Country in August 1636 they soon found that Pequot forces did not stand and fight in formation as they apparently had a few years earlier during the short-lived Dutch-Pequot War. Governor Winthrop noted that Colonel Endicott “marched after” the Pequot “supposing they would have stood to it awhile, as they did to the Dutch. But they all fled, and shot at our men from thickets and rocks.” The Pequot were also capable of launching organized close range attacks on English forces in order to overpower slow loading English musketeers. In any case, the Pequot tactics ranged from ambushes and sharp skirmishes to pitch close quarter combat as described by an amazed Lion Gardiner who recalled Pequot adversaries who at times charged “to very mussells of our pieces (muskets).” Gardiner provides an excellent description of skirmishing during the Massachusetts Bay invasion of Pequot Country which provides great insights into the nature of Pequot tactics and armaments. At the time Gardiner’s soldiers were loading corn on their boats when they were attacked:

...the Indians set upon them. So they laid down their corn and gave fire upon them, and the Indians shot arrows at them. The place was open for the distance of musket shot, and the Indians kept the covert, save when they came forth, about ten at a time, and discharged their arrows. The English put themselves into a single file, and some ten only (who had pieces which could reach them) shot; the others stood ready to keep them from breaking in upon our men. So they continued the most part of the afternoon. Our men killed some of them, as they supposed, and hurt others; and they shot only one of ours through the leg. Their arrows were all shot compass, so as our men, standing single, could easily see and avoid them; and one was employed to gather up their arrows.



Figure 19. A closer view of Pequot War combat between New England colonial soldiers and Pequot warriors from the Battle of Mistick Fort. Engraving by Captain John Underhill (John Underhill, *Newwes from America*. London: J.D., 1638).

This pattern reinforces the theory that the basic Pequot fighting unit employed against Europeans was groups of ten men (Figure 19). When these companies were integrated into larger units, perhaps 50-100 men (or more) they were led by “Captains,” perhaps Pnieese, who were not sachems. Above the Pnieese it appears a sa-

chem was in overall command of large formations of warriors, and often fought alongside his men in battle. For example, the English mention two sachems killed at Mistick Fort, one of which led a contingent of 100-150 warriors. In this fight the Saybrook responded to the attacks with a defensive skirmish line with long firearms (muskets and fowlers) firing on their attackers while the others who may have been armed with calivers, carbines, pistols or edged weapons only stood at the ready to meet any charge as the other reloaded. Both sides suffered minimal casualties fighting in their respective fashions but ultimately the Pequot sustained their assault and the English were forced to withdraw.

As a result of such experiences English commanders quickly altered their typical command structure to counter Native tactics. Captain Underhill directly commented on this strategy:

I would not have the world wonder at the great number of Commanders to so few men, but know that the Indians fight far differs from the Christian practise, for they most commonly divide themselves into small bodies, so that we are forced to neglect our usuall way and to subdivide our divisions to answer theirs, and not thinking it any disparagement, to any Captaine to go forth against an Enemy with a squadron of men taking the ground from the old & ancient practise when they chose Captaines of hundreds and Captaine of thousands, Captaines of fifties and Captaines of tens: We conceive a Captaine signifieth the chiefe in way of Command of anybody committed to his charge for the time being whether of more or lesse, it makes no matter in power though in honour it doth.

New England militia were generally organized into companies of twenty men. Underhill recalled that during an attack on a Pequot village in August 1636 English commanders “*set our men in battally*” or battalia, which was a formation of two to four ranks of men which allowed musketeers to maximize fire but not to discharge all of their arms at once and opening themselves to counterattack. Underhill described how the English advanced in good European order and “*we rather chose to beat up the Drum and bid them battle, marching into a champion field we displayed our colours, but none would come neere us, but standing remotely off did laugh at us.*” As Native warriors often refused to fight in the open English commanders were forced to give chase and Underhill wrote how “*wee suddenly set upon our march, and gave fire to as many as we could come neere, firing their Wigwams, spoyling their corne... we spent the day burning and spoyling the Countrey.*” English forces suffered no casualties and were later informed by their Narragansett allies that thirteen Pequot were killed and forty wounded.

At the time of the Mistick Campaign English commanders understood that frontal assaults against Native warriors were ineffective due to their open order tactics. This realistic assessment of Pequot forces convinced Captain John Mason to alter his orders from the General Assembly in Hartford which called for an invasion of Pequot Country similar to Massachusetts Bay’s unsuccessful August 1636 attempt that started the war. Underhill and Gardiner convinced Mason to alter the plan and sail east to Narragansett Bay to deceive the Pequot and gather additional Native allies. There Mason conferred with Narragansett Sachem Miantonomi who provided a solid battle plan which encouraged the English to begin “*the assault...in the night, when they are commonly more secure and at home, by which advantage the English, being armed (wearing*

armor) may enter the houses and do what execution they please.” The Narragansett suggested “*that before the assault be given, an ambush be laid behind them, between them and the swamp, to prevent their flight, etc.,*” which was an important insight easily missed by English leaders.

During the May 26, 1637 attack on Mistick Fort English commanders employed new tactics to counter Pequot tactical advantages. Multiple officers (two captains, two lieutenants, and several sergeants) allowed the English force the flexibility to divide into smaller units whenever necessary at different points of the battle. On the approach to Mistick Fort the attack force of seventy-seven men split into two separate companies commanded by Captain’s Mason and Underhill while some 250-300 Native allies encompassed the fort. When each commander prepared to storm the entrances of Mistick Fort, they again split into two companies of about twenty men and began their encirclement. Two groups of twenty men were tasked to storm the entrances and were equipped with iron armor, edged weapons and a variety of firearms (muskets, carbines, pistols) loaded with charges of “small-shot” for maximum effect. When Pequot resistance proved too strong, Mason set fire to the dwellings in the fort. When the fort was fired English forces withdrew to the perimeter and engaged Pequot warriors and non-combatants until all were killed. During subsequent Pequot counterattacks over the next eight hours, English commanders not only split into smaller units but also employed the Saybrook tactic of forming a long file of men to fire on their attackers, although making sure never to discharge all of their weapons at once. In order to maximize their dwindling forces English soldiers were greatly augmented by allied Native bowmen that combined the firepower of muskets with the high rate of fire bowmen could provide. The experience gained during the Mistick Campaign continued to inform the decisions employed by English troops as the war continued, particularly in terms of strategy and armaments, resulting in more mobile and flexible English units augmented with Native allies.

Conclusion

The Battlefields of the Pequot War project which began in 2007 resulted in a significant reevaluation of the arms, armor and tactics employed by Native American and European combatants during the first quarter of the 17th Century. These insights were the result of a constantly evolving methodology due to the complexities and challenges of each particular battlefield site. The resounding success of the project was largely due to the ability and willingness to reassess sources, findings and assumptions on a regular bases as well as the working with scholars from multidisciplinary backgrounds, consulting with tribal communities and descendants of English colonists, integrating a wide range documentary materials, applying combined remote sensing and standard archaeological survey techniques to battlefield sites and studying early examples of New England arms and armor. This project sought to move beyond a simple reconstruction of events based on recovered artifacts but toward a more dynamic interpretation of Pequot War battlefields that interpret the evolution of movements and actions across time and space as was accomplished by Dr. Douglass D. Scott with his watershed analysis of the 1876 Battle of Little Big Horn. Much like Lieutenant Lion Gardiner’s “*three-footed stool*” of “*men, victuals, and munitions*” of the 17th Century, a successful battlefield archaeology project in the 21st Century requires in-depth historical research, flexible archaeological methods and a detailed working knowledge of the arms and armor of the day.

Note:

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um Studies. His second ASAC scholarship was awarded to study Pequot War era armaments as he completed his doctorate in Early America at Clark University. Dr. Naumec served as a Military Historian and Archaeologist for over ten years studying Pequot War, King Philip's War, Revolutionary War and War of 1812 battlefields in New England. He is a collector of U.S. martial arms and militaria with a focus on Civil War small arms, specifically Whitney Connecticut Contract arms.

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ENDNOTES

- ¹ A Lion Gardiner, *Relation of the Pequot Warres: Written in 1660 by Lieutenant Lion Gardener*. Acorn Club, Hartford, CT. 1901, pp. 6-7.
- ² The “Low Countries” is a coastal region in which contains the present-day Netherlands and Belgium and was the site of the Dutch Revolt of 1568-1648. English regiments were sent to the Low Countries to support their Protestant allies. Many English soldiers of the Pequot War were veterans of the Low Countries. Keith Roberts, *Pike and Shot Tactics 1590-1660* Osprey Publishing, Oxford, UK. 2010. pp. 43-44.
- ³ John Winthrop, *Winthrop Papers*, The Massachusetts Historical Society, Boston. 1943, “Lion Gardiner to John Winthrop, Jr., ca. February 23, 1637,” pp. III:419-20.
- ⁴ The author would like to thank the American Society of Arms Collectors for their continued support for graduate through their academic careers who strive to contribute to the scholarly field of American arms and armor research. The author is indebted to Dr. Kevin McBride for to opportunity to work alongside him as his military historian and as an archaeologist for over a decade of conflict archaeology projects and am grateful for his experience, insights, and general knowledge of Southern New England Native American history and archaeology. The author would also like to acknowledge the NPS American Battlefield Protection Program for their work to preserve threatened battlefield on American soil, the Mashantucket Pequot Museum and Research Center (Mashantucket, CT) for their support for the Battlefields of the Pequot War Project, the Old Mystic History Center, the Old Saybrook Historical Society, Fairfield Museum and Research Center, the numerous student archaeologists and interns who assisted in the project over the years, the metal detectorists of the Yankee Territory Coinshooters who helped recover many artifacts, and in particular the efforts of George Pecia, Mike Horan, and Tom Kunkler who proved to be some of the finest metal detectorists in the county. Finally, many thanks to the Naumec family and my wife Maryam who supported me in my studies and my father James P. Naumec in particular who instilled the joy of arms collecting in my life. Thank you all, and the many others who could not be included in this note, who helped make this study possible.
- ⁵ For more information on the NPS American Battlefield Protection Program see: <https://www.nps.gov/orgs/2287/index.htm>
- ⁶ Wampum is white or purple cylindrical shell beads, about a quarter inch in length, and drilled lengthwise and often strung on a cord or woven into belts for ceremonial purposes. The white beads are derived from whelk shells while the purple are fashioned from hard-shell clams. Wampum is an English variation of the Algonquian word wampumpeag and was referred to as Sewant by the Dutch. Faith Damon Davison, “Literature Survey of Wampum” in *Bulletin of the Archaeological Society of Connecticut, Special Thematic Issue: Wampum!* No. 74, 2012 Archaeological Society of Connecticut, Storrs, CT. 2012), pp. 9-22.
- ⁷ The Connecticut River towns levied a force of 90 soldiers and sailors (Windsor – 30, Hartford – 42, Wethersfield – 18) but some of the inexperienced troops were sent home due and replaced by Massachusetts Bay and Saybrook soldiers. Ultimately 77 soldiers participated in the Mistick Campaign, the remainder being naval personnel. J. Hammond Trumbull, ed. *The Public Records of the Colony of Connecticut*. Brown and Parsons, Hartford, CT. 1850. p. 9.
- ⁸ English allied Native forces consisted of approximately forty Mohegans and another forty “River Indians” (Wangunk, Suckiaug, Podunk, Poquonnock) in addition to 200 Narragansett warriors who joined the force during the English allied march through present-day Rhode Island.
- ⁹ This brief historical overview was drawn from the primary accounts of Philip Vincent, John Underhill, and John Mason as well as materials found within the *Winthrop Papers*. Philip Vincent, *A True Relation of the Late Battell Fought in New England Between the English, and the Salvages*. M.P. for Nathanael Butter and John Bellamie, London. 1637; John Underhill. John Underhill, *Newes From America*. Peter Cole, London. 1638; John Mason, *A Brief History of the Pequot War: Especially Of the memorable Taking of their Fort at Mistick in Connecticut in 1637*. S. Kneeland & T. Green, Boston. 1736; John Winthrop, *Winthrop Papers*, The Massachusetts Historical Society, Boston. 1943.
- ¹⁰ During the 1629 – 1630 campaign four thousand English and Scottish volunteers under Dutch command served in four English and three Scottish Volunteer Regiments under Sir Horace Vere. See: Ruth V. Alley, *Pelliana, Pell of Pelham*, Vol. 1, No. 1 Privately Printed, Montpelier, VT 1962. p. 13.
- ¹¹ Dwight B. Heath, Ed., *Mourt’s relation: a journal of the pilgrims at Plymouth*. Applewood Books, Bedford. 1963. pp. 31-37.
- ¹² Heath, Ed., Mourt’s relation. 86; Harold L. Peterson, “The Military Equipment of the Plymouth and Bay Colonies” in *The New England Quarterly*. Vol. 20, No. 2 (June 1947), p. 203.
- ¹³ Old Colony Historical Society, Taunton, Massachusetts. Accession Number: 1913.1_Thompson_Gun.
- ¹⁴ Pilgrim Hall Museum, Plymouth, Massachusetts. Matchlock Musket, Accession Number: PMH1082.
- ¹⁵ Nathaniel B. Shurtleff, Ed., *Records of the Governor and Company of the Massachusetts Bay in New England*. William White, Boston, MA 1852. pp. I:13-14.
- ¹⁶ The list of “Armes for 100 men” also provides insight into the military organization of Massachusetts Bay forces. Shurtleff, Ed., *Records of Massachusetts Bay*, p. I:26.

- ¹⁷ J.B. Kist, *Jacob De Gheyn The Exercise of Armes: A Commentary* (New York, NY: McGraw-Hill, 1971). Plate 4, 29-30.
- ¹⁸ David D. Hall, Ed. *The Antinomian Controversy, 1636-1638: A Documentary History*. Duke University Press, Durham, NC. 1990), p. 254; Winthrop, *Winthrop Papers*. “George Fenwick to John Winthrop, Jr. May 21, 1636,” pp. III:261-262.
- ¹⁹ Underhill, *Newes From America*, p. 43.
- ²⁰ David Blackmore, *Arms & Armour of the English Civil Wars*. Royal Armouries, London. 1990. p. 9.
- ²¹ A pistol recovered at Jamestown was found to be loaded with two pistol balls. Beverly A. Straube, “‘Unfit for any modern service’? Arms and armour from James Fort” in *Post-Medieval Archaeology* Vol. 40, Issue 1 (2006), p. 57.
- ²² Winthrop, *Winthrop Papers*. “George Fenwick to John Winthrop, Jr. May 21, 1636,” pp. III:261-262.
- ²³ Pilgrim Hall Museum, Plymouth, Massachusetts. Matchlock Musket, Accession Number: PMH0332; Beverly Ann Straube, “A Re-Examination of the English-Lock” in *Bulletin of the American Society of Arm Collectors*, 1990, No. 63, pp. 48-50.
- ²⁴ Surveyed battlefield sites include: The Siege and Battle of Saybrook Fort; The Battle of Mistick Fort; The Battle of the English Allied Withdrawal; The Battle of Munnacommock Swamp.
- ²⁵ Underhill, *Newes From America*, p. 15.
- ²⁶ Underhill, *Newes From America*, p. 34.
- ²⁷ Harold L. Peterson, *Arms and Armor in Colonial America 1526 – 1783*. Dover Publications Inc., Mineola 2000. pp. 133 – 149; Straube, “‘Unfit for any modern service’?”, pp. 36–47.
- ²⁸ Blackmore, *Arms & Armour of the English Civil Wars*, p. 63; Peterson, *Arms and Armor in Colonial America*, p. 143.
- ²⁹ Underhill. *Newes from America*, p. 6.
- ³⁰ James Kendall Hosmer, Ed., Winthrop’s Journal “*History of New England. Charles Scribner’s Sons*”, New York, NY 1908. pp. 191-192.
- ³¹ Blackmore, *Arms & Armour of the English Civil Wars*, p. 63; Peterson, *Arms and Armor in Colonial America*, pp. 133-135.
- ³² Gardiner. *Relation*, p. 15.
- ³³ Blackmore, *Arms & Armour of the English Civil Wars*, pp. 14-16; Peterson, *Arms and Armor in Colonial America*, pp. 112-115, 134-140.
- ³⁴ Underhill. *Newes from America*, p. 4.
- ³⁵ William Hubbard, *A Narrative of the troubles with the Indians in New-England*. John Foster, Boston, MA 1677. p. 125.
- ³⁶ The “skulking way of war” was a term coined by historian Patrick Malone most famously in a book by the same title. Malone contends that Natives in the northeast relied exclusively on guerilla warfare and would rarely stand against similarly sized European forces. While this is partially true, the nature of seventeenth century Native warfare varied greatly on the situation. Malone also details the way in which European armaments impacted Native warfare. See: Patrick M. Malone, *The Skulking Way of War: Technology and Tactics Among the New England Indians*. John Hopkins University Press, Baltimore, MD. 1993.
- ³⁷ Sometime in the late 1620’s the Pequot Sachem Tatobam challenged the Wangunk Sachem Sequeen for control of the river valley and according to Dutch sources “these Sakimas or Chiefs agreed to meet and fight in the field, each with his entire force...After three several pitched battles” the Wangunk were defeated and became tributary to the Pequot. John Romeyn Brodhead, *Documents Relative To The Colonial History of the State of New-York* Weed, Parsons and Company, Albany, 1856, p. I:543.
- ³⁸ Edward Johnson, *Wonder-working Providence*. Nath. Brooke, London, 1654, p. 114.
- ³⁹ Greywacke is a variety of metamorphosed sandstone characterized by its hardness, dark color, and poorly sorted angular grains.
- ⁴⁰ Kevin McBride, David Naumec, et al., *Battle of Mistick Fort: Site Identification and Documentation Plan* GA-2255-09-017. Mashantucket, CT. 2009. pp. 38-39.
- ⁴¹ Vincent, *A True Relation*, p. 4.
- ⁴² Heath, Ed., *Mourt’s relation*, p. 37.
- ⁴³ Underhill, *Newes From America*, p. 26.
- ⁴⁴ National Park Service, “History of Armour and Weapons Relevant to Jamestown,” Historic Jamestown, www.nps.gov/jame/history-culture/history-of-armour-and-weapons-relevant-to-jamestown.htm (Accessed January 1, 2010).
- ⁴⁵ Harvard Peabody Museum of Archeology and Ethnology. Object # 95-20-10/49340.
- ⁴⁶ Hubbard, *A Narrative*, p. 53.
- ⁴⁷ Mason, *A Brief History of the Pequot War*, p. 2-3.
- ⁴⁸ Hosmer, Ed., *Winthrop’s Journal*, p. III: 321.

- ⁴⁹ Adriaen Van Der Donck, *A Description of the New Netherland*. University of Nebraska Press, Lincoln. 2008. pp. 100-101.
- ⁵⁰ Hosmer, Ed., *Winthrop's Journal*, p. 228.
- ⁵¹ Edward Winslow, *Good Newes from New-England: a true relation of things very remarkable at the plantation of Plimoth in New England*. Applewood Books, Bedford, 1996. pp. 62-63.
- ⁵² Hosmer, Ed., *Winthrop's Journal*, p. 189.
- ⁵³ Winthrop, *Winthrop Papers*, pp. III: 381-382.
- ⁵⁴ Hosmer, Ed., *Winthrop's Journal*, p. 102.
- ⁵⁵ Hosmer, Ed., *Winthrop's Journal*, pp. 191-192.
- ⁵⁶ Underhill, *Newes From America*, p. 4.
- ⁵⁷ Underhill, *Newes From America*, pp. 14-15.
- ⁵⁸ Hosmer, Ed., *Winthrop's Journal*, p. 189
- ⁵⁹ Mason, *History of the Pequot War*, p. 8.
- ⁶⁰ Scott, Douglas D., Richard A. Fox, Jr., Melissa A. Connor, and Dick Harmon. *Archaeological Perspectives on the Battle of the Little Bighorn*. University of Oklahoma Press, Norman, OK. 1989.

