

**REPORT ON THE
C-1/ RM/ CLARK SITE
PLYMOUTH, MASSACHUSETTS**

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INTRODUCTION

In the 1940s, Henry Hornblower Jr., the founder of Plimoth Plantation museum, began an archaeological investigation of a possible 17th century homesite on his family's Eel River property in the Chiltonville section of Plymouth, Massachusetts. what Hornblower had discovered was one of the first 17th century homesites to be investigated in New England and the site of an important historical event in a little appreciated war.

A series of excavations were carried out at the site between the 1940s and the 1990s, but aside from one undergraduate thesis completed in the 1960s, little has really been written about this important site. Hornblower appears to have had a special place in his heart for this site, and as a result, its field notes and maps are probably the most complete of any site in Plimoth Plantation's collections.

A preliminary report was started by the second excavator Karl Fernstrom, but was not finished before his departure from Harvard. His work formed the basis of E. Sohler Welch III's 1964 Harvard undergraduate thesis on the site. This remains the most complete report on the site and was extensively used for the present document. This was an important report as many of the artifacts recorded and photographed by Welch have since disappeared from the collection.

The site has been determined to be the homesite of William Clark, son of prominent merchant Thomas Clark, and a fairly prominent merchant himself. It has been determined that the type of house that he lived in was of a style commonly used by merchants and people involved in trade in the 17th century. The artifacts from the site reflect his occupation as there appears to be an appreciable amount of trade related material (tobacco pipes, beads, knives, cloth, gunflints, and lead shot). It is believed that an important part of his trading activities probably involved the local Native people, which is what is believed to have resulted in his house being targeted during King Philip's War.

The following report seeks to present more up to date information about his important collection and to be a resource for anyone seeking to learn more about the 17th century archaeology and history of Plymouth Colony.

HISTORICAL CONTEXT

“March 12 (1676). This Sabbath eleven Indians assaulted Mr. William Clark's House in Plymouth, killed his wife, who was the Daughter of a godly Father and Mother that came to New-England on the account of Religion, and she herself also a pious and prudent Woman: they also killed her suckling Child, and knocked another Child (who was about eight years old) in the head, supposing they had killed him . . . And whereas there was another Family besides his own, entertained in Mr. Clarks house, the Indians destroyed them all, root and branch, the Father and the Mother, and all the Children. So that eleven persons were murdered that day, and under one roof; after which they set the house on fire.” (Slotkin and Folsom 1978: 112).

The attack on the Clarke garrison house occurred during the first year of fighting of King Philip's War, fought in New England from June 1675 until approximately 1677. When this war eventually dissipated it left 12 New England towns abandoned and burned to the ground, hundreds of English dead, it

essentially eliminated New England's Native peoples' status as sovereign Nations and in 1692, lead to the end of Plymouth Colony as it was known, combining it with the Massachusetts Bay colony. But, what role did this attack play during the war? Who was involved, why and where did it happen and were the events recorded by colonial chroniclers true, unbiased reports of the events as they occurred, or were they purposefully or accidentally mis-recorded and remembered so that they could be used to further a certain Boston ministers agenda? These are all questions that this work seeks to answer.

William Clark and his family were the inhabitants of the Clark garrison house in 1676. William Clark was the oldest son of a very influential Boston importer, Thomas Clark. He was probably born around the middle 1630s. In the 1660s he married Sarah Wolcott, daughter of another very influential Boston family. Their children were James, John and Andrew. Clark held numerous positions in Plymouth town government such as surveyor and rater but who was William Clark and why was his house attacked?

The Plymouth Colony records are somewhat slim about actually coming out and explicitly stating who just about anyone was, but in Clark's case we can determine it with some certainty and the who is intimately connected with the why. Both William Clark and his father Thomas appear to have been opportunistic merchants. His father appears to have built the house in the 1630s and left or sold it to his son when William married in the 1660s. Thomas moved to Boston in 1655 where he married the daughter of a prominent upper class family. William, while not moving to Boston, also married the daughter of one of the most respected and well off families in Boston, the Wolcotts. It is known from later records that Clark had a warehouse in downtown Plymouth on Town Brook and was the highest rated merchant in town.

But, the warehouse in Plymouth center was not the only place where Clark stored goods. From the archaeological excavation of Clark's house, we can now state with reasonable confidence that he also either stored goods in his house at the Eel River, or most probably, he had another warehouse or trading house near his Eel River home. This, I believe, was the reason why Clark's house was targeted on March 12, because the Natives who attacked on Sunday had probably traded with Clark before at his house and knew that he had goods such as powder, shot and arms that they needed.

Excavations revealed that items relating to trade, such as bale seals, beads, copper scrap, tobacco pipes, five pairs of scissors, buttons and clothing hook and eyes, and six knives are all concentrated to the east of the main house. The current theory that is being tested with the artifact distributions is that this second structure represents a trading house built by William Clark that was used for trading with Natives and with Clark's neighbors.

The hypothesis that his house was attacked because it was used as a trading house is supported by the Plymouth Court records. In 1676 a certain Native woman had identified the warriors that had attacked the house and the court recorded that:

“Keweenam . . . hee went to him (Tatoson) and certified him that hee had lately bin att the house of William Clarke, att the Eelriver, and that his house was slightly fortified, and that it was well furnished with nessesaries, and that his way would be to reparae thither now, and that on the Lords day, the folkes of the house being but three, the most of them would be gon to meeting, and they, being there, might descerne it; and incase they left a man att home or soe, they might soon dispatch him, and then they would mett with noe opposition. . . the said Tatoson went towards Plymouth, and on the morrow following, in the morning about 9 or ten of the clocke, hee with his companie did this cruwill

villanie. . . . Keweenam . . . hee did not fully owne the said accusation, onely hee owned that hee was att William Clarkes house a little before the facte comitted, and in the company of Tatoson the day before . . . and had given him information of the weakness of the house, both with respect to fortification and men...”(Records of the Colony of New Plymouth 1676:205).

The attack on Clark’s house was not a random act of violence by a marauding band of Indians, as has been often claimed, it was, in fact, a well thought out attack that was done on Sunday with the expectation that their would be no one there to resist them that they would have to kill. It is truly amazing that this Keweenam had been to Clark’s house the day before it was attacked. Obviously Clark knew the southeastern Massachusetts Natives, and was probably trading with them before and during the war.

The military artifacts recovered from the excavations and the identification of his house as a garrison house support the theory that Clark’s house was targeted because he maintained a store of military goods. Military artifacts from this site took the form of large amounts of lead waste, twisted lead kames, and lead shot from around the main house hearth and between the two structures. This pattern was also repeated with flint chipping waste and gunflints. These were concentrated around the main house hearth, to the immediate south of the main house, possibly near where the door was located, and between the two structures. Gun parts in the form of a worm and barrel fragments were also recovered from the main house. Three pewter or lead bandolier bottle caps were also recovered near the hearth. It appears that Clark kept the items which would have been most desired by both English and Natives fighting the war within his main house where they could be most easily protected. No evidence of any sort of defensive palisade was uncovered by any of the excavations at the site.

Now that we can more reasonably say who William Clark was and why his house was attacked the question is, how many persons were killed? Increase Mather, living in Boston and receiving his information at least second-hand, reported that “eleven persons were murdered that day” by 11 Natives, yet the Plymouth Colony records, the official records of this singular attack on Plymouth state that only one person, Sarah Clark, was killed “ Att the same time three other Indians appeered before the councell, whose names were Woodcocke, and Quannapawhan, and one called John Num; the two former were accused by an indian squa, that they were present and actors in that bloody murder of Mistris Sarah Clarke . . .” (Records of the Colony of New Plymouth 1676:205). When all accusations were made final, 11 Natives men in all were accused and found guilty of the attack on the Clark house.

Why is there a discrepancy between what Increase Mather reported and what was reported by the Court? What was the real number of persons killed? I believe that it was only one or possibly two and not 11 and that Mather either intentionally or accidentally inflated the figure. But why would Mather do this, was it accidental or was there a more insidious reason behind it? In Increase Mather’s mind, the attack on William Clark’s house was not a random act of violence, it was punishment from God on persons who were not strictly following the tenets of Puritanism, it was a sign for all to see, that this is what happens when the faith is neglected for the pleasures of the world.

Increase Mather did not hide his reasons for writing his history of King Philip’s War, on the contrary, he was very open about what the war meant to him, it was a sign sent by God to punish New Englanders for their fall from grace. Misunderstanding and misinterpretations of events that occurred

during the war were reported throughout Mather's work. Richard Slotkin and James Folsom in their work, *So Dreadful a Judgment*, report that such misunderstandings were essential to the concept of history that Mather employed and advocated (Slotkin and Folsom 1978:67).

Increase Mather felt that the actual persons fighting the war were inconsequential to the fact that God had caused the war to occur. To this end he sought messages from God in the battles and occurrences of the war and “. . . providential deaths and rescues, incidents in which peculiar ironies and coincidences are prominent, become central to the narrative.” (Slotkin and Folsom 1978:67). The result of this focus on any event, no matter how trivial, that shows how God had punished the Puritans for their fall from grace, had the intent of reinforcing Mather's main intention of writing the narrative which was “. . . to restore a religious world view, a God-centered consciousness of historical process, and a sense of man's powerlessness and absolute dependence on the will of an angry God.” (Slotkin and Folsom 1978:67).

With the preconceived notion that all actions of the war took place as a result of the Puritan's sins and worldliness, how would Mather have reacted when he heard of the attack at William Clark's house? It has to be assumed that Mather would have known more about William Clark and Sarah Wolcott than he recorded in his writings. He must have known that Clark was a merchant and he did know that Sarah's family had come to Massachusetts Bay for religious reasons. From informant intelligence or a reading of the Plymouth court records, he would have known that the Natives who attacked Clark's house on the Sabbath were probably on friendly or at least trading terms with him. For Mather the situation could have been summed up as follows: The house of William Clark, one, if not the, most prosperous merchant in Plymouth who had trading connections with Boston, was attacked on the Sabbath and a number of people who had not gone to the Sabbath meeting, including Sarah Wolcott (Clark), daughter of pious parents who had come to the New World on matters of religion, were killed by warring Natives. He may have also heard that the number of people involved was 11, but had not or did not care to make the distinction that the 11 persons involved were not 11 English who were killed but 11 Natives who attacked. I believe that the number of persons killed was inconsequential to Mather, the most important aspect of the attack, that aspect which reinforced his belief in a God sent war due to the colonists having strayed from Him, was that the persons killed were not at Sabbath meeting and that the most important one killed was Sarah Wolcott (Clark) the second generation of a pious religious family. Because he viewed the war in religious terms, he continually sought signs from God in the incidents and signs that happened after these sort of God centered events were extra important. At the same time, as he was reporting the war on his terms, he was also criticizing the worldly spirit of a whole class of Puritans for whom the world had become primarily “. . . a place in which to achieve wealth and status and for whom the orthodox purity is less important than political and social compromises that would ensure them protection of life and property against taxation of the Crown and the vexation of the Indians.” (Slotkin and Folsom 1978:71). Mather felt that “. . . to pursue one's calling primarily to accumulate wealth was to violate the spirit of the Puritan ethic.” (1978:71). The incident at the Clark house provided him with the perfect example of how a prosperous merchant and the worldly gains that resulted from such a position could corrupt the daughter of a pious first family of Boston to the point that she stayed home on the Sabbath. As punishment for her fall from grace, God had sent the Natives to her just as he had sent them to all of New England, to remind them that they must regain their true course. It was unimportant to him truly if one or 11 persons were killed, but he may have consciously or unconsciously felt that 11 persons absent from the Sabbath meeting being killed was even better fuel for his fire, even if he was not sure of all the facts in the case.

The reanalysis has led to new insights regarding one of the incidents during King Philip's War. The site has long been believed to be the location of the Clark Garrison house, which was attacked and burned on Sunday March 12, 1676 at 9:00 in the morning. Until now, all of the documents and data relating to this site have not been completely synthesized but with the current work that is being undertaken, it can be said with a high degree of confidence that this is in fact the site but that the incident that brought the site to prominence has been misrepresented throughout the centuries. Using the Plymouth Colony records, it was learned that William Clark was the most prosperous merchant in Plymouth in the late seventeenth century with family, as well as professional ties, to Boston importers and merchant families. Using the archaeological data, it was learned what Clark's house looked like and that the site was occupied, probably by his father Thomas, prior to William's family's occupation. Archaeologically it was also determined that there is a high probability that there was a trading house located to the east of the main house which, when tied in with the Plymouth Court records, probably catered to Natives. Clark's dealings with the local Natives can be gleaned by the Plymouth records where at least twice he was the English man who was authorized by the Court to purchase lands of the Natives. The types and quantities of various artifact types such as bale seals, tobacco pipes (both clay and Native-made soapstone), buttons and clothing eyes, knives, beads and scissors also make the case that he probably traded with both English and Natives, but catered to the Native trade at this site.

But the Court records also provide us with a different view of the event which made the site and William Clark infamous. Increase Mather was the first person to publish a report on what occurred when the house was attacked in 1676. He stated that 11 persons were killed, with Sarah Clark being the one he was most concerned with. He never stated who the other 10 people were and did not seem as concerned with them. The Plymouth Court records stand in sharp contrast to Mather's writings. They state that the Natives who were brought to court were tried for the murder of Sarah Clark and no one else. There was also one Native's own testimony where he stated that they knew that there were only three persons living in the house and that they specifically attacked because they thought that all of the occupants would be at Sabbath meeting. Why the discrepancy between Mather and the Plymouth Court's records?

I believe that Mather either purposefully or accidentally inflated the number killed. Accidentally it may have been done because there were 11 Natives involved and perhaps he only heard that 11 persons were involved and assumed it was 11 English killed. It may have also been a case of the telephone game where he was reported information that was distorted before it reached him.

Purposefully it may have been done as propaganda that he hoped would heighten the impact of the attack that was so close to the heart of Plymouth. The attack would seem more dreadful if it involved more people than just Sarah and perhaps a child. It served Mather's agenda to inflate the number of person's killed. Mather wrote his book to show that God had sent this war upon his chosen people in this New Jerusalem to punish them for their worldliness and fall from their Puritan mission, just as God punished people in the Bible. He held up the death of Sarah Clark as a prime example of how this person who was from a pious family that had come with the first migration for religious reasons was killed by the Natives as punishment for all the colony's sins. At the same time, the attack could be held up as an example for others. The people, in Mather's account, were in their house on the Sabbath, not at meeting where they should have been, and they were the family of, or were associating with the wealthiest merchant in Plymouth. To Mather, merchants were seen as prime examples of the

worldliness that was infecting the colony and the attack on a merchants house and killing of his family served as a fine lesson to all against the dangers of materialism over spiritualism.

ENVIRONMENTAL SETTING

The site is situated on a 33' high terrace overlooking the lower reaches of the Eel River approximately three miles southeast of the original site of the Plymouth Plantation (**Figure 1**) (note: all figures are presented in Appendix A). Soils at the site are carver coarse sand (CaE), part of a large northwest to southeast band extending along the coast here. Fresh water springs are believed to exist along the slope down to, and along the bank, of the Eel River in close proximity to the site. The land is currently used by Plimoth Plantation as grazing field for the animal display at the Nye Barn (**Figure 2**) and in the 20th century it appears to have always served as field and farmland (**Figure 3**).

EXCAVATION HISTORY

The Hornblower family owned the property that both the RM site and what would become Plimoth Plantation sat on. Prior to the incorporation of Plimoth Plantation and the commencement of construction of the reconstructed village on the property, two locations had been extensively collected by the Hownblowers (especially by the brothers Harry and Ralph) and their gardener Jesse Brewer. These areas were the present location of the Native Homesite, and the RM site.

The RM site was identified through surface collections made after plowing and rains. Harry Hornblower and the Harvard Excavators Club in 1940 (George 1987: 2). The Club excavated there again the following year, and throughout the 1940s the site was collected at and excavated by Hornblower, Brewer and others. The late Dr. James Deetz stripped off topsoil and dug several test trenches at the site in 1960. George cited him as saying that all the artifacts were gone but that some of the features precociously excavated remained identifiable (George 1987: 2).

Henry Hornblower II first became interested in the site when he was a youth growing up on the family estate, which later became what we now know as Plimoth Plantation. Hornblower's initial explorations of the site took the form of field walking after ploughing and rain storms. In September, 1934 he records in his collecting journal that he field walked the "Corral (at) Eel River Farm". On September 22 he recorded " Today the corral was ploughed and I hunted it. After it had been ploughed a heavy rain fell, giving me a good chance." The Corral was where Plimoth Plantation's Native site is today. Hornblower made numerous finds here but was intrigued by a story he had heard regarding an Indian attack:

"September 28, 1935

Saw this excellent collection (Seymore Collection) again + heard of an Indian massacre that happened near Googy Moon's house. It involved 3 Indians who lived at either behind Vaughans house (where Mr. Brewer got his 54 in one day) or at the Canal and several white people. All were Tomahawked-this was in the late 18th century (1781?). I am not at all sure but there was an article in the Old Colony or Plymouth News some time ago."

He wasn't sure of the details, but he had the general idea regarding the attack on the Clark Garrison House.

Hornblower excavated a portion of the C1 site (as he called it) in 1942 with member of the Harvard Excavator's Club. They focused their activity at the southern side of the site where he had found several historic period surface finds. After they had finished their excavations he covered the excavated area with tar paper and backfilled it with 5-8" of soil.

Karl Fernstrom of Harvard University excavated at the RM site in the fall of 1949, specifically from October 27 to November 26. He first opened a trench composed of 2 x 2 m squares around what appeared from surface finds to be the outer edge of the site. He then moved his excavations to the northwest area at the top of the knoll abutting Hornblower's 1942 work, and soon found concentrations of rocks that he interpreted as possibly being foundation stones. He then excavated what Hornblower identified as a dry well, a depressed area in the field that filled with water when it rained. Fernstrom found that the well was, in fact, a cellar hole that was six feet deep with a clay floor. On the floor were a large number of items (an iron lamp, scissors, nails, knives, a mattock eye and blade, sections of iron strap hinges, window leads, fragments of square bottles, English flint, a silver coin and much pottery). Above the floor was a thin but continuous layer of charcoal and above this was mixed earth originating from the slumping of the cellar walls, and finally on top a fill of loose stones. He identified that the top of the cellar appeared to be curbed with dry-laid stones while evidence preserved on the floor indicates that the walls were "spiled" with upright post driven into the subsoil a few inches apart. Finally, Fernstrom excavated two exploratory trenches down the knoll towards the river and joined them with trenches at right angles at each end. he reported that little was found in these trenches.

Hornblower and Fernstrom's excavations both used a 2 meter grid, although the two grids overlapped, they were slightly off. Plow disturbance was found to a depth of 25 cms and this was removed and sometimes screened. The subsoil was troweled and features were excavated by trowel, photographed, and drawn. Their locations were placed on a large overall map for the site. Fernstrom quartered the cellar hole and excavated first one half and then the other. A total of 6933 square feet were excavated (624 square meters) on the crest of the knoll and its northern slope (**Figure 4**). Four main features were identified:

- a hearth and associated chimney fall and fragments of footings of main building measuring 8 x 5.2 m (26.66 x 17.33')
- a second hearth and associated chimney fall
- a cellar hole measuring 3.2 x 2.4 m (10.66 x 8') and 1.8 m (6') deep
- an 18th-19th century pit with sheep skeletons

When plans were made to build Plimoth Plantation, the site area was envisioned by Hornblower as being the location of a recreated 17th century farm (**Figure 5**). These plans were never carried out and the site lay relatively undisturbed until the 1960s. In July of 1960, Dr. James Deetz used a bulldozer to strip off the topsoil and expose the cellar hole and some of the pits that had been previously excavated (**Figure 6**). In 1968, he also excavated several units to the east of the main area excavated in the 1940s, but the artifacts from these excavations were not processed until the 1990s.

Deetz reexcavated the area where the two previous excavators had worked at the RM site in 1960. Not much is known concerning what he found, since he either did not take any notes or did not leave them at the Plantation when he left. Only black and white photographs were noted by Douglas George in 1986. The materials from the 1968 excavation were rediscovered in 1995 and were cleaned and cataloged by the author. The exact locations of where he dug was visible in 1995 as a series of trenches and spoil heaps in the RM site field.

George directed an archaeological survey of a portion of Plimoth Plantation's property in 1987 prior to the parcels development as a bus parking lot. The surveyed parcel was located to the immediate west of the main portion of the RM site, although they did not know that at the time. George's 1987 testing consisted of the excavation of 50-cm-square shovel test pits (STPs) within an area measuring 105 x 105 meters (**Figure 4**). STPs were placed 15 m apart on transects spaced 15 m apart. Several test pits were moved due to presence of construction equipment or supplies. Each STP was excavated to at least 60 cmbs except where prevented by rock or clay. Excavation found a 14-24 cm thick plowzone overlaying an intact B1 horizon. From 15-60 N and 0-20 W the original ground surface had been recently compacted by heavy equipment and a 50 cm layer of sand, gravel, and construction material had been added to grade the area. From 75-105M and 15 W to the eastern edge of the field the Apz and the upper portion of the B1 horizon had been removed during construction. The southeast portion of the field had also been disturbed when the access road from Route3A was constructed.

A total of 57 pits were excavated in within the field and adjacent proposed picnic area (George 1987: 4). Artifacts were recovered from 64 of the 81 test pits excavated during the survey (George 1987: 4). The test pits were "scattered" across the area and include 4 with only prehistoric material, 10 with only historic, and 25 with both historic and prehistoric. Most of the material was recovered from the Apz horizon with only a few artifacts being recovered from the B1 subsoil. One intact prehistoric feature was identified.

Prehistoric artifacts included one Archaic Notched projectile point (Brewerton?) (15N/15E), 58 felsite or quartz flakes, 26 pieces of quartz shatter. the projectile point was recovered from the edge of a road ditch in disturbed soils. Flakes were distributed from the 45 W line to the 45 E line and from 15 N to 150 N. The flakes from 150 N were recovered from recent trash deposits and appear to have been redeposited.

In order to assess the site and determine if there were any undisturbed subsurface remains at the site, nine of 50 x 1 m and 1 x 1 m units were also excavated. Three units were placed within the area believed to have been the focus of the 1940s excavations (15N/15E, 45N/15E and 58N/0W). Few artifacts were recovered from these units. Four units (15N/15W, 15N/45W, 58N/30W, and 60N/45W) were placed west of the presumed 1940s excavation area. These units produced more artifacts than the units to the east but the artifacts were found only in the plowzone. The assemblage consisted mainly of creamware and pearlware as well as one pipe stem fragment dating to the 17th century (15N/15W). Prehistoric artifacts were limited to 57 flakes also from the plowzone. Two units were excavated east of the presumed 1940s excavation area (69N/30E and 69N/15E). The first units appears to have been disturbed by past stripping. A prehistoric pit feature extending 20cm into the subsoil was encountered in 60N/30E. The pit was filled with clam and mussel shell, charcoal, and a snapping turtle foot. two felsite flakes were also recovered from this feature.

In 1995, when testing was done for a fence line to the east of the RM site, it was discovered that there were a number of open trenches and large back dirt piles in the remaining area of the RM site. They were first believed to have been evidence of Fernstrom's excavations but were later discovered to belong to Deetz's 1960 dig. Surface collections were made along the edges and one small trench located on the western side of the end of the trench was excavated. It was discovered that a great deal of material, especially small material, was missed. The original trench was 5 cm wide and 160 cm long. The trench was reexcavated so that the undisturbed portions of the site were left undisturbed. The final depth of the trench was 40 cm. Backdirt pile B1 was bisected by an east to west line and the southern portion was bisected and each side excavated in a single 30 cm level measured down from the apex of the pile.

EUROPEAN TRADING IN NEW ENGLAND

A brief look at the previous trading ventures and the items which were traded to the native people in New England, and especially in southeastern Massachusetts is necessary to understand the trading situation which was being entered into by the Plimoth colonists. Once previous trading voyages are understood, the choice of Manamet for the first trading house of the Colony can be more fully understood.

The first recorded trading encounter in New England occurred in 1524 and involved the Florentine sailor Giovanni da Verrazano who was sailing for France. Verrazano arrived in Narragansett Bay in April of 1524 and traded with the natives (Parker1968:14). He stated that the people were apparently unfamiliar with Europeans and were very willing to trade and host the visitors. The natives were first enticed to trade by tossing "some little bells, and glasses and many toys" (Parker1968:14) to them as they came to Verrazano's ship in their own boats. The Europeans remained in the harbor until early May and Verrazano stated that of all of the goods they traded to the natives "...they prized most highly the bells, azure (blue) crystals, and other toys to hang in their ears and about their necks; they do not value or care to have silk or gold stuffs, or other kinds of cloth, nor implements of steel or iron." (Parker 1968f: 16). It was also noted that the natives here possessed ornaments of wrought copper which they prized greater than gold. The copper may have come indirectly through trade with natives to the north who traded them from European fishermen or it may have been native copper from the Great Lakes or Bay of Fundy regions.

Leaving Narragansett Bay and traveling to the north, they came to a land where the people did not grow crops, this most likely was around the present area of the Saco River in Maine. Here the crew found that the natives were much more reluctant to have intimate trade with the explorers. "If we wished at any time to traffic with them, they came to the sea shore and stood upon the rocks, from which they lowered down by a cord to our boats beneath whatever they had to barter, continually crying out to us not to come nearer, and instantly demanding from us that which was to be given in exchange; and they took from us only knives, fish hooks and sharpened steel." (Parker1968:22).

Obviously at this time, the natives in Narragansett Bay accepted trade items from Verrazano which through European eyes were merely toys and baubles. They had no use for metal knives and appear to have been accepting European objects that enhanced the culture from decorative and probably spiritual aspects. Verrazano himself writes that they did not want the gold because it was the color that was

considered very ordinary, whereas blue (azure) and red were those held in the highest esteem. There was the extra attraction that these items were alien to them and came from strangers from unknown parts. The natives further to the north appear to have had more sustained relations with Europeans and they had moved past the phase where the Europeans instilled a certain sense of wonder. They now appreciated not items that spiritually or decoratively enhanced the culture but rather ones that were of a more functional nature, metal knives and fish hooks.

The next major explorer to visit New England was Bartholomew Gosnold who arrived in Maine in May of 1602. He immediately saw six natives "...in a Basque shallop with mast and saile, an iron grapple, and a kettle of copper...one appparelled with a waistcoat and breeches of black serdge...hose and shoes on his feet..." (Parker1968:34). It would appear that between the time when Verrazanno had visited Maine and Gosnold's arrival, the natives in the area continued to be outfitted with European merchandise either through trade or other means. Later that month Gosnold arrived at the Elizabeth Islands off Martha's Vineyard. They traded with the first natives they encountered, giving them "certain trifles, as knives, points, and such like, which they much esteemed." (Parker1968:38). Gosnold's crew, in return for the "trifles" received many different types of furs from animals such as beavers, luzernes, martens, otters, wild-cats, black foxes, conie (rabbit) skins, deer and seals as well as cedar and sassafras which was much prized as a cure-all in Europe. Of particular note is his description of the great store of copper artifacts which he saw people wearing and using. He said that all of them had

" chaines, earrings or collars of this metall; they head some of their arrows here with (it), much like our broad arrowheads, very workmanly made. Their chaines are many hollow pieces semented together, ech piece of the bignesse of one of our reeds, a finger in length, ten or twelve of them together on a string, which they wear about their necks; their collars they weare about their bodies like bandoliers a handful broad, all hollow pieces, like the other but shorter, foure hundred pieces in a collar, very fine and evenly set together. Besides these they have large drinking cups, made like sculles, and other thinne plates of copper, made much like our boar head speares, all of which they little esteem, as they offered their fairest collars or chaines for a knife or trifle....I was desirous to understand where they had such store of this metall, and made signes to one of them....who taking a piece of copper in his hand, made a hole with his finger in the ground, and withall, pointed to the maine from whence they came." (Parker1968:44).

The native informant asked by Gosnold as to where they received the copper from was probably either signing that it came from the mainland, possibly he meant through trade with natives or Europeans or he may have been referring to a native historical tale as to the origin of the copper. What is interesting is the great store of copper possessed by the natives and the desire that was present to trade for metal knives. It would appear that between 1524 and 1602 they had begun to see a value in steel knives and they had expanded their use of copper to create beads and arrowheads, whereas in 1524 they were noted as having only breastplates of copper.

Samuel de Champlain, sailing for France, visited the area from Maine to Cape Cod in 1605 and 1606 and while his observations on native hairstyles and dress are invaluable, he says precious little about trade with them. He does state that they traded food such as biscuits and bagatelles as well as knives, paternosters (a religious medal), and trifles to the natives and received furs and tobacco in return (Parker 1968: 80).

He also reports that he noticed that they were in the habit of stealing what they wanted. This is interesting since it is not noted by any of the other earlier explorers to the area. This may have been a result of failing relations between the southeastern New England natives and the Europeans. It appears that relations truly started to become strained when Martin Pring visited in 1603. At this time he stated that they brought along two mastiffs which they would release upon the natives if the English felt threatened (Parker 1968:57). It can be observed that after this rather negative experience with the Europeans only a few years before, the natives in 1605 would feel indifferent about stealing from them. This would symbolize a lack of respect towards the Europeans on the part of the natives, and previous feelings of wonder associated with the Europeans may have become strained by the time of Champlain's voyage.

Captain George Waymouth, in 1605, visited the northern regions of New England, fished and traded for furs. In return for the furs, they gave away many knives, combs, glasses (mirrors), bracelets, brooches, rings, chains, peacock feathers, a shirt, tobacco pipes, biscuits and sugar candy (Parker 1968:113). Waymouth's visit appears to have gone better than Verrazanno's in 1524 and it also appears that he was well suited to trade with the natives, being stocked with many "trifles" to trade.

The final major trading venture that is recorded for the New England area was the voyage of Captain John Smith in 1614. Smith chronicles his travels in New England and stated the success that he had in fishing and trading. Relating his trading activities in Maine, Smith stated that ".wee got for trifles neer 1100 Bever skinned, 100 Martins, and neer as many Otters; and most of them within the distance of twenty leagues....but Eastwards our commodities were not esteemed, they (the natives) were so neare the French who affords them better.." (Parker 1968:214). Looking back at the previous traders and explorers to New England, Smith's account strengthens the notion that there are riches in furs and fish to be taken in New England and these can be traded for what was seen as mere "trifles" and "baubles" in the European's eyes.

Generally, trading with New England natives in the century prior to the 1620 colonization initially took the form of a ceremonial exchange of gifts by explorers and the natives contacted. The Europeans with "trifles" and "baubles" consisting of bells and crystals reciprocated gifts of tobacco and skins to early explorers in the southern New England area. The natives in the Maine region were more interested in trading for less symbolic items. Their desire for knives and hatchets would soon come to characterize native to European exchange in New England. Smith states that the natives were shrewd traders favoring whatever trader could offer the best and most desirable merchandise to the natives. If the French had the materials most desired, then the natives would easily leave the English to trade with them and vice versa. This was the situation that would be encountered by the Plimoth colonists upon their arrival and throughout their trading relations with the natives whom they traded.

Trading Agreement in England

The Plymouth colonists needed to find financial backing for the emigration to the New World. Since most of them were not members of the upper class of English society, they needed someone or some group to provide them funding for ships and supplies. Thomas Weston, a trader in the Low Countries of Europe, eventually became interested in the colonists possibly, as McIntyre believes, to settle and provide a permanent post for fishermen in Northern Virginia (McIntyre 1963: 13). He introduced them to the Merchant Adventurers, a group of wealthy London investors in the New World trade. As the agreement was originally stated, the company the colonists formed with the Adventurers was to be a joint stock fund. Each person over the age of 16 was rated at 10 pounds, this was one share and each colonist who furnished himself with 10 pounds of provisions was worth 20 pounds or two shares. The joint stock company would continue for a period of seven years and all profits from "trade, traffick, trucking, working, fishing or an other means...remain in the company until the division." (Morsion 1984:40). By the time of the August 5, 1620 sailing of the Mayflower and the Speedwell, the colonists were already between 1200 and 1600 pounds in debt. Upon reaching the New World, the colony initially attempted to repay their debts by fishing but they found that they could not compete with the fishermen to the north. It was soon decided that trade with the natives would prove to be the means of repayment of the debts to the Merchant Adventurers.

The colonist's attempts at trade began with their first face to face meeting with the native inhabitants in March 1621. On Saturday March 16, 1621, the colonists presented to Samoset, the first native to speak to them, a knife, bracelet, and ring and he promised to .."bring with him some of our neighbors, with such beaver skins as the had to truck with us." (Heath 1963:53). When the treaty was affirmed between Massasoit and the English later in the month, Massasoit was given a pair of knives and a copper chain with a "jewel" in it and his brother Quadaquina was given a knife and a "jewel" to hang in his ear (Heath 1963: 192). The colony continued throughout the early months of 1621 to encourage Massasoit and other natives whom they met with, to trade furs to them for what the colonists referred to as trifles; beads, knives, and bracelets.

The colonists made their first voyage to actively seek out trade, on September 18, 1621, to the Massachusetts, around present day Boston (Heath 1963:77). Here they only received a few skins. They sent their first shipment to repay their loan to the backers in November aboard the Fortune. This was a full store of clapboard and two hogsheads of beaver and otter skins. Bradford states that they were at a disadvantage when they initially began their trading here because "neither was their any amongst them that ever saw a beaver skin until they came here and were informed by Squanto." (Morsion 1984:94). The estimated that this first shipment was worth 500 pounds. Unfortunately, a French ship stole the shipment on its way to England (Morsion 1984:107).

Trading continued the next year with a return voyage planned to the Massachusetts Bay natives. It appears that in these early years of the colony, the settlers sphere of trading was limited to the areas around them that could be easily reached in a day or two of sailing. The years 1622 saw the settlers receive their first shipment of trading goods, although it was by somewhat surreptitious means.. The colony was able to dearly purchase a "...store of English-beads (which were then good trade) and some

knives..." from an exploration and trading ship that was charting the harbors between Virginia and Cape Cod (Morsion 1984:112). The goods were purchased for the few beaver skins they had in their stores.

The Plymouth settlers soon realized that European goods were not the only items sought for by the natives far to their north. They learned that the natives on the "maine" desired corn and beans as well as European items. As a way of entering into trade with these natives, they began to purchase corn and beans from the native people around Plymouth and Cape Cod. . During one voyage to Cape Cod in 1622 the were able to trade for 26 or 28 hogsheads of corn and beans (Morsion 1984:114). These were to be used by the colonists for their own provisions and also were sometimes traded to the natives to the north for furs that would be sent back to England.

A second, more extended, trading visit to Cape Cod began in October of 1622. At this time Myles Standish and Tisquantum were to lead a party of men on a trading mission to Cape Cod, but Standish fell sick and Bradford took his place. They desired to round the south end of Cape Cod and trade for corn on the south side, possibly down into Narragansett Bay (Young 1974:299). Tisquantum was brought along as a guide because he said that he had "twice passed the shoals of Cape Cod, both with English and French." (Young 1974:300). As a result he would have known how to get by the dangerous shoals. Unfortunately, Tisquantum fell sick and died and with no one else able to navigate the shoals, they decided to trade on the northern side of the Cape at Manamet. There he traded for corn and left it there in the charge of the leader, or sachem, of the community, Canacum (Young 1974:305).

Standish and some others went to fetch the corn from Canacum in March of 1623 after he was fully recovered. This party probably traveled as far up the Manoscusset river, at the northern entrance to the present day Cape Cod Canal, as they could and then walked overland to Manamet. It was here that Standish found out that the natives of Cape Cod were in confederacy with those of Wessagusset (Weymouth, Massachusetts) where some other English colonists were abusing natives and provoking them. Later that March, Standish led a force against the natives at Wessagusset and slew several. Those natives on Cape Cod, fearful due to the fact that the English knew that they were in a confederacy with Wessagusset:

"... forsook their houses, running to and fro like men distracted, living in swamps and other desert places, and so brought manifold diseases amongst themselves, where of very many are dead; as Canacum, the sachim of Manamet, Aspinet, the sachim of Nauset, and Iyanough, sachim of Mattachiest...certainly it is strange how many of late have, and still daily die amongst them....because the fear they set little or no corn, which is the staff of life, and without which the cannot long preserve health and strength.... none of them dare to come amongst us." (Young 1974: 345)

This incident would have seriously affected the native people on Cape Cod. The native economy would have been impacted by the fact that families were not planting corn and they would not have had

enough to sustain themselves through the winter, let alone trade with the English. As a result, the English began searching elsewhere for trade.

The spring of 1622 marked the colonists first voyage to the coast of Maine, where they discovered that a vast quantity of furs were to be traded from the natives there (Heath 1963: 293). Eventually, they began using native trade routes that had been established among the Wampanoag and their Abneaki neighbors to bring native corn to those natives who lived north of the Saco River in Maine. These natives had acquired a taste for corn and readily traded for it. When it could not be traded for, they organized raiding parties to travel south to steal it. As early as 1622 some English noted the desire of the natives to acquire the corn for their winter stores (James 1963:19). After this initial foray into Maine, the colonists were not able to further prosecute the trade until 1625.

What they did do was to begin to explore to the south of Cape Cod for the possibility of trade there. Emanuel Altham led their first trading voyage there in 1623 (Altham 1622:99). Altham sailed around Cape Cod into the Narragansett's territory but returned saying that "...that they made a poor voyage of it. Some corne and beaver they got, but the Dutch used to furnish them with clothe and better commodities, having only a few beads and knives, which were not ther much esteemed." (Morsion 1984:139). The western shore of Narragansett Bay appears to have been the furthest south that the English had explored in their search for furs. It would still be a few years until they reached the Connecticut River's rich supply.

By the time of the arrival of the colonists, it appears that the natives in southern New England differed from those encountered by Verrazano with regards to trading. The items traded from Europeans may have no longer held the same mystical, spiritual quality which it did one hundred years earlier. The southeastern New England natives whom the Plymouth colonists encountered were now more like those whom Verrazano traded with in Maine. They knew which types of items they desired from the Europeans and no longer were satisfied with baubles. They now desired metal tools and "useful" items more often with beads and bracelets remaining as trade items of lesser value. Some natives also appear to felt it was acceptable to take what they wanted from the colonists, if they could get away with it. In 1623, Winslow recorded that while Standish was on a trading mission at Cape Cod, beads, scissors and other "trifels" were stolen out of his ship (Heath 1963: 304). This incident shows the types of items that the colonists had to trade. The natives were in the position to trade with whomever they desired and often times this meant the Dutch. This was due to the fact that the Dutch were better supplied for trade. The colonists often complained to their backers in England that they were not being supplied with any good items to trade to the natives, and how could they expect to repay their debts without them (Morsion 1984:99).

The first big break for the colonists in their search for furs appears to have occurred in 1625 with a very successful trading voyage to the Kennebec River in Maine:

"After harvest this year, they sent out a boat's load of corn 40 or 50 leagues to the eastward, up a river called Kennebec.....God preserved them and gave them good success, for they brought home 700 pounds of beaver, besides some other furs, having little or nothing else but this corn which themselves had raised...." (Morsion 1984:178).

Also in 1625, the Merchant Adventurers in England broke up because they did not see any profit to be made in the colony (Morsion 1984:165). This left the Plantation without any financial backing from England. The reasons why the colony was not turning a profit at this time had to do with the losses they encountered when sending goods back to England. Bradford stated that " the many losses and crosses at sea, and abuses of seamen, which have caused us to run into so much charge, debts, and engagements as our estates and means were not able to go on without impoverishing ourselves." (Morsion 1984: 173). The Adventurers were charging the colonists 40% interest to carry goods to the colony and 30% interest to return to England, in total the colony was paying 70% interest on the goods they received and sent (Morsion 1984: 175).

The losses and crosses cited by Bradford included two ships that were lost in 1625. One had been fishing and was ordered to go to Bilboa or Sebastians to sell their fish. It was stated that the haul of fish from the two ships would have brought them 1800 pounds sterling, but the largest of the ships put in at Plymouth, England for fear of the French war and they made hardly anything on the venture (Morison 1984:176). The smaller ship, which carried fish and 800 pounds of beaver and other furs, was taken off of Plymouth, England by a Turkish pirate ship and lost (Morsion 1984: 176).

The next year Allerton was sent to the few remaining Adventurers to secure a deal that would ensure the colony would not be lost by their lack of support in England. This was a continuation of the negotiations that were begun there by Standish the previous year (Morsion 1984:177). Allerton was commissioned with securing much needed provisions and trade goods for the colony at the same time. While he was away, the colony received word that a plantation at Mohegan was breaking up and that they were selling off their goods. The colony saw this as an opportunity to purchase trade goods and Bradford, Winslow and David Thompson of Piscataqua traveled there (Morsion 1984: 181). The total cost for the goods came to 400 pounds sterling. It is not known what was purchased from this plantation. The colony also discovered that a French ship had been cast away at Sagadahoc (Kennebec River) in which were many Biscay rugs and other goods that had fallen into the hands of some fishermen at Damariscove. These were bought with Thompson for 500 pounds sterling, and was mostly paid with beaver furs and goods which were trade the winter before (Morsion 1984: 182). Bradford states that "With these goods and their corn after harvest, they got good store of trade, so as they were enabled to pay their engagements against the time, and to get some clothing for the people." (Morsion 1984: 182).

1627 Trading

The year 1627 represented a pivotal year in the colonists trading ventures in New England. The colony's seven-year contract with their London backers, the Adventurers, came to an end in this year. The settlers were to have paid back their backers by this time and would have been free from their debts. But, because of Isaac Allerton's unscrupulous business tactics, the colonists no longer owed several hundred pounds, they now owed 1800 pounds to the Adventurers. Bradford, Standish and Allerton decided to become Undertakers of the Plymouth colony in order to undertake the payment of this debt. The management of trade was no new matter to the Pilgrims. They had decided when they first landed that they would pursue trade for the purpose of paying off the debts. To this end, in 1623 when the Anne landed with more colonists, those in Plymouth told the newcomers what the rules were for living there. The fourth rule stated was "That (according to the agreement the marchants made

with them before the came) they are to be wholly debared from all trade with the Indeans for all sorts of furr, and such like commodities, till the time of the comunallitie be ended." (Morsion 1984:129).

Allerton returned in 1627 with trade goods and a new agreement from the Adventurers (Morsion 1984: 185). The Adventurers responsibilities to the colony were to cease and the colony needed to only pay the 1800 pounds sterling owed to them and their debt would be considered paid. The chief men of the colony and eight others who had joined together for the discharge of the debt, supported the proposition. These men were William Bradford, Myles Standish, William Brewster, John Howland, John Alden, and Thomas Prence and they were known as the Undertakers (McIntyre 1963:47).

These Undertakers then reorganized the colony so that all free men would have a single share in the undertaking and every father was able to purchase as many shares as there were people in his family (Morsion 1984: 187). This essentially meant that all of the settlers in the colony could not leave until the debt was paid off, although many of them had hoped that after their seven years together they would have been now free to strike out on their own and leave the palisaded village. This trading partnership was to last for six full years beginning in September of 1627.

Once it was agreed that trade would be pursued the next problem was where to locate the site for the pinass to be built. They did state that " The chief places aimed at (for trade) were to the southward of Cape Cod." (Heath 1963: 299). The problem was that the shoals of Cape Cod did not allow them to pass easily to their south. The fact that they were not having a great deal of luck with their trading thus far, leads to the question of where to build a trading house. A strategic location was selected at the southern mouth of what is now the Cape Cod Canal on the Manomet River and :

"They resolved to build a small pinass at Manamet, a place 20. mile from the plantation, standing on the sea to the southward of them, unto which by another creeke on this side, they could cary their goods, with 4. or 5 miles, and then transport them overland to their vessell: and so avoyd the compasing of the Cap-Codd, and those dangerous should, and so make the voyage to the southward in much shorter time, and with farr less danger. Also for the saftie of their vessell & goods, they builte a house their, and kept some servants, who also planted corne, and reared some swine, and were always ready to goe out with the barke when ther was occassion." (Morsion 1984:193).

One of the problems with the location of the house at Manamet is the actual boundaries of Manamet in the 1600s. What the Pilgrims referred to as "Manamet" was a large tract of land that was utilized by the native people of that village. The location of what the natives knew as Manamet and what the English recognized as such is important to note. Wampanoag village names seem to have referred to specific features of the natural environment to identify them. The name Manamet has been interpreted to mean " the place of the burden carriers", "the place of the watch tower", and "the place where there is a way between". The most likely interpretation may refer to a place where there is a watchtower or high promontory. This is believed because the area of White Horse Beach in present-day Plymouth, was also called Manamet. White Horse beach is at the bottom of a high cliff that in past times may have been

used by the natives to watch for European ships. There is no reason why this area would have a name associated with carrying burdens or ways between.

On Cape Cod, Manamet referred to "Frenchman's Point" in present day Bourne. The village itself probably stretched from Buzzard's Bay possibly to Cape Cod Bay. This would have encompassed both the Manamet river, which empties into Buzzard's Bay, and the Monoscusset River, which empties into Cape Cod Bay. The principle summer quarters may have been at Frenchman's Point and the winter quarters at Herring Pond and Bournedale. This would have been an ideal place for a village, located between two navigable rivers, they could control access across to Cape Cod from the mainland. The main seat of the village that the colonist visited was probably in present day Bournedale.

The first reference that the Plimoth colonists make to Manamet was near the end of July in 1621. At this time a young boy by the name of John Billington became lost in the woods outside of the plantation and eventually ended up at Manamet. Both Bradford and Winslow relate these events (Morsion 1984: 87, Young 1974: 217). Canacum, the sachem of Manamet, sent the boy to Aspinet, the sachem of Nauset (present day Eastham). From this trip, Winslow described Manamet as thus:

"This town lieth from us south, well near twenty miles and stands upon a fresh river...It will bear a boat of eight or ten tons to this place. Hither the Dutch or French or both use to come. It is from hence to the bay of Cape Cod eight miles out of which bay it floweth into a creek some six miles almost direct to the town. The heads of the river and the creek are not far distant." (Young 1974:307).

This report fully supports the idea that the town lay between the two rivers at Bournedale. If the distances given by Winslow are compared to a modern map, then the present location is very near the present day Sagamore Bridge and Bournedale. The fresh river referred to by Winslow was the Manamet River and the creek that flowed to the town was the Monoscusset (Scusset). Support for the translation of Manamet as the place of the watchtower comes from Winslow's statement that the French and Dutch would come there to trade. The natives may have either erected a watchtower, or more likely used the a high point to watch for them in the spring.

Post-1627 Expansion of Trade

The situation concerning the colony's trade after 1627 was a very complicated matter. During the next ten years, various scandals involving Isaac Allerton's designs and an increased number of trading posts, created a complicated story. It was one that focused on Maine and Connecticut and left out the trading house at Aptuxet. This was probably due to the fact that the trading house at Manamet ceased to exist shortly after its creation.

The year 1628 saw a large shipment of otter skins being shipped out of Plymouth and bound for England. This shipment was made up of 220 otter skins, a few mink and a few muskrat with a total value of 78 pounds 12 shillings (Morsion 1984:197). This was one of the largest shipments of furs to actually make it to England in the 1620s. Allerton traveled to England again this year to prevail upon Mr. James Sherley to lessen the interest rates which the colony was being charged and it was agreed

upon that if Sherley, Mr. Andrews, and Mr. Beauchamp were allowed to be stock holders in the company, they would eliminate the interest owed to them (Morsion 1984: 198). The Undertakers, who were willing to do almost anything to lessen the interest, readily agreed to this. They now felt that with Sherley as their London agent they could be guaranteed fair rates.

When Allerton returned to the colony in the spring he brought with him their supplies and goods for trade. The supplies he brought this time offer a glimpse into the needs of the plantation: shoes, leather, cloth and Irish stockings, pitch, tar, ropes, twine, knives, scissors, rowel (sic), rudge (coarse thick woolen cloth), lead, shot, powder, hatchets, hoes, axes, scythes, reaphooks, shovels, spades, saws, files, nails, iron pots, drugs and spices all amounting to 232 pounds sterling (Morsion 1984:200).

Allerton returned to England a second time this year and this time he returned with such a great deal of personal goods which were mixed with the colony's that Bradford stated that they truly began to dislike the course he was following (Morsion 1984:211). Most importantly for the plantation, Allerton brought the patent that the colony desired to set up a trading house on the Kennebec. Allerton had to return to England many times to enlarge and finalize it. The colony now erected a trading house on the Kennebec at the site of present day Augusta, Maine called Cushnoc. They "furnished the same with commodities as the fishermen had traded with them as coats, shirts, rugs and blankets, biscuit, peas, prunes, etc. And what they could not have out of England, they bought of the fishing ships..." (Morsion 1984:221). The expansion of the trade away from the colony to Maine was a pivotal step for the colonists. They recognized the vast potential for obtaining furs in this area and appeared to have focused all of their trading energies in Maine. The house at Aptucxet may have been abandoned at this time as it truly served no real purpose. The only use the house may have served is to obtain the wampumpeag beads from the Pequots and Narragansetts, or the colony may have obtained them from the Dutch. As Bradford stated when de Rasiere visited in 1627, it took them two years to trade away the wampumpeag they had been given by the Dutch, they did not view it as a hot commodity at the time. At the end of the year, Allerton returned to England to enlarge the patent because it was so poorly bound.

The year 1629 began with the colonists still not knowing about their patent to the Kennebec. It appears that Allerton was using his position as a go between with the backers, primarily Mr. Sherley, in England, as a means to further his own ends. The second installment on the Undertaker's debt was paid in this year (Morsion 1984:214). Allerton's dealing with the colony became even bolder in 1629, as he pushed the limits of the plantation's patience to extremes. He brought back Thomas Morton who the colonists had roused out of his settlement at Merry Mount (Quincy) the previous year because he was instructing the natives in the use of firearms (Morsion 1984:204). Allerton went so far as to use Morton as his scribe within his house in the Plymouth (Morsion 1984:216). Allerton again brought many goods back from England which he sold for his own profit, charging the freight cost to the colony.

One of the most heinous actions on Allerton's part was to bring a Mr. Ashley who was " ...a very profane young man, and he had for some time lived among the Indians as a savage and went naked amongst them and used their manners, in which time he got their language." (Morsion 1984: 219). It appears that Allerton and Ashley desired to establish a trading house on the Kennebec further up the river from the plantation's trading house and cut off the trade from the colony (Morsion 1984: 220).

After landing at Penobscot, in Maine, Ashley had the audacity to ask the colony for a store of wampumpeag and corn to establish himself and even asked the colony if they would join with him in the trading. The colony felt that the whole idea was Allerton's and, so as not to offend Mr. Sherley, who liked Ashley, they joined with him and sent Thomas Willet to look after Ashley (Morsion 1984:219). Allerton's intentions to make this trading house prosper over the colony's became obvious when, instead of delivering the trading goods he had brought back from England to the colony, he delivered them to Ashley (Morsion 1984: 220). The colony was forced to buy goods from fishermen and to buy cotton and Kerseys, because they had no trading cloth, from Allerton. Allerton's final deal of the year was to procure a bargain load of salt from some fishermen in Maine, which he wanted to sell the salt immediately for approximately 113 pounds sterling (Morsion 1984:221). Winslow came up with the idea of storing the salt in Maine and building drying stages there. What they would then do was to hire a fishing ship from the West Country of England to come fishing there, fill the hold with trade goods such as bread, peas and cloth and have them come to the salt (Morsion 1984: 221). This would save them the freight charges. It seemed to be a worthwhile idea that would profit the colony. Unfortunately Allerton had other plans which again undermined them.

Allerton was sent back to England at the end of the year to secure a fishing ship to implement the plan. He sent the ship the *Friendship* back to utilize the salt but the ship was filled with two packs of Barnstaple rugs and two hogshead of metheglin (a fermented herb drink) when it arrived at Plymouth (Morsion 1984: 228). It seems that the captain was given instructions by Allerton to land at Saco and in Boston and unload most of the cargo on the ship (Morsion 1984:230). Allerton had purchased these goods for settler's in the Massachusetts Bay colony. Allerton also purchased a fishing ship called the *White Angel* with the Colony's funds which he desired to use to pursue bass fishing (Morsion 1984:229). Bradford responded to this by stating that "Bass fishing was never looked at by them....they looked at it as a vain thing, that would certainly turn a loss." (Morison 1984:229). The Colony directly told Allerton this when they saw him next. Allerton responded by selling off many of the goods on the *White Angel* for beaver and bought linen, cloth, bed ticks, stockings, tape, pins, rugs, and other goods for the colony presumably at higher rates than if he had purchased these goods in England (Morsion 1984:231). At the same time Allerton said that if the Colony felt these goods were not sufficient compensation, he would take them.

Mr. Sherley in England saw nothing amiss with Allerton's behavior and he even wrote to the Colony and told them that Allerton had fulfilled and even superseded his obligations by not just hiring a fishing ship, but buying a fishing and trading ship for the Colony's use (Morsion 1984:230). The Colony now saw "...plainly that Mr. Allerton played his own game and ran a course not only to the great wrong and detriment of the Plantation who employed and trusted him, but abused them in England also in possessing them with prejudice against the Plantation, as that they would never be able to repay their moneys, in regard to their great charge." (Morsion 1984:232). Debate would now have begun in Plymouth as to what shall be finally done with Allerton. Winslow had been told the previous year that if he felt that Allerton was not prosecuting their cause that he had the power to fire him, and now, serious solutions were sought.

Meanwhile, Allerton went bass fishing and had a new plan to make the Colony money. He felt that he could load the *White Angel* with fish and then travel to Oporto, Portugal and sell the whole thing

(Morsion 1984: 232). The Colony said no, but it shows how far reaching connections with European countries could be.

Allerton's associate Ashley in Maine had been undermining the Colony's position there. Early in the year he had gathered together his first load of beaver, half of which belonged to the Colony, and shipped it to England for his own profit. He was furnished with more and better trade goods in England by Sherley at Allerton's insistence and was better stocked than Plymouth (Morsion 1984:233). Late that year, Plymouth's man Willet arrested Ashley for selling powder and shot to the natives (Morsion 1984:232). Ashley was sent back to England and then went to Russia to follow the beaver trade there, and died on a trip back to England from Russia (Morison 1984: 233). Plymouth now had control over the trading houses in Maine. This is very suggestive that they, now more than ever, would focus their attention north rather than south and west for trade. If one considers that fact that they knew that they could make a profit in Maine but were hampered from doing so by a lack of trade goods from 1628-1630, then it would be logical that they would have taken their goods and labor from Aptucxet and sent it to Maine . This would have allowed them to initially battle Allerton and Sherley for the trade and to attempt to turn a profit where it was obvious more profits were to be made.

1631 opened with Allerton being discharged from his employment for the Colony (Morsion 1984:237). Edward Winslow initially filled the position, and his younger brother Josiah later took over. Allerton's commission was now demanded of him as it had been in 1629, when he was initially suspected (Morsion 1984: 238). Allerton first said that it was among his papers and he would give it to them before he went, he then said that he would send it by boat from the eastward (from the north), but he could not find it and would find it while he was on a ship to England. It somehow ended up in England in the hands of Sherley who would not release it (Morsion 1984: 238).

The trouble with Allerton was far from over. It was determined that Allerton owned the White Angel and the whole story with this ship and the Friendship was finally straitened out (Morsion 1984: 241). Business now turned to Allerton's account books. It took two to three years to disentangle the logic of the books and it found that he had also "screwed up" his father-in-law Elder Brewster's accounts (Morison 1984 :242). Once all was said and done the Colony determined that it owed 4770 pounds 19 shillings 2 pence sterling and 1000 pounds for purchases yet unpaid (Morsion 1984: 243). This was up from the 400 pounds sterling they owed in 1628. The Colony realized that Sherley was also to blame, for it was found that he had charged some things twice, once in the Colony and once in England. They also realized that the situation concerning the obtaining of the patent was just a ruse between Allerton and Sherley to have a pretense for Allerton coming to England (Morsion 1984: 243). Allerton had now wholly deserted them and was selling goods to any that would buy from him. Concurrently he established a trading house further up the Penobscot river from the Colony's other trading houses to supplant the trade there (Morsion 1984: 244). The French attacked this house with two traders being killed and the goods and the rest of the men being carried to France. The French then moved further down the Penobscot and attacked the Colony's trading house and carried away 300 pounds sterling in beaver and 100-200 pounds sterling in trading goods such as coats, rugs, blankets and biscuit (Morsion 1984: 246). It is interesting to note that wampumpeag was not listed among the lists of trade goods stolen.

After Allerton had been dismissed, the Colony's trading future and the prospect of paying off their debts seemed very hopeful. Bradford echoed these sentiments when he stated "Though the partners were thus plunged into great engagements and oppressed with unjust debts, yet the Lord prospered their trading, that they made yearly large returns and had soon wound themselves out of all if yet they had otherwise been well dealt withal..." (Morsion 1984:252). Plymouth grew and with the founding and prosperity of the Massachusetts Bay Colony, Plymouth prospered by the trade in corn and cattle to them. Towns were founded to the north of Plymouth; Duxbury, Marshfield and Kingston. The Colony had one of their first large shipments of beaver to England this year as well with 800 pounds of beaver and some otter skins shipped out on the Lyon which arrived in Boston in September (Morsion 1984:254).

The following year, 1633, Plymouth Colony ventured upon a trading house on the Connecticut River. "Having had formerly converse and familiarity with the Dutch ...they seeing them seated here in a barren quarter (for trade), told them of a river called by them the Fresh River, but is now known by the name of the Connecticut River, which they often commended unto them for a fine place both for a plantation and trade, and wished them to make use of it." (Morsion 1984:257). The colony viewed the land and met with the Mohegan who wished them to settle and trade there to be allies against the Pequot. They seated themselves in such a way as to be able to receive the trade from the inland since there was no great trade on the coast.

Trade continued for the next two years but was not commented on to any extent by Bradford and the next year we have details of the trading ventures is 1636. This year it was decided that no more beaver was to be sent to England until they had come to a final agreement with their partners in London (Morsion 1984:288). They had sent 1150 pounds of beaver, 200 otter skins, 55 minks, and 2 black foxes at the end of the 1635 but this was to the last shipment for a while (Morsion 1984: 286). Presumably they had continued to be unfairly treated by their merchants and desired to have the matter settled. Bradford also states that there was a great sickness in London at the time and the merchants there could not deal with a great influx of skins (Morison 1984:288).

Trade between the Dutch and the Colony continued through this time. A Dutchman came to the colony from the Dutch West Indies Company in New Netherlands and gave them a good store of trading goods such as Dutch roll (tobacco), kettles and other goods totaling 500 pounds sterling (Morsion 1984: 286). Later in the year it appears that they were able to resume sending shipments to England. They sent 1809 pounds of Beaver, 10 otter skins at one time and 719 pounds of beaver and 199 otter skins at another time (Morsion 1984: 286). The magnitude of the number of skins sent back to England between the years of 1631 and 1636 can be seen in Bradford's tallying of their shipments:

Date sent	Beaver (lbs)	Otter skins
November 18, 1631	400 lbs	20
July 13, 1632	348 lbs	147
1633	3366 lbs	346
1634	3738 lbs	234
1635	1150 lbs	200
June 24, 1636	1809 lbs	10
1636	719 lbs	199
Total	12,150 lbs	1156 skins

The prices for the various skins fluctuated throughout those years, but Bradford calculated that they had sent close to 10,000 pounds sterling worth of beaver and the otter skins were used to pay the freight costs for shipping (Morsion 1984: 289). By the end of the year, the Colony felt that their debts were paid off. The main reason this was accomplished was that they had a new accountant without selfish interests (Morsion 1984:289).

The formal end of the trade was acknowledged by Bradford to have occurred in 1638. At this time cattle and corn were selling for high rates and Plymouth Colony was supplying Massachusetts Bay Colony with much of their needs "...so as other trading began to be neglected, and the old partners (having now forbidden Mr. Sherley to send them anymore goods) broke off their trade at Kennebec and, as things stood, would follow it no longer. But some of them, with other they joined with, being loath it should be lost by discontinuance, agreed with the company for it and gave them about a sixth part of their gains for it..." (Morsion 1984: 302).

The Kennebec trade was sold out of the Colony's hands in 1660 for 500 pounds sterling for the Colony's use (Records of the Colony of New Plymouth Vol 3: 194-195). This did not mean that people were free to pursue their own trading interests with the Native people. For example, in February of 1636/37, John Jenney, Thomas Willett, and George Watson were caught trading for corn with the Natives. They were forced to forfeit half of the corn's value to the Colony as punishment (Records of the Colony of New Plymouth vol 1: 50-51). Soon after, the Colony began the process of decriminalizing trade and making trade with the Natives free to all- with some stipulations. In December of 1640, Plymouth Colony issued the following court order:

"Whereas the trade is not now followed by any man, and there may be some smale thinges some tymes had of the Indians in the plantacions wth in the govment, and that an auncient act doth restraine all psons, wth out the consent of such as have the trade, to trade or traffic with the Indians or natiues, it is thought meete by the Court, that if any inhabitants wth in the govmnt shall trade wth the natiues in any of the plantacons wth in the patent, for corne, beades, vencion, or some tymes for a beaver skine, hee shall not be reputed nor taken to be a transgressor of the said acte." (Records of the Colony of New Plymouth Vol 2: 4)

After 1640, trade in Plymouth Colony was split between that followed by the Colony, or at least supported by the Colony in Maine at Kennebec, and that pursued by individuals. Various laws were enacted between 1639 and 1656 regarding what could be traded to the Natives (Records of the Colony of New Plymouth Vol. 11: 43, 58, 184-185):

- 1639 - no liquor to be traded to the Natives (unless in sickness or disease)
- no military arms (guns swords, powder or shot) to be traded to the Natives
- 1644 - no one may repair the guns of the Natives
- 1651 - any Natives killing a wolf would receive a coat made of trading cloth
- 1652 - no selling casks to the Natives
- 1656 - no selling barques or boats sails or rigging to Natives
- no selling horses to the Natives

In 1668, several towns came before the court to petition for the sale of powder, shot, guns, and money (gold and silver) with the Natives, with expressed purpose to acquire the pork that the Natives were carrying to Boston to sell (Records of the Colony of New Plymouth Vol. 5, 11-12). The laws against trading these things to the Natives was repealed in 1669.

This was the history of trading into which William Clark entered in the 1650s to 1660s. Due to the fact that we know from the historical records that he had a warehouse in downtown Plymouth and the fact that it appears he had trade goods at his house on the Eel River, he was probably trading to both the English colonists and the native people. He may have traded to the English out of his warehouse and to the Natives out of his house. He came to age in a time when trading was becoming freer and less regulated by the colony, meaning that he was freer to trade than his father. The question then becomes, what did he trade.

Trading Goods

Three sources can be looked at to see what was being traded to the Natives in the 17th century. The first are the actual historical records of explorers and the Plymouth colony. The second are the inventories of known merchants. The final source is archaeological.

Between 1524 and 1620, several European explorers visited New England and all traded with the Natives. The types of goods traded included little bells, glasses, toys, knives, blue crystal, fishhooks, and sharpened steel (Verrazano 1524), knives and points (Gosnold 1603), biscuits, bagatelles, knives, and paternosters (Champlain 1605), and knives, combs, mirrors, bracelets, brooches, rings, chains, peacock feathers, shirts, tobacco pipes, biscuits, and sugar candy (Weymouth 1605). In return they received beaver and other fur bearing animal skins, tobacco, and sassafras.

Generally, trading with New England natives in the century prior to the 1620 colonization initially took the form of a ceremonial exchange of gifts by explorers and the natives contacted. The Europeans with “trifles” and “baubles” consisting of bells and crystals reciprocated gifts of tobacco and skins to early explorers in the southern New England area. The natives in the Maine region were more interested in trading for less symbolic items. Their desire for knives and hatchets would soon come to characterize native to European exchange in New England. Smith states that the natives were shrewd traders favoring whatever trader could offer the best and most desirable merchandise to the natives. If the French had the materials most desired, then the natives would easily leave the English to trade with them and vice versa. This was the situation that would be encountered by the Plimoth colonists upon their arrival and throughout their trading relations with the natives whom they traded.

By the time of the arrival of the colonists, it appears that the natives in southern New England differed from those encountered by Verrazano with regards to trading. The items traded from Europeans may have no longer held the same mystical, spiritual quality which it did one hundred years earlier. The southeastern New England natives whom the Plymouth colonists encountered were now more like those whom Verrazano traded with in Maine. They knew which types of items they desired from the Europeans and no longer were satisfied with baubles. They now desired metal tools and “useful” items more often with beads and bracelets remaining as trade items of lesser value. Some natives also appear to have felt it was acceptable to take what they wanted from the colonists, if they could get away with it. In

1623, Winslow recorded that while Standish was on a trading mission at Cape Cod, beads, scissors and other "trifels" were stolen out of his ship (Heath 1963: 304). This incident shows the types of items that the colonists had to trade. The natives were in the position to trade with whomever they desired and often times this meant the Dutch. This was due to the fact that the Dutch were better supplied for trade. The colonists often complained to their backers in England that they were not being supplied with any good items to trade to the natives, and how could they expect to repay their debts without them (Morsion 1984:99).

The types of goods recorded in Bradford's journal consists of knives, copper chain, and English beads (1621), beads, knives, scissors (1622), coats, shirts, rugs, blankets, biscuits, peas, prunes (1628), bread, peas, cotton, kersey cloth, and trading cloth (1629), and tobacco and kettles from the Dutch (1636). The records of the Colony of New Plymouth state that trading cloth was often used, but any kind of firearm or weapon was prohibited before 1669.

Three merchant inventories were reviewed- John Barnes (1671), Captain Thomas Willett (1674), and Edward Gray (1681). It is somewhat difficult to separate what was a trade good and what was personal property as in neither of the 1670s inventories, was a distinction made for material in a warehouse versus material in the house. When the inventory said something ridiculous like 42 yards of cloth, it was assumed that this was a trade good and not a personal good. John Barnes had the following items that were assumed to be trade goods: 42 yards of cotton and wool cloth and one dozen hoes. Thomas Willet's inventory was much larger. He had the following: 3 boxes of Indian glass jewels (beads?), a parcel of small fish hooks, 2 dozen large fish hooks, 56 dozen small brass bells, 12 dozen thimbles, 45 papers of pins, 21 blankets, 10 firelocks, 5 matchlocks, 60 pairs of snuffers, 1 old chest of tobacco pipes, 14 yards of coarse cloth, 17 hooks and sickles, 100 weight of cordage, 88 pounds of old cordage, 8 broad hoes, 6 grubbing hoes, 6 felling axes, 9 mortising axes, 7 bill hooks, 16 Indian hatchets, 8 negroes, and many castor and felt hats. Not all of these were trade goods, but it shows the wide variety of material that was potentially available to any native with the goods to trade or cash to spend. Edward Gray's inventory of his warehouse in Plymouth included many types of fabric, hats, two gross and 2 cards of buttons, thread, scythes, lead, pins, combs, mackerel and cod hooks, whalebone, cod lines, gunpowder and shot, feathers, nails, ginger, Berginnia hoes, lamp black, rum, molasses, tar, salt, and boards.

Archaeologically three Native sites were reviewed: the Turas site, a ca. 1620s homesite in Kingston, the Sandy's Point site, a ca. 1640s homesite in Yarmouth, and Burr's Hill, a Wampanoag burial ground in Warren, Rhode Island. At the Tura site, trade goods were limited to a complete chicken, small seed beads, and larger blue glass beads. At the Sandy's Point site, blue glass beads, tobacco pipes, tin-glazed ceramics, and nails were found. A wide variety of European goods were found in the Wampanoag graves of those buried at what would later be called Burr's Hill in Warren, Rhode Island. This was most probably the burial ground of the village of Pokanoket/ Sowams, where Massasoit, Wamsutta (Alexander) and Metacomet (Philip) had been sachem. The community had maintained a long history of trading with the Dutch and English and was well positioned throughout the 17th century to acquire whatever European goods they wished. It is assumed that the goods were actively acquired with people choosing what they wanted for utilitarian and status reasons and that the goods buried with the deceased reflected the relative prevalence of these types of goods in their society.

The most common European items found at Burr's Hill were beads (n=over 6000 of shell, brass and glass), cloth (n=75 fragments), gun related items (n=69- gun parts, gunflints, lead shot, shot mold), kettles (n=65), wine and pharmaceutical bottles (n=33), items made from recycled brass (n=31), bells (n=22), spoons (n=14), locks and keys (n=13), hoes (n=11), knives (n=11), Jesuit rings (n=9), scissors (n=8), European ceramics (n=8), horseshoes (n=8), hearth chains (n=8), clay tobacco pipes (n=7), and axes (n=5).

Recovered in lesser quantities were hammers (n=2), a celt, a cleaver, a bird shaped bottle, brass pendants (n=2), nails and spikes (n=12), miscellaneous iron fragments (8), a strike-a-light, iron hinges (n=4), two swords, bone combs (n=3), a tobacco box, and pewter fragments (n=13).

All but two of the cloth fragments were wool from trucking cloth/ duffles (medium-heavy weight brown to red in color plain weave), one Hudson Bay Blanket (2/2 twill white background with stripes), and homespun (2/1 twill tan to brown in color, may be colonial or Indian manufacture). Seven fragments from the last type of wool was from a tailored garment. the remaining cloth fragments were Holland type linen used for shirts and sheets, and galloon (a narrow tightly woven trimming used on clothing with silver thread).

The glass beads numbered about 5000 with 46 different types: 11 types of tubular, 10 types of globular, and 7 oval types. The sizes ranged from small seed beads (25 mm) to large (3.85 cm) diameter ones.

The goods that the Natives were selecting for appear to range from practical items such as knives, scissors, hoes, axes, firearms and related items, cloth, and kettles, to decorative items such as beads and European ceramics, and rings. many items must have served multiple purposes being useful but decorative, status pieces and possibly viewed as being imbued with spiritual power.

Overall, it can be seen that Natives appear to have favored beads, sharp iron tools, cloth, kettles, and firearm related items as trade goods. A colonial site that yields a high percentage of these sorts of artifacts can be said to have a high degree of confidence that they were probably trading with the Natives.

FEATURES

A total of 71 features were identified and numbered by Hornblower and Fernstrom. Little analysis or identification of the features was done until the current reanalysis. For the current work, the excavation records for each of the features were examined and they were accurately placed on a new site map (which was itself a compilation of past site maps, unpublished drawings, and newly located features) (**Figure 7**).

Several features were not numbered. These appear to be either rodent runs, rock concentrations, and possible plow marks. When these features are removed, a clearer picture of the site emerges (**Figure 8**). In this figure, the amorphous area around the cellar hole has been removed, as well as the rodent runs, the stone wall remnants at the eastern end of the site, the possible plow scars at the eastern end, and the scattered rocks.

A total of 73 features were identified by Hornblower and Fernstrom (**Table 1**). These can be subdivided into Natural, Native, Colonial, and Post-Colonial. Complete descriptions of each feature is provided in Appendix C.

Table 1. List of all features identified categorized by association

Number	Size	BDBS	BDBT	Association	Contents	Identification
Natural						
8R2	90 x 50 cm	49 cm	26 cm	Natural	NCM	Woodchuck
4R3	49 x 36 cm	44 cm	19 cm	Natural	NCM	Depression
10L1	30 cm	27 cm	7 cm	Natural	NCM	Basin
15L2A	35 cm	26 cm	6 cm	Natural	nail	Basin
14L5	60 cm	55 cm	33 cm	Natural?	2 pins, 1 lead quarrel, lead shot, 1 earthenware, 1 stoneware, 1 brick	Rodent Run?
11L7	30 cm	36 cm	16 cm	Natural	NCM	Basin
Native						
8L1	40 x 30 cm	37 cm	16 cm	Native	Burned clay	Pit
11L1	38 cm	27 cm	7 cm	?	CC	Basin
12L3	16 x 10 cm	53 cm	29 cm	Native	NCM	Post Mold
17L4	50 x 42 cm	32 cm	15 cm	Native	NCM	Hearth
13L5A	40 x 16 cm	30 cm	10 cm	Native	CC	Pit
13L5B	35 cm	38 cm	18 cm	Native	CC	Pit
8L7A	28 x 24 cm	33 cm	17 cm	Native	CC, surf clam	Pit
8L7C	15 cm	19 cm	34 cm	Native	NCM	Post Mold
9L7	75 cm	23 cm	10 cm	Native	NCM	Basin
12L7	150 cm			Native	animal and bird bones, mussel, clam, oyster shells, mattock blade, latten spoon, clay pipe	Hearth
13L8A	65 x 40 cm	39 cm	19 cm	Native	Colonial Artifacts	Pit
13L8B	32 x 37 cm	35 cm	10 cm	Native	NCM	Basin
14L8	70 x 40 cm	75 cm	55 cm	Native	6 earthenware, 2 pipestem, surf clam, cc, nails	Hearth or Pit
14L9	40 cm	31 cm	27 cm	Native	Sea Clam, 1 CD	Pit
14R1B	15 cm	56 cm	28 cm	Native	NCM	Post Mold
15R2	80 x 60 cm	24-35 cm	4-15 cm	Native	CC	Hearth
6R3	40 x 25 cm	40 cm	19 cm	Native	NCM	Pit
7R3A	60 cm	58 cm	35 cm	Native	CC, CD	Pit
7R3B	20 cm	35 cm	10 cm	Native	NCM	Post Mold
8R3	60 x 54 cm	39 cm	19 cm	Native	Point, 5 CD, 2 nails	Hearth

15R3	80 x 75 cm	35 cm	15 cm	Native	NCM	Basin hearth
10R4	38 cm	54 cm	33 cm	Native	Clam, mussel shell, turtle, bird bone, CD	Pit and Post Mold
12R4	47 cm	30 cm	10 cm	Native	animal, fish bones, shell	Basin
13R4A	30 x 15 cm			Native	Burned clay, CC	Hearth
13R4B	70 x 40 cm			Native	Burned clay, CC	Hearth
14R4	140 cm	60 cm	40 cm	Colonial	nail, mortar, brick, CC, lead, oyster shells, clay pipe fragments, bones	Pit
12R5	25 cm	26 cm	6 cm	Natural	NCM	Basin
15R5	24 cm	33 cm	13 cm	Native	NCM	Post Hole?
Colonial						
10	70 x 50 cm	80 cm	60 cm	Colonial	glass bead, brass peg, 4 shell, 1 earthenware, 1 pie fragment, 1 flaked stone, CC	Post Hole
13	60 cm	28 cm	8 cm	Colonial	1 glass, 2 earthenware, 1 CD	Sill Stone
14	40 cm	70 cm	50 cm	Colonial	1 piece copper, 2 nails, 2 flint, 1 quartz cd, CC	Post Hole
13L1	40 cm	28 cm	8 cm	Colonial	1 CD, 2 brick, 1 glass, CC	Sill stone
12L2	80 x 40 cm	49 cm	31 cm	Colonial	2 stoneware, 16 earthenware, 1 bottle fragment, 4 flint, 1 CD, 1 nail, 4 pins, CC	Pit
12L3	1.7 x 1 m	35 cm	10 cm	Colonial	Colonial Artifacts	Hearth
7L4	70 cm	69 cm	55 cm	Colonial	CC, brick, CD, 6 nails, 5 earthenware	Post Hole
12L4	45 x 30 cm	27 cm	6 cm	Colonial	7 brick, 3 earthenware, 1 bone, 3 nails	Sill Stone
13L4	45 x 40 cm		5 cm	Colonial	NCM	Sill Stone
7L5	45 cm	48 cm	24 cm	Colonial	Brick, nail	Post Hole
10L5	120 cm	64 cm	46 cm	Colonial	Lots of artifacts	Pit
10R1	60 cm	54 cm	35 cm	Colonial	iron clasp knife, nail, 2 glass, 1 CD, 1 stoneware	Post Hole
13R1A	28 cm	30 cm	10 cm	Colonial	glass, CC	Sill Stone
13R1B	100 cm			Colonial	NCM	Cellar
10R2	30 cm			Colonial	NCM	Post Hole
13R2	30 cm	38 cm	18 cm	Colonial	brick	Post Hole
12R3	60 cm	64 cm	32 cm	Colonial	NCM	Post hole
Post-Colonial						
9	20 cm	107 cm	82 cm	Post Colonial	NCM	Post Hole
15	30 cm	73 cm	48 cm	Post Colonial	shells, 9 cd, window glass, 1 flint	Post Hole
12L1	23 x 17 cm	37 cm	20 cm	Post Colonial	3 nails, 5 earthenware	Post Hole
16L1	35 cm	81 cm	52 cm	Post Colonial	1 flint, CD, shell, glass	Post Hole

11L2	25 cm	105 cm	85 cm	Post Colonial	Colonial Artifacts	Post Hole
14L2	27 cm	71 cm	46 cm	Post Colonial	CC	Post Hole
15L2B	20 x 15 cm	35 cm	15 cm	Post Colonial	NCM	Post Hole
12L5A	20 x 16 cm	28 cm	4 cm	Post colonial	NCM	Post Hole
12L5B	20 x 13 cm	30 cm	6 cm	Post colonial	NCM	Post Hole
12L5C	10 cm	29 cm	5 cm	Post colonial	NCM	Post Hole
12L5D	20 x 17 cm	28 cm	8 cm	Post colonial	NCM	Post Hole
13L6	30 cm	30 cm	10 cm	Post Colonial	NCM	Post Hole
14L6	20 cm	80 cm	60 cm	Post Colonial	NCM	Post Hole
8L7B	41 x 37 cm	20 cm	25 cm	Post Colonial	Brick	Post Hole
13L7	24 cm	100 cm	75 cm	Post Colonial	Diamond shaped iron	Post Hole
10L9/ 10L10	90 cm			Post Colonial	2 iron knives, 1 glass, 1 lead, 18 pipe fragments, 48 English flint, 1 bronze bell fragment	sheep Burial Pit
10R1	20 cm	83 cm	62 cm	Post Colonial	Brick, hook	Post Hole
14R3	30 cm	27 cm	7 cm	Post Colonial	NCM	Post Hole
14R3A	18 cm	32 cm	12 cm	Post Colonial	NCM	Post hole
14R3B	20 cm	90 cm	70 cm	Post Colonial	Bark and Fiber	Post Hole
11R4	25 cm	108 cm	87 cm	Post Colonial	iron object, bark, brick, 3 cd, mortar	Post Hole
13R4	20 cm	32 cm	14 cm	Post Colonial	NCM	Post Hole

Natural features were created by woodchucks and other rodents, displaced stones, and possibly plant holes. These were scattered across the excavation area (**Figure 9**).

Native features were concentrated around the house area, especially to the north and east (**Feature 10**). Feature types included postholes for houses, basins, cache pits, roasting pits, and hearths. A large hearth was identified in the eastern yard. This feature was identified by Hornblower as being a Native hearth, but Deetz subsequently identified it as a colonial hearth based on its presumed alignment with the house to the west. By looking at the distribution of artifacts and the recorded types of artifacts present in the feature, it was determined to most probably be a native hearth with a few colonial artifacts mixed as a result of plowing. No colonial structural remains were found around it. The concentration of Native features corresponded with the concentration of Native artifacts.

Colonial features associated with the Clark house were limited to the cellar hole, the main hearth, a series of postholes at the western end of the house and a concentration of what were identified as sillstone holes and “foundation piers” at the eastern end (**Figure 11**). The “foundation piers” may represent postholes for the original house that were subsequently filled with stones when the post rotted. The colonial features outline a south facing house measuring 54 x 18' with a cellarhole beneath the western room and a hearth in the eastern room. The architecture of the house is discussed further below. Two additional post holes were found in the north yard. These may represent traces of a barn or outbuilding.

Post colonial features were limited to several straight sided, deep, post holes, obviously created by a modern post hole digger, and shallower post holes that may represent driven posts (**Figure 12**). One

other feature was a square pits containing the skeleton of two lambs. this feature probably dates to the 18th or 19th century.

ARTIFACTS

A total of 13,486 artifacts were cataloged by the author for this report. It is believed that there are probably a good number of nails that have not been cataloged and some of the Native material. Efforts should be made to finish this analysis and include it with this report. This collection includes artifacts from the 1940s, 1960, 1987, and 1995 excavations (**Table 2**). The catalog of artifacts to date (2015) is available by contacting the author.

Table 2. Breakdown of C-1 artifact collection

1940s Collection	8,490
1960	2,633
1987	605
1987 Surface Collection	1093
1995	665
Total	8,491

The majority of the artifacts were ceramics, especially redwares, and English flint debitage from the production of gunflints (**Table 3**). It does not appear that excavators saved much of the brick recovered. This is usually one of the largest categories of artifacts, but at the C-1 site few fragments are in the collection and most of those were saved during the 1968 work. Nails are also lacking, but this is assumed to be the result of those having not been analyzed yet.

Table 3. Historic artifacts recovered from the C-1 site

Class	Artifact	1940s	1968	1987	1995	Welch Count
Architectural		682				
	Brick	51	1821	162	459	37
	Window Glass	556	9	34	3	Not Specified
	Lead Kames	44				34
	Hand Wrought Nail	2	137	57	3	2993
	Machine Cut Spike	1				Not Specified
	Iron Hinges	6		1		4
	Wood Fragments	5	6		7	Not Specified
	Iron Door Latch	1				2
	Iron Pintle	1				2
	Diamond Bosses	4				4
	Plaster		2			

Housewares						
Ceramics	Borderware	19	8	1	1	Not Specified
	Rhenish Stoneware	13				Not Specified
	British Brown Stoneware	1	1			Not Specified
	Tin Glazed	1				Not Specified
	North Devon Gravel Tempered	9	1			Not Specified
	North Devon Gravel Free	93	1	2		Not Specified
	Buff Bodied Earthenware		2			Not Specified
	Redware	3643	346	423	42	Not Specified
	Italian Marbleized Slipware	1				1
	Sgraffito		1			
	Wrotham Slipware	1				8
	Staffordshire Slipware	1	1	1		Not Specified
	Iberian Earthenware	0				2
	Creamware		1	107		
	Wheildon Ware (18 th Century)	1				Not Specified
	Refined Earthenware			3		
	Ironstone			4		
	Pearlware		3	139		
	Porcelain			12		
	Sewer Pipe			1		
Tobacco Pipes	4/64" stem bore	13		5		
	5/64" stem bore	15	2	5		
	6/64" stem bore	98				
	7/64" stem bore	285	2			
	8/64" stem bore	249	1			
	9/64" stem bore	15				
	Bowl Fragments	264	7	6		
	Stem Fragments	12	7	2		
	Stem/ Bowl Juncture Fragments	3				
	Redware Pipe Fragments	10	1			
	Native Pipe Fragments	2				
	Steatite Pipe Fragments	9	1			
Bottle Glass		129				146
	Small Bottle	76				

	Case Bottle	23	3	1		
	Pewter Case Bottle Cap	1				
	Wine Bottle	27				
	Melted Glass	1				
	Patinated Fragment	1				
	18th-19 th century bottle	1	1	4		
	Modern bottle			70	2	
	Unknown period bottle	1				
Kitchenwares						
	Brass Kettle Pieces	51				
	Iron Kettle	28	2			
	Slipped in Stalk Spoon	1				2
	Puritan Spoon	2				5
	Seal and Baluster Spoon	1				1
	Iron Spoon	2				1
	Pewter Spoon	1				
	Pewter Fragments	9				
	Hearth Chain	1				
	Cruise Lamp	1				1
	Hearth Tool Handle	1				1
	S-hook	1				4
	Heavy Hearth Hook	0				1
Weaponry						
Flint	Fragment	953	10	8	7	
	Bifacial Gunflint	5				
	Spall Gunflint	57				
	Blade Gunflint	8		2		
	Strike-a-light	5				
	Core	1				
Shot	Shot	20		1	1	289
	Sprue	8				
	Bullet Mold	1				
	Lead Waste	1				
Weapons	Musket Butt Plate	1				
	Trigger Guard	1				
	Octagonal Gun Barrel	1				

	Gun Worm	1			
	Sword Buckle	1			
	Sword Hanger	4			
Clothing					
Button	Brass 18 th century	1			1
	Brass Doublet	4			7
	Iron Doublet	1			1
	Silver Doublet	2			3
	Iron and Rubber 19 th century	1			1
	Pewter Buttons	0			2
	Iron Flat Button	0			1
Clothing Other	Aglet	7			
	Brass Buckle	2			
	Clothing Hook	24			
	Clothing Eye	12			
	Goffering Iron	1			
	Iron Shoe Heel	1			
Personal Items					
	Book Clasp	3			
	Curtain Rings	5	1		
	Brass Box Hinge	2			
	Brass Needle	1			
	Pins	5			
	Thimble	1			
	Bellmetal Bell	8			
	Silver Bell	1			
	Cabinet Keys	3			
	Cabinet Lock Spring	1			
	Padlock	1			
	Clasp Knife	1			
	Bone Comb	1			1
	Wood Knife Handle	1			
Trade Items					
	Brass Pendants	2			
	Mouth Harp	1	1		
	Coins	5			

	Fish hook	2				
	Knives	13				
	Scissors	8				
	Lead Bale Seal	12				
	Beads	0	1		1	20
	Lead Scale Weights	30				
	Sandstone Bullet/ Button Mold	1				
Tools						
	Pole	1				
	Auger	3				
	Awl	2				
	Axe	5				
	Compass	1				
	File	1				
	Iron Handle	2				
	Drawknife Handle	1				
	Hoe	1				
	Scythe Blade	1				
	Wedge	3				
Husbandry	Harness Buckle	2	1			
	Horseshoe	4				
Faunal Remains						
	Mammal	7	3	9	2	
	Medium Mammal	6				
	Cattle	4				
	Sheep	3		1		
	Swine	2	2			
	Deer	2				
	Woodchuck	1				
	Bird	4			1	
	Turtle	1		1		
	Slipper Shell	1				
	Periwinkle	3				
	Scallop	3				
	Moon Snail	5				
	Blue Mussel	14				

	Oyster	25				
	Quahog	49		2		
	Surf Clam	73	3		1	
	Soft Shell Clam	165	52	16	1	
	Unidentifiable		2		6	
Other						
	Charcoal	159	129		2	
	Coal		11	16	2	None
	Iron Fragments	92	3	2	1	
	Brass Wire Object	1				
	19 th century Iron Finial	1				
	19 th century wrought piece	1				
	Brass Screw		1			
	Shotgun Shell			1		
	.22 cal shell			1		
	Bottle Cap		1			
	Can			1		
	Wire			3		
	Skeet Fragments			3		
	Tinfoil				1	
	Plastic Cufflink			1		
	Golf Ball		1			
	Bread Bag				1	
	Tar Paper			1		

Native Artifacts

Native features were common at the site and the Native material represents possibly 8,000 years of use of the site (**Table 4**). The majority of the recovered material dates to the Late and Transitional Archaic periods (6,000-3,000 BP) a wide epoch of time that saw many changes in the local vegetation, the sea levels, and the tool kits of the occupants (**Figure 13**).

Table 4. Native artifacts

Artifact	Gran	Slate	Stea	PJ	Argl	Chrt	Hrnfls	Mstone	Sstone	SJ	Vol	Qztz	Qrtz	ARF	Rhy
FCR	9								1						
Hammerstone	1	2							1			2			2
Fishing Weight	3	1										1			
Hoe									1						

Native pottery was concentrated in the south yard, south of the house, with a smaller concentration around the historic house (**Figure 14**). The general distribution of lithics at the site (**Figure 15**) is opposite that of the concentration of features identified as probably having been created by the Native inhabitants. This may indicate that waste was disposed of away from the living areas where the features were located, or it may indicate that the features identified as probably being Native may, in fact, be historic or natural. The fact that the highest concentration of lithics being around the historic hearth may indicate that these items were collected by the Colonial inhabitants as curiosities.

Architectural Class

Bricks

Welch reported that 314 lbs brick and brick frags with only 2 whole bricks were recovered by Fernstrom (**Figure 16**). The whole bricks had the following measurements:

Length	8 3/8" (21.3 cm)	7 3/4" (19.7 cm)
Width	4 5/8" (11.8 cm)	3 1/2" (8.9 cm)
Thickness	2 3/4" (7 cm)	4 1/4" (10.8 cm)

A total of 37 bricks fragments with measurable original dimensions remain in the collection today. The widths of the 16 fragments that could be measured range from 9.4 to 11.7 cm with the majority (n=13) being 10.9 cm wide or larger. The heights of the 37 fragments that could be measured range from 4.6 to 7.5 cm with the majority (n=24) being between 5 and 6 cm high. The bricks generally had a coarse sandy gravel temper with large water-smoothed pebble inclusions and the impression of grass or straw, on which the bricks had been laid to dry, on one face.

As early as 1625 there were English laws regulating the dimensions for bricks as 9" by 4 1/2" by 3" high (22.9 x 11.4 x 7.6 cm), which was very similar to the 1700 dimensions for statute (a.k.a common) bricks which was 9 x 4 1/2 x 2 1/4" (22.9 x 11.4 x 5.7 cm)(Cummings 1979:118). The Massachusetts Bay Colony set regulations on brick sizes in 1679, stating that the molds for bricks must be 9" long, 4 1/2" wide and 2 1/4" high, but, as William Leybourn observed in 1668, molds of such size seldom produced bricks of such size due to drying and burning (Cummings 1979:118). The firing of a single brick clamp results in three different types of bricks: Clinker- those that lie closest the fire which have a glaze on them; those that lie next in the clamp which are of second quality; Samuel or Sandal-bricks- those that lie at the outside of the clamp and which are soft and will dissolve in the weather.

The bricks used for the William Clark/ RM Site house were likely made locally. As early as 1629, clamps were established in Salem, Massachusetts for the manufacture bricks and roof tiles, while in the same year there is a singular, unique record of 10,000 bricks being imported into the colony (Cummings 1979:119). Measurable bricks from the Allerton Cushman Site in Kingston, Massachusetts (c1650-1690), ranged in width from 9 to 11.5 cm, 4.8 to 6.1 cm in height, and 17 cm long. The single measurable brick from the the Ezra Perry II (Aptucxet Trading Post Museum Site) in Bourne (c. 1670-1720) measured 10 cm wide, 6.35 cm high, and 20 cm long. Later sites, such as the Lot Harding House in Truro, Massachusetts (1746 to present) had bricks measuring 8.6 to 10.9 cm wide, 4.3 to 5.7 cm high and 18.2 to 18.8 cm long and the Duxbury Second Meeting House (1708-1785) bricks were 8.5 to 11

cm wide, 4.3 to 6.2 cm high, and 14 cm long. All of these bricks roughly fit within the known 17th and 18th century brick regulations. The bricks recovered from the Wing Fort House averaged 16.5 to 19.7 cm long (6.5 to 7.7 inches), 7 to 11 cm wide (2.7 to 4.3 inches) and 3.7 to 6 cm high (1.5 to 2.4 cm). As a point of comparison, bricks from the 19th century Samuel Fuller House site in Kingston, Massachusetts measured between 18.2 to 18.8 cm long, 8.8 and 10.9 cm wide, and 4.3 to 5.5 cm high, very similar to the Lot Harding bricks.

Comparison of brick sizes

Site	Length Range	Width Range	Height Range
William Clark/ RM Site	19.7-21.3 cm	8.9-11.8 cm	7-10.8 cm
Water St. House (ca. 1650-1670)		9-10.7 cm	4-6 cm
Allerton/ Cushman Site (1650-1690)	17 cm	9-11.5 cm	4.8-6.1 cm
Ezra Perry II (1670-1720)	20 cm	10 cm	6.35 cm
Lot Harding Site (1746-Present)	18.2-18.8 cm	8.6-10.9 cm	4.3-5.7 cm
Duxbury Second Meeting House (1708-1785)	14 cm	8.5-11 cm	4.3-6.2 cm
Samuel Fuller House (1830-1890)	18.2-18.8	8.8-10.9 cm	4.3-5.5 cm
Richard and Ruth Taylor (1640-1800)	20 cm	8-13.5 cm	4-7 cm

The bricks from the William Clark/ RM Site most closely match the Richard and Ruth Taylor and the Ezra Perry II Site bricks- being longer , generally wider, and relatively thicker than the more recent bricks.

The principle concentration of brick was a was fan-shaped area with apex at the main house hearth with a spread 12 m to N with maximum width of 18 m (**Figure 17**). By plotting the brick that was recorded in the catalog brick concentrations can be seen at the main hearth and to the northeast of the hearth, and in the cellar hole. The spread to the northeast of the main hearth may indicate that this is either the direction that the chimney fell or that this area was where the chimney was dismantled by those scavenging the house. The abundance of brick may indicate that the entire hearth and chimney were brick versus wattle and daub. The cellar hole concentration is probably the result of material being pushed into the cellar when it was filled. It is interesting to note no major brick concentration associated with the eastern hearth, lending support to the idea that it represents a Native hearth and not a colonial one.

Window Glass and Lead Kames

Welch reported that the majority of the window glass fragments were of the diamond shaped variety that would have been held in place by means of lead kames. He did report that several pieces of glass with 90 degree corners indicated the possibility of rectangular/ square panes, which were just coming into fashion in the late seventeenth century.

Many of the lead kames that were recovered had been twisted, presumably in preparation for melting to cast shot. Clark either removed all his glass windows and replaced them with sliding shutters or sash

windows, which were just coming into fashion in the middle 1670s. Alternately, the leads that were melted at the site came from someone else's house, possibly one that was being demolished.

The lead kames were on average 8 mm wide with grooves that were 3 mm wide (**Figure 18**). The grooves were 3.5-4 mm deep. Thirty fragments were found that had been beaten together for melting, totaling 1,530 grams. These were found in the following contexts: 9L2, 9L9, 10L7 (2), 11L7-12L7 (hearth), 14L3, 14L7 (2). Four complete untwisted kame fragments were found at bottom 6" layer and below 1st charcoal lens in the cellar, and from the eastern hearth (n=2). A total of 44 lead kame fragments remain in the collection (C1-24, 122, 147 [2], 148 [2], 691, 843, 845, and no recorded context [33]). The distribution of kames is similar to that of the lead waste: a little around the main hearth and most in the east yard and eastern structure. The only difference were the two pieces of kame found in the cellar hole (**Figure 19**).

Nails and Spikes

Two large iron spikes, both of which appear to be hand wrought, were found. They both measure 12.5 cm long. One was found in square E2/ 10L5 (C1-191) while the other came from an unknown location. The nails were analyzed by Welch in 1965 as part of his report on the site. He found that there were a total of 2,993 nails, spikes, and fragments, of which, 1,476 could be measured and many were purposefully clinched. He divided them into five size categories:

- small nails 4+/- cm long
- Medium small nails 6 +/- cm long
- medium large nails 8+/- cm long
- large nails 10+/- cm long
- spikes 14-30 cm long

He found that there were not more than 10 per sq meters west of square L2 except in the cellar and square 13R4 (212 and 38 nails respectively). The nails appear concentrated in the area of the main house and the structure to the east (**Figure 20**) (**Table 5**).

Table 5. Nail Distribution based on Welch report

Area	Small	Med small	med lg	lg	spikes	frags	total
F 1	16	25	26	10	1	88	166
F 2	32	39	26	2	0	104	203
F 3	19	33	21	12	2	125	212
Ch fall	35	37	43	8	0	142	265
Sheep pit	10	29	35	3	0	45	122
Total	112	163	151	35	3	504	968

The distribution indicates that wooden structures were likely associated with both hearths. The general paucity of nails to the north may indicate that no structure, or at least no structure using an appreciable

amount of nails, stood in that direction. Thus, the possible post molds to the northeast of the main house may be fence post and not structural posts.

Large Iron Staples

Two large U-shaped staples were found, one from square 10L7 and one from the main house hearth in 12I3. The one from the main house hearth measures 5 x 8 cm. These may have been used as door bolt staples or to join two pieces of timber together. Two other smaller, probably modern, staples from unknown locations appear in the 1964 photograph by Welch.

Hinges

Fernstrom reported that four fragments of large strap hinges were present in the collection (**Figure 21**). The fragments were as follows:

One fragment 3.5 cm wide from square 12R1 (the cellar hole) (catalog number C1-no number)

One fragment 29 cm long from the bottom 6" layer in the cellar hole (catalog number C1-843)

One fragment 14.5 cm long from the bottom 6" layer in the cellar hole (catalog number C1-no number)

One fragment from square 12L3 (the main hearth) (catalog number C1-341)

Three of the four hinges were found in the cellar hole with two being found in the last 6" fill layer and the other came from the main hearth area (**Figure 22**). Hinges of these sizes would have been suitable for house doors and the trap door over the cellar hole. The pieces from the cellar hole probably came from the trapdoor leading into it while the one from the hearth came from the main house door. One other iron hinge fragment is present in the collection. It is 3.5 cm wide and 6 cm long. It does not have a catalog number. The shape looks more regular than the others and it probably dates to the nineteenth to twentieth century.

Wood Fragments

Several fragments of wood are in the collection. They may have come from the original building at the site, but it is much more likely that they are of a more recent date.

Iron Door Latch

Two possible door latch fragments were identified by Fernstrom. He felt that these may date to the 19th-20th century. One was found in the upper fill of the cellar hole while the other was found in an unknown location in plow disturbed soil. Catalog number 802 is an iron J-shaped piece that is one of the latches identified by Fernstrom. It appears to be hand wrought and probably is 17th century in date. The piece bears a wide end that would have attached to the door and a narrow handle part. The context that it was found is the southwest quadrant of the cellar hole in stained soil below the first charcoal layer. The second latch fragment (C1-483) is of thinner metal and has a rectangular handle and flared,

flat attachment point. It looks more modern. The catalog number indicates that no data was recorded regarding where it was found. One other possible door latch fragment is in the collection. This piece has a flat, leaf-shaped surface attached to a perpendicularly placed half-circle (**Figure 23**). The entire piece is cast or forged as one unit. No locational or catalog information is present on the artifact. Only this last piece remains in the collection.

Pintle

Two iron pintels were recovered from the site (**Figure 24**). One measured 17 x 7 cm and was found in square 10L4 (just east of the main house) while the other was a 12 cm fragment found in 12L2 (in the main hearth) (**Figure 25**). These pintels probably came from the hearth where they were attached to brickwork and were used to hang trammels on. Deetz cited the larger pintle as evidence of a heavy gate that was part of the fortification of the house. The larger pintle is missing from the collection.

Diamond Door Bosses

Four diamond-shaped iron bosses with nails through the center were found in the eastern portion of the site (**Figure 26**). All four remain in the collection. Three were found along the C5-C7 line while the fourth was found in square E2 (**Figure 27**). These bosses were used on doors and chests in the middle to late 17th century. They measure .77 x .68", 1.44 x 1.23", .77 x .44", and 1.28 x .845". The nails that pierce them were .58, .68, and .85" long. None of the nails were clenched, indicating they did not penetrate all the way through the wood that they were nailed onto. The length of the nails indicate that they may have been used on a door versus a chest. The door on the iron master's house at the Saugus Iron Works bears similar bosses. Similar bosses were found at the Clark and Lake Site in Maine. Their distribution may indicate that a door was located to the south of the eastern hearth.

Housewares

Ceramics

The original ceramic identification was conducted by Lura Woodside Watkins, author of *Early New England Potters and their Wares*. Because much of the ceramic collection is missing, we are forced to rely on her interpretations and the meager collection that remains at the Plantation. It is assumed that someone took the collection for analysis after Welch finished his thesis and never returned it.

Borderware

Temporally diagnostic of the early seventeenth century are the wares produced in the various border areas of north-east Hampshire and West Surrey from the 16th and 17th century. These are called Borderware (Pearce 1992:1). Borderware was the second most common utilitarian cooking and serving ware in the early seventeenth century after redware. The body of the Borderware is a fine sandy off-white earthenware and the interior and often the exterior is glazed with yellow, brown, green, or olive glazes. The fabric and colors are very similar to the products of Holland and France but the shapes of the vessels are easily identifiable to England. There are a huge number of forms that the Borderware took from three legged cooking pipkins to candlesticks, but it is interesting that in the Plimoth Plantation collections, few have been identified thus far. Borderware have been recovered from North American colonial sites that had occupations prior to the English Civil War in 1660. The war severely

disrupted trade patterns with the New World and during this time many utilitarian ceramic forms that had formerly come from England were replaced by the developing New World colonial pottery

industry. The recovery of Borderware at a site is very temporally diagnostic to the early seventeenth century, at least it points to an occupation prior to 1660.

Watkins identified several, what we would now call Borderware, pipkins as "lead-glazed buff earthenware". He states that he found "several small deep pots with three small feet and a vertical strap handle" and goes on to describe them as unglazed on the exterior with a yellowish or green glaze on the interior. Another Borderware vessel that he identified was a yellow-glazed strainer "of pan shape" with a heavy rolled rim. The same rolled rim was identified on a "thick pot of buff earthenware" with a green glaze on the interior. Other pieces of Borderware that he identified were pot rims with and exterior ledge for a cover (one of which had an unglazed exterior and another which was glazed greenish yellow on the interior and exterior), and a milk pan or other large vessel with a dark brown glaze. One unique vessel was identified by Watkins as being redware but it may be burned Borderware. He described it as a "tiny jug with crude orange-yellow glaze" with a "handle" that was pierced for suspension. This vessel appears to represent a Borderware costrel with the hole being where a string would pass for the handle (**Figure 28**).

In the collection today, a total of 31 Borderware sherds are present. These were mainly collected during the 1940s excavations, but 12 were found during the 1960s, 1980s, and 1990s excavations. These sherds are believed to represent a minimum of seven vessels (**Table 6**). One additional vessel in

Table 6. Borderware vessels

Vessel #	Interior Color	Exterior Color	Form	Measurement
1	Green	Unglazed	Pipkin	11 cm rim
2	Green	Unglazed	Dish	32 cm rim
3	Olive Yellow	Unglazed	Dish	22 cm body
4	Light Yellow Brown	Unglazed	Pipkin	4 cm base
5	Green	Unglazed	Bowl	28 cm rim
6	Olive Green	Unglazed	Dish	38 cm rim
7	Yellow Brown	Unglazed	Collander	
8	Unglazed	Orange Yellow	Costrel	2.5 cm rim

the accompanying table was the costrel described by Watkins and photographed by Welch in 1964 (**Figure 28**). This fragment, like much of the Borderware assemblage that was analyzed by Watkins and photographed by Welch, is no longer in the collection.

Borderware was concentrated around the main house and between the main and the eastern hearths (**Figure 29**).

Stoneware

Stoneware can be described as a ceramic type that is made of alluvial or glacial clays which is fired in a kiln at temperatures of 1200 to 1400 degrees Celsius. Firing the clays at these temperatures produces a dense, vitrified, waterproof body of a gray, brown or buff color. Vessels were often glazed by throwing handfuls of salt into the kiln at the peak of firing. This imparted a salt glaze, giving the exterior surface a waterproof glaze with an orange peel like texture.

Brown slip covered salt glazed stoneware had been produced in eastern Europe since at least the 1400s and was used chiefly for shipping and storing commodities (Turnbaugh 1985:16). Primarily these were produced in two centers in the Rhineland of Germany; Frenchen and Westerwald. The Frenchen region mainly produced wares with a distinctive iron oxide stained slip with a salt glaze on a brown stoneware body. The best known of these was the Baartmannkrug or Bellarmine bulbous jugs produced since the early 16th century.

The Baartmannkrugs are noted for the medallions on their bodies, often with a coat of arms identifying where they were produced, and a molded bearded mask on the neck. Over time the medallions became completely abstract, no longer referring to any region but being merely decorative and the masks became grotesque caricatures of their original selves. A site dating to the early seventeenth century would contain Baartmannkrugs with well-molded medallions of specific cities and naturalistic masks. This region also produced plain globular jugs of various capacities

The second type of German ceramics were those produced in the Westerwald region. These were most commonly made in the form of jugs that were decorated with cobalt blue and a salt glaze on a gray stoneware body. Over time the finely executed decorations and lines on Westerwald vessels became degraded, much in the same way that the Bellarmine's decoration deteriorated. By the late seventeenth and especially the eighteenth century, they were distinctly debased. After approximately 1660 manganese was also used in conjunction with cobalt in the decoration of these vessels (Hume 1970:281).

Watkins identified parts of small "graybeards" (Bellarmine) jugs of one to one and one-half pint capacity. She also identified gray stoneware Grenhausen (Westerwald) type jugs, a small rim sherd of a cylindrical ale mug (Nottingham?), and a brown stoneware rim and handle of what she identified as a pipkin but which is much more probably a mug (**Figures 30 and 31**).

Fragments of eight stoneware vessels remain in the collection (**Table 7**). They are identified as

Table 7. Stoneware vessels in the C-1 Collection at Plimoth Plantation

Vessel #	Interior Color	Exterior Color	Form	Measurement
1	Unglazed	Brown	Rhenish Jug	13 cm body dia
2	Unglazed	Light brown splotchy	Rhenish Jug	20 cm body dia
3	Unglazed	Gray	Rhenish Jug	14 cm body dia
4	Pink	Orange brown splotchy	Rhenish Jug	10 cm body dia

5	Unglazed	Light brown splotchy	Rhenish Jug	12 cm body dia
6	Gray	Gray with blue decoration	Westerwald Jug	15 cm body dia
7	Tan	Gray with blue decoration	Westerwald Jug	10 cm body dia
8	Tan	Brown	British Brown Mug	

Bellarmino/ Rhenish jugs, Westerwald jugs with exterior blue decoration, and one probable 18th century British Brown stoneware mug.

Using the catalog of artifacts created during Deetz's time at Plimoth Plantation, the distribution of what were identified as stoneware sherds (**Figure 32**) shows a concentration near the main hearth and in the east yard towards the eastern structure.

Tin-Enameled

Tin-enameled wares (also called tin-glazed, or delftware) were produced in Spain, France, Portugal, Holland and England. At present it seems that wares from England comprise the vast majority of these wares found on early seventeenth century English colonial sites. Tin-enameled wares are semi-soft bodied earthenwares which were decorated with blue, orange, green and yellow painted glaze and were covered with a tin glaze or a lead glaze with tin added. This gave a white glaze to the vessel reminiscent of oriental porcelain, which they appear to have imitated. The most common vessels for the early seventeenth century are chargers, flat broad platters, with floral or pomegranate decorations in the center and blue dash decoration along the rims (Hume 1970:108). These were made from ca.1620 to 1720. As with other ceramic types that lasted for a long period, the decoration of these ware degraded throughout the century as demand and availability of them increased. Apothecary or drug pots were also made in England. These were rather tall and narrow vessels painted in bands on the exterior, often in blue, orange and purple (Hume 1970:205). These were produced from ca. 1580 to 1640. They were replaced by plain white pots of a squatter shape later in the century.

For Tin-enameled vessels, Welch identified what he called a "gaily decorated pan" that was probably a blue dashed charger. He stated that it was striped blue around the rim and was decorated with hand painted flowers with orange rays, blue centers, and green leaves edged with blue. This sounds very similar to the tin-enameled vessel that Lombard recovered from the Aputuxet Trading Post Museum Site in Bourne (dating to the late seventeenth to early eighteenth century).

Welch's photograph shows several fragments of what may be the same possible charger. It also shows the knob off of the possible lid of another vessel (**Figure 33**). Unfortunately, with the majority of the collection now missing, not much can be said about it. The plot of the pieces recorded as tin-enameled in the Deetz era catalog shows a concentration at the main hearth and smaller concentrations to the east and west (**Figure 34**).

North Devon Gravel Tempered

North Devon Gravel Tempered (1675-1775) was produced in the West Country of England. The common forms found in New England were milkpans and chamberpots. Portable ovens were also produced. The fragment from the excavations appears to be from a milkpan. Malcolm Watkins illustrated the rim profile and cross section of one of the fragments from the site in his book on North Devon pottery (**Figure 35**). He identified it as having been made ca. 1670.

North Devon Gravel Free

The West Country of England, mainly around the towns of Barnstable, Biddeford and Great Torrington produced a type of earthenware that has come to be known as North Devon gravel free ware. This ware is easily distinguished by the color of the exterior versus the interior. The exterior was fired in an oxidizing atmosphere in the kiln and as a result it attains an orange or red. These vessels were fired upside-down in the kilns, with result being the interior having been fired in a reducing atmosphere, free from oxygen. As a result the interior are often or a gray fired body with a mottled yellow to olive brown glaze (Cranmer 1992:85). These vessels have long been thought to have only been produced during the late seventeenth century, but their recovery from sites such as the Plymouth trading post at Pentagoet (ca. 1629), Martin's Hundred in Virginia (1622) and from the wreck of the Sea Venture (1609) pushes their dates of manufacture back into the first quarter of the century (Cranmer 1992:85). Their recovery from sites throughout the century shows that they were produced for a long time range. Most of the vessels take the form of baluster jars. These vessels have a constricted neck on which a paper or cloth cover could be tied. It is theorized that these vessels were shipped either empty or filled with pickled fish to the colonies.

North Devon Gravel Free (1620-1680) ware was produced in the same are as the previous ceramic but the at an earlier date. The common form or vessel was a baluster shaped storage jar, believed to be used to ship fish. A total of four baluster jars were identified in the collection. North Devon baluster jar fragments were concentrated around the hearth and cellar hole and to a lesser degree in the east yard (**Figure 36**).

Overall, North Devon ceramics appear to have made up only a small percentage of the total assemblage at the site. This is in sharp contrast to the Howland site at Rocky Nook where they were much more common. It is possible that Clark did not receive many goods from West Country sources, either directly from England or through fishermen in Maine or trade with Ferryland in Newfoundland, whereas John Howland, who was involved with the Kennebec trade, did. Alternately, since the Howland sites dates to the 1690s, it may be that trade with the west Country increased in the later part of the 17th century, meaning more of these goods would have been available to Howland than Clark.

Redware

At the sites being used in this discussion, redwares dominate the assemblages as can be seen in Figure 4. Redware is the broadest variety within the ceramic class of earthenwares. Earthenwares can be characterizes as being a ceramic class composed of glacial or alluvial clays that have been fired in a kiln at temperatures not exceeding 1200 degrees Celsius. Before the firing, the body may be, but was

not always, covered with a powdered or later, a liquid lead oxide glaze. This glaze fused to the body and created a waterproof, glasslike surface. Different paste textures, decorative techniques, and glazes produced different types of earthenware identified by the distinctions: redware; tin-enameled; slipware; North Devon gravel tempered and gravel free wares; and refined earthenwares. Some of these varieties have distinct temporal ranges, while others continued in production virtually unchanged for centuries.

Redware is the largest and most commonly occurring type of earthenware encountered on European Colonial sites.

Watkins divided the redwares into English and American. he interpreted a vessel with a golden-brown glaze that was decorated with spots, marks, and lines of white slip as being English. The remaining sherds were described as "of cruder character" which he assumes is characteristic of American manufactured wares. he stated that many of the sherds were unglazed or were glazed with a dark brown to black manganese glaze and many appeared to have been burned. Several interesting features were found amongst the redware sherds. These included vessels with heavy rolled rims like the Borderware strainer; a number of "heavy pots for storage or boiling", a number of milk pans, black-glazed chamber pots, a thin-walled bowl (6" in diameter) with an uneven brown glaze, an unglazed pot decorated with a relief band around the rim made by pressing the thumb into the clay, handles with pinched clay decoration on them, a thick base of a possible bottle or drinking pot with a "crude brown glaze", and a small jug. The redware vessel with the thumbprints around the rim (**Figure 37**) is probably a product of England. Similar pots have been found in London and are believed to have been manufactured there. there are also similar pots from Virginia and it is believed that the Virginia potter learned his trade in London before emigrating.

A total of 89 17th century redware vessels were identified:

Redware vessels identified during 1990s reanalysis

Pots	43
Small Pots	5
Milk Pans	14
Tall Pans	5
Pitchers	2
Jugs	2
Mugs	5
Drinking Pots	7
Chamber Pots	4
Total	89 Vessels

The majority of the vessels were food storage and processing wares (pots and milkpans) with liquid consumption vessels being the second most common. Redware processing and storage vessels were concentrated principally around the hearth and in the east yard with a secondary concentration around the cellar hole (**Figure 38**). This distribution may indicate that the east yard was the location of an outbuilding where processing or storage took place. The consumption vessels were concentrated around the hearth, to the immediate east of the cellar hole and in the east yard (**Figure 39**). the difference in distribution may indicate that these vessels may have been commonly stored in the west

room of the house and around the hearth and to a lesser degree in an eastern outbuilding. A complete list of the identified vessels is presented in Appendix B.

Italian Marberlized Slipware

Not all of the earthenware varieties recovered from early seventeenth century colonial sites originated in England. This is true for a common type of ceramic known as North Italian red marbleized slipware that generally dates from 1610 to 1660. The decoration of these red bodied earthenwares was executed by mixing white and green slip to create a marbled slip (Hume 1970:77). Common vessel forms of this ware appear to be "costrels", which were used much like canteens, and dishes. Italian marbled slipware occurs at numerous seventeenth century sites in the Northeast (Wilcoxon 1987:77).

Watkins found a sherd of what he called redware with fine marbling in greenish-white and brown (**Figure 40**). This was probably a sherd of Italian Marbleized Slipware. This ceramic type dates from 1610 to 1660 and appears to have been widely used on Dutch sites and possibly by colonies such as Plymouth who had trade with the Dutch. It also may have come from England or even from a Venetian ship, at least one of which was known to have traded in New England waters (Wilcoxon 1987:77). Considering the Dutch tobacco pipes at the site there is a strong argument that since the Dutch were trading this ceramic type in the colonies it could have come from that source

Wrotham Slipware

The first is a Wrotham slipware mug. This ceramic was produced from 1612 to 1700 and is noted for its dark glaze and trailed slip design. The vessel from the C-1 site appears to be a mug (**Figure 40**). At least

Staffordshire Slipware

Watkins identified two small pieces of Staffordshire slipware in the collection. One was a fragment of a dish with fine brown combing while the other was from a cup or mug with fine combing. No other information regarding these vessels remains. They may date to after the occupation of the site by Clark, as Staffordshire slipware appears on American sites ca. 1675. The one piece visible in the Welch photograph is a pan with a coggled rim, indicative of an 18th century date.

Iberian Earthenware

Iberian earthenware olive jars and flasks (1500-1800) , are one of the most widely occurring Spanish ceramics to be found in the New World having been used by the French and English as well as the Spanish. These vessels were used to transport, wine, olive oil, olives and fish. Generally, Iberian storage jars were either globular with a round or pointed bottom. Iberian storage jars have been recovered in New England from Pemaquid, Maine in an 18th century context and from the circa 1628 to 1676 Plymouth Colony trading house at Cushnoc in Augusta, Maine from the Howland and Alden site in Kingston and Duxbury, respectively, and from downtown Plymouth at the Sparrow House. Two fragments were identified, through analysis of Welch's photographs, of what may be an Iberian oil jar neck and the handle from an Iberian flask (**Figure 41**). The flasks are common finds in Virginia and

the southern colonies but have not shown up in New England. One fragment from a possible Iberian flask was also found at the Howland site in Kingston.

Ceramic Discussion

The ceramic assemblage that would be expected at a site dating from 1627-1635 can now be ascertained with a fair degree of certainty. Redware vessels would comprise the majority of the assemblage with dark or olive glazed drinking, storage, and cooking vessels present. Borderware would be present representing cooking and serving vessels. Black glazed tygs (1400s-1650) and Wrotham slipware mugs (1612-1700) may be present. Tin-enameled vessels may be present, but would not be common. These would most likely take the form of "blue-dash" chargers (1620-1720) and polychrome apothecary pots (1580-1640). Baluster jars from the North Devon region of England (ca. 1620 to c. 1675) would probably be present. North Italian marbled earthenware (1610-1660) and French Martincamp costrels would round off the earthenwares.

French stoneware jugs with well-molded faces and medallions would be present to hold liquids. There is the possibility that stoneware from Normandy, France would be present in limited quantity from Plimoth Colony's interaction with traders and fishermen in Maine. Finally it must be noted that there may be Dutch wares similar in fabric to Borderware present as a result of the known interaction with New Holland.

In an attempt to move beyond mere description when reporting ceramic occurrences from archaeological excavations (e.g. "15 pieces of creamware, 4 pieces of pearlware and one piece of ironstone were recovered") to an explanation of why they occurred, Dr. James Deetz formulated a series of propositions regarding the use and distribution of ceramics in Plymouth Colony between the years 1620 and 1835 (Deetz 1972). Deetz's propositions were based on ceramics recovered from numerous excavations he directed while at Plimoth Plantation in the 1950s to late 1960s. He stressed the relationship between behavior and its material products and how the acquisition, use and ultimate disposal of artifacts such as ceramics, all resulted from certain aspects of the lifeways of their owners (Deetz 1972: 15). Deetz's propositions were as follows:

- 1) Ceramics are a functional component of a cultural system
- 2) Three successive cultural systems were operative in New England in the period 1620-1835
- 3) In all three cultural systems the presence of ceramics is a function of four factors:
availability, need, function, and social status
- 4) Ceramics in Plymouth will exhibit a threefold division in time, corresponding to the three successive cultural systems in operation in New England (1620-1660, 1660-1760, 1760-1835), and within each time period there will be greater internal consistency than between time periods.
- 5) The pattern of ceramic use for the first period will reflect ceramic usage of the Stuart yeomen foodways subsystem as well as that of the first settlers of Plymouth.

- 6) Ceramics of the second period will show differences in terms of use and type, reflecting divergences from the parent culture. They will also exhibit strong conservative tendencies in stylistic and functional trends.
- 7) Ceramics of the third period will show a greater homogeneity and will reflect a more structured pattern of use than those of the earlier period 1760-1835 shows major shift in pottery types
- 8) There will be a marked increase in the rate of change in ceramic types during the third period, and domestically produced ceramics will decrease in relative quantity.

The colonists who settled in Plymouth arrived with the baggage of their medieval heritage and their Stuart yeoman ways. They were not totally representative but were basically less prosperous Stuart yeomen and husbandmen. They were conservative, potentially self-sufficient, and greatly influenced by religious attitudes. This way of life continued relatively unchanged and unchallenged for nearly a generation until the Puritan Revolution in the 1640s led to dramatic reduction in emigration. This led to depressed economic conditions, shortages of imported goods and a cultural isolation that led to a slow but steady divergence from the earlier yeomen lifeways.

The century between 1660 and 1760 saw the isolated New Englanders develop a distinctive Anglo-American folk culture that was different from the English culture in the motherland. After 1760 and until 1835, American culture was impacted by the emergence of a Georgian tradition, which was Deetz's third period.

The Georgian tradition was characterized by symmetrical cognitive structures, homogeneity in material culture, progressive and innovative world view, and an insistence on order and balance that permeates all aspects of life and contrasted sharply with earlier medieval tradition (Deetz 1972: 18). This Georgian tradition was truly the first popular culture in America and served to dissolve regional boundaries and re-Anglicized the American culture.

Three general groups of ceramics were identified by Deetz as having been excavated in Plymouth Colony:

Group 1 Fine imported wares

French stoneware, sgraffito, delftware, marbled slipware, trailed slipware, mottled ware, agateware, Wheelton type wares, Jackfield type wares, porcelains, creamware, pearlware

Group 2 coarse imported, undecorated wares

Borderware, North Devon gravel-tempered wares, undecorated redwares

Group 3 Coarse domestic redware

undecorated and later slip-painted and trailed types

Deetz's first period (1620-1660) was characterized by a low occurrence/ minimal need for ceramics within the Stuart yeoman foodways system. Wares that occur during this period were limited to Group 1 French stonewares, Group 2 Borderwares and undecorated redwares. Ceramics were limited to their use in dairying and as drinking vessels.

Deetz's second period (1660-1760) saw a marked increase in the occurrence of fine imported ceramics of Group 1 (delftware, combed slipware, Westerwald stoneware predominantly, supplemented by mottled ware, dipped white stoneware, North Devonshire scraffito ware), a decrease in Group 2 Borderwares with a concomitant increase in North Devon Gravel Tempered wares, and a growing increase in the use of Group 3 domestically produced redwares. Ceramics were still used for dairying, but by 1650 there was a marked shift in balance of power from the clergy to the merchants at which was indicative of growing trend toward secularization of certain aspects of the growing aspects of culture (Deetz 1972: 27). Supplies were arriving in renewed quantities after the 1660 Restoration, and a greater variety of European ceramics being used in the colonies is not surprising. Another change was the increasing reliance on ceramics as flatwares, dishes and plates, versus their earlier use as hollowares.

Finally, the third period was characterized by a complete replacement of all the earlier types by the developing English refined earthenwares- creamware and then pearlware. The Georgian world view was of a more orderly relationship between man and his artifacts could account for it as well possibly creating a situation where there was now one plate, one cup, and one chamberpot relationship per person. Ceramic usage now conformed more closely to conform more closely to our 21st century concepts of the place of ceramics in culture (Deetz 1972: 32).

Tobacco pipes

Welch stated that the majority of the identifiable pipe bowls had the "Acorn" type bowl 17th-early 18th century. A "gauntlet mark" was found on one (1675-1700) and the overall period of deposition appears to be 1630-1700 with emphasis on mid-17th century (**Figure 42**). With exception of a few fragments from the cellar, most were found from 0 and L9, principally in built up area.

A total of fragments of 71 clay and stone pipes found, with the number being established by counting fragments containing elbow section. The breakdown was as follows:

- 63 acorn type
- 4 stone
- 1 redware
- 2 TD
- 1 effigy

Pilgrim period	Count	Description	Location
	13	Acorn Type	10L5 (2), 11L7-12L7, 11L6, 13L7, Cellar last 6"
	24	Acorn type nib and bowls	7L4, 9L4, 10L7, 11L2, 12L4, 13L3
	26	acorn type nib and stem	8L2, 9L8, 10L5 (2), 13-13L1, 14L2, 14.0
	2	redware	9L9, 13L2
	2 lbs 7 1/8" oz	stems	From whole site
	10 3/4 oz	bowl frags	From whole site
	2	acorn like stone bowls	10L2-10L3, 11L3

	9	stone stems	7L5, 9L8, 10L8, 11L3, 12L3 13L6, Cellar first cc lens
Post Pilgrim period	2	large TD bowl	14L9
	1	Effigy female head	Surface

Analysis was carried out by Mr. H. Gaga Omwake of Lewes Delaware, Mr. Arthur Woodward of Los Angelos County Museum, and Mr. Adrian Oswald, curator of Archaeology at the Birmingham Museum, Birmingham, England.

A total of 690 clay tobacco pipe fragments were recovered from the C-1 site.

Stem Frags	315
Bowl Frags with maker's Marks	6
Marked/ decorated Stems	12
Redware Pipes	7
Soapstone Pipe Frags	11
Native Pipe Frags	3
Bowl Frags	245
Unmeasurable Stem Frags	10
English Pipes	38
Dutch pipes	34
18th-19th Century Pipe Frags	9
Total	690 frags

The pipes (Stems and bowls) with measurable bore diameters were distributed in the following manner:

9/64"	1580-1620	9	2.30%
7/64"	1620-1650	165	42.70%
8/64"	1650-1680	143	37.10%
6/64"	1680-1710	55	14.30%
5/64"	1710-1750	9	2.10%
4/64"	1750-1800	4	1.50%
		385	

The mean date calculated for the site was:

Mean Date	1654.9 with the 4/64" and 5/64" stems
Mean Date	1666.5 without the 5 and 4/64" bores

These dates correspond well with the estimated occupation range of 1633-1676, which produces a mean date of 1654.5.

Looking at the serration of clay pipe bores that I have gathered for Plymouth Colony sites, it can be seen that by the percentage of each variety of bore size, the C-1 site dates among the earliest sites

excavated thus far (**Figure 43**).

Pipe Bowl Styles

Pipe bowls were identified as being either of Dutch or English manufacture. These identifications were made using Duco (1987) for the Dutch bowls and Oswald (1975) for the English ones (**Figures 44**). The distribution of the datable bowls was as follows:

Bowl Styles

Dutch bowls	English Bowls
	1600-1640: 6
1620-1650: 11	
1625-1660: 4	
1635-1655: 8	
1640-1660: 3	1640-1660: 19
1640-1670: 1	1640-1670: 9
1640-1675: 3	
1650-1675: 7	
1650-1680: 6	
	1660-1680: 6
	1660-1690: 1

As can be seen in the previous table, the bowl styles fit well with the ca. 1630-1676 occupation range for the site.

The Dutch styles that were identified were as follows:

Duco style	Date Range	Count
23	1620-1650	11
51	1635-1655	4
25	1640-1660	3
3	1640-1670	1
31	1640-1675	3
26	1650-1675	7
5	1650-1680	1
6	1650-1680	2
54	1650-1680	1

Oswald Type	Date range	Count
36-4	1600-1640	6
39-5	1640-1660	18
39-5/6	1640-1670	8
41-17	1640-1670	2
39-7	1660-1680	2
39-6	1660-1680	1

41-18	1660-1680	3
49-5	1660-1690	2

Pipe bowl fragments were concentrated around the main hearth, the cellar hole, and to the north and east of the eastern hearth (**Figure 45**).

Distributions

Native Clay Pipes

Three fragments of at least one Native made clay pipe was recovered. The bowl appeared to be round in body with at least a 1.5 cm exterior rim diameter and a .25 cm thickness. This pipe may have been used by the colonial inhabitants at the site or it may have been part of the pre-colonial Native occupation of the site. The remaining two fragments lack any identification numbers.

Steatite Pipes

Eleven green gray to dark gray green steatite Native made pipe stem and bowl fragments were recovered. These represent five individual pipes, three in imitation of small belly bowls down to the incised line below the rim signifying the rouletted lines often found on these pipes and one possibly more Native inspired with squared sides and a squared stem/ bowl juncture (**Figure 46**). The steatite pipes were concentrated around the main hearth and to the east of it in the yard and east of the east hearth (**Figure 47**).

Soapstone pipes are noted in at least one probate inventory of the period. This was in the 1643 inventory of William Kemp. William Wood, an observer of the colony in 1634, noted that: "From hence (the Narragansett) they have their great stone pipes, which will hold a quarter of an ounce of tobacco, which they make with steel drills and other instruments.....they can imitate the English mold so accurately that were it not for the matter and color it were hard to distinguish them. They make them of black and green stone; they are much desired of our English tobacconists for their rarity, strength, handsomness, and coolness." (Wood 1977: 81). Stone pipes have also been recovered from other sites within the former Plymouth Colony such as the C-21/Allerton in Plymouth and the Winslow site in Marshfield, Massachusetts.

Redware

Seven redware pipe stems and bowls fragments were recovered representing the two styles that these pipes were made in, the large-sized belly bowl and the heelless funnel. The stems had 7 and 8/64" stem bores. These fragments represent at least two pipes. Redware pipe fragments were concentrated to the east of the main hearth in the area between the two hearths (**Figure 48**).

Red clay tobacco pipes are common in New England on late seventeenth century sites. Pipes of this type are generally found on sites in Maine at least dating from 1660-1676 and never make up a large percentage of the assemblage (Faulkner 1987:171). Redware pipes in New England appear to have European precedents in white clay, but closer to home, red clay pipes were produced in Virginia from the very earliest years of settlement.

The pipe makers in New England, possibly those in Charleston, Massachusetts, may have gotten the idea from people in Virginia. Redware pipes possibly began to be produced as a result of the first or

second of the Navigation Acts of 1660 and 1662. The Navigation Acts were designed to protect English trade and reduce foreign trade:

"after the first day of December, 1660, and from thence forward, no goods or commodities whatsoever shall be imported into or exported out of any lands, islands, plantations, or territories to his Majesty belonging or in his possession, or which may hereafter belong unto or be in the possession of his Majesty, his heirs, and successors, in Asia, African, or America, in any other ship or ships, vessel or vessels whatsoever, but in such ships or vessels as do truly and without fraud belong only to the people of England or Ireland, dominion of Wales or Town of Berwick upon Tweed, or are of the built of and belonging to any of the said lands, islands, plantations, or territories, as the proprietors and right owners thereof, and whereof the master and $\frac{3}{4}$ of the mariners at least are English" (Merrill Jensen ed. English Historical Documents (1962) v.9)

These pipes may have been produced to supply a commodity at a low price which was originally coming from England or Holland. Fragments of redware pipes have been recovered from Pentagoet (1635-1674), the Clarke and Lake site (1654-1676), Burr's Hill (c.1660-1676), C-21 (1650-1699) (Faulkner 1987:171; Baker 1985:25; Gibson 1980:164).

9/64" bore

Pipe fragments with 9/64" bore were recovered from around the main hearth and to the east of it (**Figure 49**).

8/84" bore

Pipe fragments with 9/64" bore were recovered from in and around the cellar hole, to the north of the main hearth and to the east of it associated with the eastern hearth (**Figure 50**).

7/64" bore

A greater concentration of 7/64" bore pipes were recovered from roughly the same areas as the 8/64" bore stems. A larger concentration were found to the north of the eastern hearth and to the south of the main hearth (**Figure 51**).

6/64" bore

Pipe fragments with 6/64" bore were concentrated around the main hearth and to the east of it and around the eastern hearth (**Figure 52**). The distribution of pipe stems appears to indicate that the two hearths, if they both represent hearths within buildings, were used contemporaneously.

5/64" bore

Two 5/64" bore stem fragments were found to the north of the eastern hearth (**Figure 53**).

4/64" bore

Stems with 4/64" bore were found in the upper fill of the cellar hole and to the immediate north and south of the main hearth (**Figure 54**). These smaller stem bores, the 4/64" and the 5/64" fragments, are assumed to represent field debris from later occupations near the site and are not directly associated with the house occupation.

Marked Bowls

Only 6 bowl fragments were recovered that bore any maker's mark. These marks were all located on the bottom of the spur and were include (**Figure 55 and 44**). They consisted of a gauntlet, the letters "IS" (N=2), a heart, a fleur-de-lis and the letters HC within a circle of dots. The gauntlet was noted by Oswald as having been used by Somerset, England pipe makers from 1630-1670 (Oswald 66). Similarly marked pipes were recovered from a 1631 context at Martin's Hundred in Virginia (Noel Hume 2002). Pipes marked with the initials IS are believed to have been the product of either John Smith (1634) or John Stevens (1644) who may have been making them in London. The bowl style is attributable to the 1640-1660 period. The include heart is considered to be a product of London pipe makers from the 1630-1660 period. Pipes bearing this same mark have been recovered from Martin's Hundred in Virginia from a 1630s context (Noel Hume 2002). The bowl style is from the 1640-1660 period. The fleur-de-lis is possibly an English mark, although they were used as pipe decoration on both English and Dutch pipes. Oswald states that this mark is attributable to the 1640-1670 period (Oswald 63). Pipe bowls bearing this mark were recovered from Martin's Hundred in a 1631 context (Noel Hume 2002). The bowl shape for this heel was indeterminable. The final maker's mark is that of the initials HC within a circle of dots. The initials may be those of Humphrey Clark (1657), Henry Cornish (1662) or Henry Crispe (1665). The use of the dotted circle began around 1640 and was in use until the third quarter of the seventeenth century. The bowl style is datable to the 1660-1680 period and the bowl had a 7/64" stem bore (1650-1680).

Marked Stems

Twelve stems bearing six different decorative techniques were recovered. The majority of these (N=10) are attributable to Dutch manufacture (**Figure 56**). These include three stems with 7/64" bore diameters bearing multiple fleur-de-lis impressed on the stems which Faulkner dates from 1625-1660 (Faulkner 1987). The second Dutch type bears a number of diamonds with four fleur-de-lis within them, attributable to the 1635-1660 period by Faulkner (Faulkner 1987). This stem had an 8/64" stem bore. Four stem fragments, all with 6/64" stem bores, carried fine Baroque floral molding attributable to 1630-1655 (Faulkner 1987). Two stems bore paired fine rouletted lines around their circumferences.

The English stems consisted of one bearing incised bands and diamonds and the letters LE on a 7/64" bored stem. This mark is attributable to Bristol pipemaker Llewellyn Evans who was producing his pipes from 1661-1686 (Walker 1977:1428). The second stem bears incised triangles in front of hatch

marks which in turn are in front of ovals which precede a jagged line. This is also attributable to Bristol pipe makers of the second half of the seventeenth century.

18th-19th century pipes

Nine eighteenth to nineteenth century pipe bowl fragments were recovered. These represent continued occupation of the site by Clark or someone else, at some time after the attack on the house. Briefly, these pipes bear different “TD” marks dating from 1748-1770 (**Figure 55**), one ribbed bowl (Hume 1790-1820), two ribbed and garlanded bowls (Hume 1790-1850) and three bowl frags with molded flowers (Hume 1790-1850).

Bottle glass

Fernstrom had asked Mr. George S. McKearin of Hoosick falls, NY, author of several antique glass books, to analyze the collection from the site. McKearin concluded that both the window and bottle glass looked old.

Fernstrom grossly identified a minimum of six bottles in the collection:

Count	Identification	Context
119	fragments of bottle glass	scattered across site
4	fragments square thick bottle glass	cellar hole below 1 st cc lens
2	fragments of very thin square based bottle	13.0, cellar hole bottom 6"layer
14	fragments of very thin round based bottle	8.0, 10R3, 10R4, 11I3, 11R4, 13I4, 14L3, 14R5, 15L2
1	fragment of heavy dark green bottle neck	Survey trench 3 east of main site
2	fragments whole neck thin bottle	13L2
2	fragments medium thin bottle necks	Unknown context
2	1 glass drinking vessel (milk glass)	Unknown context
Total 146		

In the collection today, a total of 129 fragments from the original excavation and three fragments from the excavations carried out in 1968 by James Deetz. A total of 20 bottles were identified:

Vessel Number	Description	Measurement	Context
1	Wine Bottle	12 cm body dia	Unknown
2	Wine Bottle	3 cm rim dia	C1-712, 861, Unknown (2)
3	Wine Bottle	10 cm base dia	C1-183, Unknown
4	Wine Bottle		C1-876, F3, Unknown (3)
5	Pharmaceutical	6 cm base dia 2.5 cm mouth dia	C1-537, 1968-909, Unknown (12)
6	Wine Bottle		C1-3, 750, 1968-909
7	Wine Bottle	14 cm body dia	C1-F3, Unknown (4)
8	Pharmaceutical	6 cm base dia, 2.5 cm neck dia	C1-623, Unknown (8)

9	Pharmaceutical	6 cm base dia	C1-878, Unknown (12)
10	Pharmaceutical	11 cm body dia	C1-22, 188, Unknown (8)
11	Pharmaceutical	11 cm body dia	C1-638, 684, 686, 758, Unknown (12)
12	Pharmaceutical	3 cm rim dia	Unknown (2)
13	Pharmaceutical	6.5 cm body dia	Unknown (3)
14	Pharmaceutical	2.5 cm body dia	C1-426, 638, 663, 665, 666, Unknown (3)
15	Case Bottle	3.29" dia base	C1-640, 759, 833, 845, Unknown (7)
16	Case Bottle	.065" thick	Unknown
17	Case Bottle		Unknown
18	Case Bottle	.105" thick	Unknown (6)
19	Case Bottle	.315" thick	C1-184
20	Case Bottle	.065" thick	Unknown (2), 1 melted
Miscellaneous Fragments			C1-48, 493 (2), 774, 1968-933, Unknown (10)

Six wine bottles, six square case bottles, and eight smaller bottles, possibly pharmaceutical bottles, were identified. These fragments were concentrated around the two hearths (**Figure 57**). Only two of the case bottles still retain context information, but these two indicate that case bottles were more commonly associated with the cellar hole and the western end of the house. Wine bottles were found near the main hearth and especially in the east yard. Pharmaceutical bottles were found primarily in the northern yard, around the main hearth, and in the eastern yard.

Wine	Case	Pharm
3 B2	640	22 A2
183 C6	759 14R5	188 D3
712 PZ	833 ?	426 G4
750 1L5-1L4	845 Cellar	623 E7
861 Trench 3	184 Plow	638 (2) F6
876 G4 Hearth		663 M3
F3 (2)		665 M3
		666 L7
		684 G7
		686 G6
		758
		878 I4
		537 H5 pit

It is possible that the liquids stored in the case bottles (such as gin or aqua vitae) were stored in the interior cellar while wine, or at least the bottles that could be filled with wine, were stored in the eastern structure. It is also possible that their distribution is a result of the use of case bottles earlier in the 17th century and case and globular bottles in the mid to late 17th century. Thus, the western end of the house may be older than the eastern. It is not known why the pharmaceutical bottles were more common in the northern yard unless there was some activity in this area that required their use.

Pewter Bottle Neck

A pewter bottle neck (C1-151) was recovered from square B1. It measures 4 cm in diameter and is slightly crushed. It was probably used in association with one of the glass case bottles that were recovered. Threads for the pewter cap are present on the interior.

Kitchenwares

Brass Kettle Scrap

Excavations recovered 51 pieces of brass kettle scrap, many of which bore definite evidence of having been cut with shears or scissors. Several pieces bore evidence of rivet holes from construction or repair and the excavators found two folded seventeenth century repair pieces (C1-167 and 175). One large cast iron handle from a large brass kettle was also recovered from the last 6" of the cellar hole. Excavations also recovered two brass circles, one of which was pierced for suspension (C1-173), while the other was just a roughly cut disc measuring 1.2 cm in diameter and having come from square 7L2 (C1-839). Both of these pieces may have been made for trade with the Natives or may have been made by the Native inhabitants prior to Clark's occupation of the property. The majority of the brass scrap was found in the eastern portion of the site between the house and the eastern hearth (Feature 12L7) (**Figure 58**).

Iron Kettles

Twenty-eight cast iron kettle fragments were found in the collection. These were found to have come from a minimum of three kettles. One kettle with a constricted neck and expanding belly was found in the last 6" of the cellar hole (C1-968). One kettle with a raised ridge encircling the body, possibly another constricted necked form, was found in the eastern yard (C1-89) (**Figure 59**). This vessel had a 13.5" diameter at the neck/ body juncture. One vessel with a straight-sided body shape was found in the last 6" of the cellar hole fill (C1-586). This vessel had a rim diameter of 11". Twenty-one other fragments with no diagnostic characteristics or catalog numbers were also found.

Spoons

Fernstrom reported one iron spoon and 10 latten spoons in the collection. The iron spoon had a large bowl of a shape that dates it to the 19th century. The latten spoons were analyzed by Percy Raymond of Lexington, MA. At the time of Fernstrom's writing, Raymond was the recognized authority on latten spoons.

Percy Raymond of Lexington, MA analyzed them. A photograph of the spoons analyzed by Raymond is shown in **Figure 60**. Raymond's report stated that most of the spoon fragments he analyzed were handles with few bowls present. Raymond's report on the spoons is summarized below. Raymond found the largest fragment consisted of a fig-shaped bowl with 2 1/4" of the stalk remaining. The stalk was 1/4" broad at the bowl end, flattened and maintained a six-sided profile throughout its length. It bears the touch mark RT at the bottom of the bowl and has been tinned, which dates it to after 1650. This spoon was reported to have been found in the area of the eastern hearth but is no longer present in the collection.

Two fragments of a common seal top spoons (C1-621, C1-644) were what are called “short type” seal and balusters. These bear only a short ball and annulus below the seal. The seals are oval, not round, and the stalks are slender, rounded hexagonals. Neither is tinned and Raymond dates them to the late 16th to early 17th century. One may be present in the collection, but it is unmarked. The other may be the spoon that was reported to have the letters “RM” scratched onto the top of the seal (**Figure 61**).

Two slipped-in-the-stalk spoon handles (C1-116, C1-119) were found. One is 4" long and the other 3 3/4" long. The upper ends are flattened and the bodies are six-sided. The upper end of the shorter one is 5/16" wide while the other is 1/4" wide. Raymond dated these to the late 16th to early 17th century.

Raymond described the remaining fragments (C1-334, C1-396) as “perplexing”. Neither had a definite upper terminal, and one is 3 5/8" long and 1/4" wide throughout its length. Both are somewhat diamond shaped with widths that are greater than thicknesses. These are of a type now called Puritan spoons which date from 1650-1676.

Four specimens apparently were not described by Raymond, two of which (C1-868, C1-818) were long seal top spoons and one of which has disk seal broken off both similar to C1-621. The remaining undescribed piece was a very small pewter stalk fragment (C1-118) with neither bowl nor terminus). A second spoon handle (C1-152) is also present in the collection.

Five spoon fragments remain in the collection: the iron spoon bowl (from 11L6), one unnumbered seal and baluster spoon terminal, the two Puritan spoon handle (C1-334, 396), and one slipped-in-stalk handle (C1-116) (**Figure 62**).

Overall, the spoons were concentrated at and around the eastern hearth (**Figure 63**). The long type seal and baluster spoons were found at the eastern hearth, near the cellar hole, and between the two hearths. The “short type” seal and baluster spoons were found near the cellar hole and near the eastern hearth. The slipped-in-stalk spoons were found around the eastern hearth. The Puritan spoons were found at the main hearth and between the two hearths. The iron and pewter spoons were found between the two hearths.

Pewter Fragments

Nine unidentifiable pewter fragments are present in the collection, seven of which bear no catalog or locational information. The remaining pieces (C1-325 and 618) was recovered from square F5 and N5 from the burned area. It is believed that these probably came from some sort of kitcheware (mug lid, plate, or spoon).

Hearth Chain

One possible iron hearth chain link was found during Deetz's 1960s excavations. This link is oval in shape and is 2" in length.

Cruise Lamp

An iron betty or cruise lamp was found in the bottom 6" of the cellar fill. It measures 10 x 6 x 3.5 cm and most probably provided illumination in the cellar (**Figure 64**). A very similar lamp was recovered from the site of the Clark and Lake trading house in Maine.

Iron Hearth Tool Handle

An iron hearth implement handle bearing a hooked end was recovered from the the cellar hole above the first charcoal lens. This handle is cast iron and has a total length of 12.5" (**Figures 65 and 66**). It was probably from a ladle or long handled spoon.

S-Hook

One iron S-hook was recovered from the bottom 6" of the cellar hole fill. It measures 16 cm in length and is slightly squared at one end, while the other end is rounded (**Figure 67**). Fernstrom reported four other "pot hook" fragments from the collection from 11L4 and the cellar hole associated with the first charcoal lens. They were described as of conventional shape, made with strap iron with a U-shaped hook at one end and slightly squared hook at other.

Heavy Pulling Hook

A large iron hook, probably for a hearth chain, was found in square 8L7 in the eastern structure (**Figure 68**). It may have been used in association with that hearth. It does not appear to be in the collection any longer.

Weaponry

Flint

The evidence for flint working at the Clarke site is one of the largest categories of artifacts recovered. When compared with the assemblages from the Plantation's collections, as well as from other seventeenth century colonial sites, the Clarke site by far has the largest assemblage of flint working debris seen to date. When the collection was looked at in 1997, one thousand one hundred and thirty pieces weighing a total of 10 pounds were found. When the pieces remaining in the collection were compared with those in the 1940s catalog, it was found that there were more pieces present today than were in the catalog. It is not known how this occurred, but it is safe to assume that the entire assemblage excavated remains in the collection. An additional seven flint fragments were recovered from the 1968 work at the site, four fragments from the 1987 work and one fragment from the 1995 work bringing the total to 1,142 fragments.

The occurrence of such a large amount of flint working debris from a colonial site is very unusual. Often times a few flakes, a strike-a-light to start fires or a few gunflints will be recovered from a site, but it has long been assumed that the colonists did not actively work a great deal of flint (Faulkner 1987: 153). It can be assumed from the large amounts of debitage and the significant number of

finished flints, that the production of gunflints was a significant part of the activities at this site. The most likely reason for this was the war which was occurring at the time that the house at the site was destroyed in 1676. The occupants at the site were from the Clarke family and William Clarke was engaged in military service for the colony. He also was a merchant and was likely supplying the colony with goods such as powder, shot and gunflints during King Philip's War. It appears that either he was producing the gunflints himself or he had hired someone to knap the gunflints for him at the site.

We can be sure that the flint working was happening at the site at the time that it was destroyed by the fact that 8% of the debitage was calcined by the intense heat of the fire. If there had been flint knapping at the site 20 years before 1676, one would expect the material to have been buried deep enough that it would not have been affected by the heat of the fire.

Most able bodied men were in the service of the colony at the time so the question then becomes, who was knapping at the site. The gunflints which resulted from the knapping activity appear to be very basic and crude. Essentially, a flake was struck from the core and then was slightly worked on one edge to straiten it so it would produce a better spark. It was reported at the time that Clarke was very friendly with the natives of the area, probably the Christian natives living to his south at Manamet Point. The possibility exists that some of the native men may have been hired by Clarke to knap flints to supply the colony. It is known that the colonial government was hesitant to utilize the natives in the war so perhaps they were employed for the cause in other ways. The attack on the house may have even been an attempt by the assailants to place the blame on the Christian natives in the hope it would drive them into the war on the native side against the English. It is known this happened to some of the Christian towns outside of Boston by natives to the south. The quality of the gunflints which resulted from the knapper show us that he was not a skilled knapper or one who was a specialist as Welch hypothesized in 1964 when he examined the collection (Welch 1964:89).

Irrelevant of who was producing the gunflints and debris, there were four colors of flints recovered from the excavations, as can be seen in **Figure 69**. Light gray flint predominated with 562 pieces being recovered. Dark gray was the second most common color with 488 pieces present. It should be noted that the separation of the dark gray and the light gray flint was somewhat arbitrary. Some larger pieces were found to be light gray on the exterior and dark gray on the interior. It is not known if this

represents a weathering of the flint or if there were two different sources for pure dark gray and dark gray mixed with light gray flint nodules. There were 41 fragments of tan to blond flint recovered. These are usually associated with flint coming from France, but there may have been small sources of it in England as well. Finally there were 94 pieces of burned or calcined flint recovered. These had been in a fire which caused the calcification of the flint. Most likely this was a result of the destruction of the house.

Flint occurs in Europe most commonly in the form of nodules which erode out of chalk cliffs. The nodules often end up at the bottoms of rivers and beaches at the bases of such cliffs. Some insight may be gained by looking at the cortexes of the flint fragments recovered from the Clarke site. After Karl Fernstrom had conducted his fieldwork at the site in 1949, he reported that there were approximately 16 pounds of flint recovered (Fernstrom 1949: VIII G. 10b). E. Sohler Welch reported in 1964 that

there were 9.6 pounds of flint working debris in the collection (Welch 1964:87). The average flint cobble available today weighs approximately 3.5 pounds for a nodules with a circumference of 13" and a diameter of 5". The nodule circumferences which the cortex fragments from the site suggests does not appear to have been huge nodules, so a weight of 3 or so pounds may have been the average of those as well. This means that there were most likely only three or so nodules worked at the site.

There were three types of debitage which resulted from the reduction of the nodules. These are flakes with no cortex remaining, those with a weathered cortex and those with a chalky cortex. The flakes which have no cortex on them are the flakes which were struck from the cores after all of the cortex had been removed (**Figure 70**). The flakes with cortex remaining are possibly a guide for discovering where the cobbles were collected. Nodules which erode out of chalk cliffs and are recovered at the bases of cliffs such as those at Dover, England, maintain a cortex which has a chalky appearance. Nodules which had been water tumbled in a river or on a beach do not maintain the chalky surface on the cortex. As can be seen in **Figure 71**, most of the fragments from all three flint classes had remnants of a chalk cortex on them. This seems to imply that most of the cobbles had been collected probably in England, from the chalk cliffs or from the base of the cliffs. Not as many of the cobbles had been water worn to the extent that all of the chalk cortex had been lost. This may imply that people in England were actively seeking out and possibly quarrying nodules to be shipped to New England in the seventeenth century. This would be opposed to William Clarke merely picking over ballast flint which was often composed of dredged gravels from the rivers.

The reduction sequence at the Clarke site for the production of gunflints, is hypothesized as follows. A suitable nodule was selected and placed on a hard surface such as a table or large block of wood. A hammer was then used to knock off a spall from one edge of the nodule. This spall was then further reduced either by splitting it again with a hammer or merely by trimming the edges into a roughly square shape possibly with pliers. The worker then returned to the nodule to remove another spall and sequence was followed until nothing worth working was left of the core. At the Clarke site, 21 of the 69 (33%) of the finished gunflints had cortex remaining on one side of them. The fact that no large cores were recovered from the excavations also bolsters the notion that the cores were worked down until completely exhausted.

The debitage from the flint working activity at the site was widely distributed across the site with most of the areas excavated containing some fragments of flint (**Figure 72**). The largest concentration of flint working debris was located around the household hearth and out into the east yard. In this area, designated concentration 1, 379 fragments of flint were recovered (as recorded in the catalog). This strongly suggests that the space between the household hearth and the other hearth near the stonewall was an open space as opposed to being part of one long house. The second major concentration is located to the south of the house, strongly suggesting that there was a doorway located on this side and that flint working was going on outside of that door. The third concentration was located to the north of the house in an area which, from the analysis of the distributions for other artifact classes, appears to have been a refuse deposition area. It is interesting to note that feature 10L5, which contained a significant amount of lead waste from the production of shot, did not contain one piece of waste flint. This strongly suggests that the two activities occurred at different times, although possibly not too distant times.

Plotting the distribution of the flint debitage across the site proved to be somewhat of a challenging task. Much of the flint in the collection is unnumbered, and as such can only be considered as surface scatter from the site in general. Fortunately, the catalog quantified the flint which was from each square, and a gross distribution of undifferentiated flint debitage can be examined (**Figure 72**). As can be seen, there are three lumped concentrations at the site (**Table 8**). The first, and by far the largest, is located to the east, south and west of the structure. Within this concentration, the flint debitage was sub-concentrated around the hearth and to the immediate south and east of it. This was probably the result of the flintknapping having been carried out throughout the winter up to March 18, 1676, around the warmth of the hearth fire. The possibility of a entry being located on the south side of the house, while practical to keep the cold out and take advantage of the sun, is bolstered by the distribution of flint just outside the house. The subconcentration to the west may have been the result of prior limited flintknapping activity at the site, while the subconcentration to the east may be the result of outside knapping earlier in previous year in the yard.

The second concentration was discovered to the north of the house in an area in which shellfish was also found to have been concentrated, indicating this was most likely an area where hearth debris was dumped.

The final concentration was found to the east of the main site again appears to have been a place where refuse was disposed of since there was no other flintknapping debris found around the two squares in that area.

Table 8. Flintknapping concentrations

Concentration #	Number of frags
1a	301
1b	44
1c	114
2	23
3	21

When the distributions for the four different colors of numbered flint in the collection was compared to the distribution for the catalog distribution. All but one of the concentrations was found to remain present. The missing concentration was large number of pieces noted around the hearth. These missing pieces are most likely among the unnumbered pieces presently in the collection. As can be seen in **Figures 73, 74, and 75**, the different colors of debitage were plotted separately to see if there was any difference in their distributions. The tabulation of the four main concentrations and the qualification of the colors of flint found in each is shown below in Table 9.

Table 9. Flint colors represented in the flintknapping concentrations

Concentration #	Dark Gray	Light Gray	Blond	Calcined
1	38	78	4	13
2	12	22	1	3
3	4	14	2	1
4	4	7	2	2

The only significant difference in the concentrations of the different colors of flint can be seen in concentration 3 where most of it was composed of light gray flint. It is not known at the present time if this is significant or not. It does appear that the south and west sides of the house were the loci of the majority of the activity at the site. This was also found to be the case at the Aptuxet Trading Post Museum/ Perry site in Bourne, Massachusetts. This may have to do with the use of the summer sun for working outside.

Gunflints

There are three main types of gunflints which have been reported in the literature. The first is a the bifacial gunflint which has also been called the Nordic gunflint. These are believed to have been manufactured in the Jutland in Denmark and can be identified by the fact that they are flaked on both faces of the flint. Witthoft dates these to 1620-1675 (Witthoft 1966:22). This is a form which was also used by New World Natives when first producing gunflints. There were no examples if this type of gunflint found in 1997 in the collection from the Clarke site. Welch, in 1964, states that a Mr. Witthoft identified one, and this one is illustrated in Welch's report (**Figure 76**). The only other Plymouth Colony site which has yielded a bifacial gunflint is the Allerton-Cushman (C. 1630-1632, 1650-1690) site in Kingston, Massachusetts. Apparently, this being the earliest type of gunflint, it would be associated with early sites. The tobacco pipe analysis shows that the Clarke was occupied circa 1635 so this one bifacial flint probably dates to that occupation.

The second type of gunflint is called the gunspall or Dutch flint. In the 1970s much debate had gone on as to whether or not these were actually produced in Holland as Witthoft states. Stephen White convincingly argued that they were in fact a product of England which was replaced circa 1780 by the blade technology for producing gunflints. Gunspalls result when short flakes are struck either from the concave or convex surface of a flint core. They are bulbous near the point of impact, taper to a feather edge , and have been described as wedge shaped. The flake is usually trimmed about the sides and near the bulb forming a rounded heel while the termination is usually left thin and square. The thin termination strikes the battery. Witthoft feels the Dutch were the main producers of them, and that they date from 1650 to 1700. While Witthoft's assertion that they were produced only by the Dutch as been overruled, the date he gives for their introduction is felt to be essentially correct. These were felt to have replaced the bifacial gunflints as lithic technology became more time efficient in producing a working gunflint in the shortest amount of time. This was the most commonly occurring form of gunflint at the Clarke site.

Using experimental archaeological techniques, that a rough functional gunspall can be produced by a laborer vaguely familiar with flint knapping in approximately 3-5 minutes. It has also been found that when producing gunflints in this manner, little waste remains and cores can be worked down until they are virtually indistinguishable from lithic debitage in an assemblage. The author believes that the advantages to producing a gunflint this way was that a great number could be produced from a single 3 pound flint nodule in a relatively short period of time using relatively unskilled or semi-skilled labor. It is interesting to speculate that Clark may have employed Natives to knap these flints, as they would have been cheap labor with previous cultural experience at least, with flintknapping. It is not known how one could prove such a hypothesis though. The disadvantages are that this type of flint was found, in replication studies, to be more damaging to the striking surface of the frizzen and eventually would wear out a frizzen faster than using a professionally produced gunspall would. This is due to the fact that the striking surface of the flints at the Clarke site, as well as those in the replication studies were not as straight and smooth as professional flints. As a result they have a tendency to score the frizzen face in certain areas more than others, producing small gouges in the face. Professionally produced spalls, and especially blade flints are found to have a straighter more even surface which strikes the frizzen. This may be one of the reasons the blades eventually replaced the spalls.

The final type of gunflint is the blade or French gunflint. These were in production by 1643 in France, and it is felt that the English adopted the technology in the later part of the 18th century. This technique produces a superior product with less waste than the spall gunflints. The blades are long, prismatic flakes, triangular or trapezoidal in cross-section, which have been struck from a polyhedral core with a hammer. Generally they have one facet on their ventral side and two or three on the dorsal side. Their production began as early as 1643 at Meusnes in France and are generally produced out of tan or blond flint characteristic of the region. They are believed to have replaced the gunspalls by 1750.

In the Clarke assemblage, only one blond blade gunflint was found. Four gray or dark gray blade gunflints were found. This may be evidence that blade gunflints were in production in the colonies earlier than the middle eighteenth century date which has been formerly assigned to them. It appears that blond flint, which is usually attributed to the French was being worked, but was not the most significant variety. One blond prismatic blade possibly points to the use of blade technology with a limited application at the site. The blade was rather narrow and may have been an accidentally struck flake from gunspall production, rather than having been a by product of blade technology.

The nomenclature relating to gunflints identifies five main parts to any type of gunflint. The definitions used here are taken from the French mineralogist Deodat Guy Sylvain Tancrede Gratet de Dolomieu, hereto referred to as Dolomieu, who published his nomenclature in 1797 (Dolomieu 1797: 709). The parts of a gunflint which will be referred to in the following discussion are:

- Match:** ending in a slightly sharp bevel, hits the battery. The match must be 2-3 lines (5-7mm) wide; if larger, it would be too fragile, if shorter, it would give less sparks.
- Sides/ lateral margins:** are always slightly irregular
- Heel:** opposite the match, has the full thickness of the flint
- Under surface:** is uniform and somewhat convex
- Seat:** The small superior face located between the edge which ends the match,

and the heel; it is slightly concave; the jaws of the cock bear upon it to keep it in its place.

The assemblage from the Clarke site is composed of sixty two partial or complete gunflints of the spall and blade types. A breakdown of the gunflint and debitage assemblage is given in **Table 10**. None of the bifacial or Nordic gunflints were present in 1997.

Table 10. Evidence of Flint Working at Clarke Site

	Dark Gray	Light Gray	blond	Calcined
Spall Gunflint	16	34	6	1
Blade Gunflints	3	1	1	
Debitage	488	562	41	94

The greatest percentage of the gunflints recovered were of the spall type, which is consistent with Witthoft's assertion that these were produced in the middle to late seventeenth century. The classic spall gunflint shape is shown in Figure 74. As can be seen the heel of the flint is rounded and the stone is relatively regular in shape. At the Clarke site only three of the flints recovered closely match this shape. All three of these flints are of blond flint and may have been manufactured in Europe and were purchased by either Thomas or William Clarke.

The most common style of spall gunflint is roughly rectangular in shape and the heel often bears traces of the parent nodule's cortex. This is an unreported style of spall gunflint, and because it does not fit the classic definition of a spall flint, it may have been missed in assemblages from other researcher's sites. It is the author's belief that this represents a gunflint style which only loosely took its precedent from European manufactured flints. This style of flint will heretofore be referred to as advantageous spall style gunflints.

Advantageous flints result when the knapper working the flint core was most interested in producing quantities of serviceable flints as opposed to quality or "classic" spall gunflints. The production of advantageous flints can result from either a conscious effort on the part of the knapper to produce as many gunflints as possible from a limited supply of raw material, they may be the result of the inexperience of knapper in producing gunflints, or they may be a combination of the two factors. The advantageous flints from the Clarke site exhibit fine chipping along the match and often the sides although it is not always present. This chipping is a result of pliers being used to trim the edges to a roughly rectangular shape and to bevel the match. Some of these gunflints appear to be nothing more than a single relatively thin flake struck off the core and trimmed while others are thicker and the and exhibit a trapezoidal shape in cross-section.

The blades are all relatively standard in shape. They are square and trapezoidal in cross-section with linear flake scars on the seat. These flake scars are the result of previous prismatic blades having been struck off of the core.

The assemblage of gunflints from the Clarke site differs from that of most seventeenth century sites yielding gunflints in that many of the blade gunflints are of gray flint and many of the spall gunflints

are of blond flint. It has commonly been assumed that blond flint is associated with gunflints manufactured in France and Grey flints are associated with gunflints manufactured in England or Holland. As a result on most sites occupied in the late seventeenth century, the blade gunflints recovered are predominantly of blond flint. It is believed that the English did not begin to use this technology until the 18th century. The occurrence of gray blades in the seventeenth century is supported by the assemblage at the French site of Pentagoet (1635-1674) where one gray blade and one blond spall gunflint was found.

The distribution of the gunflints across the site closely parallels the distribution of the debitage. As shown in figure 3, most were recovered to the south of the house, outside of where the entrance door is believed to have been. In this concentration, most were dark gray spall gunflints (N=9) with the light gray flints following in abundance (N=6) and only one blond gunflint being found. It is interesting to note that in this area the abundance of dark gray to light gray gunflints is opposite to that of the dark gray to light gray debitage. There was more light gray debitage recovered from this area but more dark gray finished gunflints. It is not known at the present time why this may have occurred.

The sizes of all of the classes of gunflints hints at the types of firearms they were intended to serve. The range of sizes (in millimeters) can be seen in Table 11. The smaller size flints, those below 1.7cm (5/8") most likely were made for pistols. The most common size of the flints were between 2.1 and 3.5cm (7/8-1 5/16"). These would fit locks on muskets and fowlers. One very large flint was recovered. This advantageous spall type gunflint was 4.2cm (1 8/16") wide on its striking edge. A gunflint of this magnitude would fit only one type of gun in use in the period, a wall gun.

This is the first evidence for the use of wall guns in New England at this period. Wall guns were massive flintlock guns with locks that were larger than the standard musket lock size, and as a result the gunflint which would fit into that lock would be larger than a the musket flint.

Table 11. Measured Sizes of Gunflints

	Dark Gray	Light Gray	blond	Burned
Spall	2.0cm	1.6cm	1.7cm	
	2.0cm	2.0cm	2.2cm	
	2.2cm	2.0cm	2.4cm	
	2.4cm	2.1cm	2.5cm	
	2.5cm	2.1cm	2.8cm	
	2.5cm	2.2cm	3+cm	
	2.5cm	2.2cm	3.5cm	
	2.5cm	2.2cm		
	2.6cm	2.3cm		
	2.6cm	2.3cm		
	2.6cm	2.3cm		

	2.7cm	2.3cm		
	2.8cm	2.3cm		
	3.1cm	2.3cm		
	3.2cm	2.3cm		
	4.2cm	2.5cm		
		2.5cm		
		2.5cm		
		2.6cm		
		2.7cm		
		2.7cm		
		2.7cm		
		2.8cm		
		3.0cm		
		3.1cm		
		3.1cm		
		3.1cm		
		3.2cm		
		3.2cm		
		3.3cm		
		3.4cm		
		3.5cm		
Blade				
	2.0cm	2.2cm		2.1cm
	2.0cm	2.5cm		
	2.3cm			
	2.5cm			

The evidence for flint knapping at the Clarke represents one of the most extensive collections which have been seen to date in the former bounds of Plymouth Colony and possibly in New England. It appears that in circa 1675-76, someone at the site, was engaged in the production of gunflints, most likely for the use of the colonial militia. The knapper was inexperienced but apparently was intent on producing the maximum number of serviceable gunflints from a limited supply of raw materials. Positioning himself around the hearth in colder weather and in the south and east yards on better days, he produced at least 50 spall gunflints from imported dark and light gray flint nodules. The gunspalls he produced differed from those which were being professionally made in England at the time. This knapper took advantage of a great many of the flakes which he struck from the core. The result was that numerous gunspalls retained evidence of their original cortex, they did not have any overwhelming standard shape and show only a limited amount of retouching. It appears that these flints were produced to supply the militia with as many gunflints as possible in a short amount of time.

At the same time, blade gunflints were being imported and possibly produced at the site. It has been believed that these gunflints were produced only in France until at least 1780, but the blade gunflints from the site are predominantly made of gray flint, usually associated with English flint sources. One long thin prismatic blade, characteristic of the blade technology used to produce gunflints, was recovered from the excavation. If flint knappers in England were not producing this type of gunflint, then this is the earliest evidence of blades being produced by the English anywhere. Even more perplexing is the fact that it is made of blond flint usually associated with France. Other New England colonial sites have produced blade gunflints as early as 1676, but this is the first one where it appears they were also producing them. Possibly the knapper at the Clarke site was experimenting with the blade technology for the same reasons that it was adopted eventually in England. Blade manufacture results in less waste and produce a superior product. Perhaps the difficulties of the war had spurred this unknown knapper to experiment with replicating the technique he had observed on blade gunflints imported from France.

Lead Shot

Fernstrom reported that all of the lead shot was found in the area between L2 and L9 with exception of squares 11R1 and 12R1 the heaviest concentration was in the vicinity of the eastern hearth and squares L5 and L7 (**Figure 77**). Fernstrom reported that a total of 289 pieces of lead shot in a variety of sizes was recovered (**Figure 78**):

Count	Grain Weight, lead gun shot	Location
1	500	14L4
2	335	12L9
1	305	
3	290	11L7, 11R1
3	130	10L5
1	110	10L5
10	100	13L5
52	70	10L5, 12L7, 13L7
7	50	10L5, 11L7
19	35	

79	25	12R1, 13L7
110	15	
1	10	
Total 289		

The majority of the shot was between 15 and 25 grains with a second concentration at 70 grains. Obviously there was a preference for medium to small size shot. This may have been the result of the use of the technique of loading “buck and ball: where buckshot (small size shot) is loaded with a single large size shot.

In the collection today, 20 lead shot remain:

Catalog Number	Diameter	Location	Notes
C1-124	.585"	Square C5	Cast in single shot mold
C1-883	.615"		Cast in single shot mold
C1-1987-932	.678"		Cast in single shot mold
Unknown	.62"		Cast in single shot mold
C1-129	.70"	Square A5	Only half cast
C1-639	.705"	Square G7	Only half cast
C1-123	.37"	Square D3	Individual molded shot?
C1-125	.37"	Square C5	Individual molded shot?
Unknown	.365"		Individual molded shot?
C1-1995-996	.385"		Individual molded shot?
Unknown	.255"		String Mold
Unknown (2)	.245"		String Mold
Unknown	.22"		String Mold
Unknown	.215"		String Mold
C1-121	.27"	C4/ C5 Hearth	
C1-862	.29"	Square K5	
Unknown	.33"		

Also found were many shot strings, clipped and unclipped.

Unclipped	less than 10 grains	4 balls or stems on string	
	15 grains	12 balls or stems on string	
	25 grains	2 balls or stems on string	11L7-12L7 line
Clipped		10 balls or stems on string	broken at each end 8.5 cm long
		10 balls or stems on string	perhaps broken
		13 balls or stems on string	perhaps broken

In the collection today, eight pieces of clipped sprue are present, all from unrecorded contexts.

The lead shot that has been recovered at archaeological sites in Plymouth Colony can also help to determine the types of pieces that were used. Although there was not much standardization in gun bore sizes until the later part of the seventeenth century, even in the early part of the century the need for shot to at least roughly fit the bore of the piece was known. In fact, as early as 1540, it was stated by

the Italian metal worker Vannoccio Biringuccio to “Take care that (the shot) is of such a kind that it may fill the space exactly and move easily through the whole bore.” (Biringuccion 1990:418). If a ball was put in that was of the wrong size then it would either jam in the barrel if it was too large or, if it was too small, then it would let too much of the gasses escape around its edges, causing it to not fly true or to travel as far as it could. Even in the seventeenth century, people understood this principle and as a result it is believed that they tended to use balls that matched their barrel’s bore as closely as possible. The standard bore for a musket was set at 10 gauge but the shot was 12 gauge because this was thought to minimize the effects of fouling and permit the musketeer to load without worrying about continually cleaning it (Peterson 2000:14).

It is believed that by looking at the size of the shot that has been recovered that because the bore of a piece is directly reflective of the type of piece then the size of the shot should reflect the size of the bore and essentially the type of piece used. Some have said that people used whatever shot they could find to stuff in their bore and that it did not matter if it was close to the right size or not. If this was the case, then one should find a narrow range of shot sizes archaeologically, basically it is believed that if the size of the ball did not matter, then people would cast a small number of different size balls. What was in fact found to be the case was that a wide variety of ball sizes were recovered and that these fit well with the types of pieces used in the period.

By looking at the barrel bore sizes of a wide variety of seventeenth century firearms, the following bore size ranges were arrived at:

Pistol .40-.60 caliber
Arquebus .55-.75 caliber
Fowler .71-.80 caliber
Wall gun .85 caliber
Musket .70-.87 caliber
Carbine .62-.67 caliber

As can be seen, although there is some overlap, bore sizes for different types of firearms are fairly distinct. Looking at the **Figure 79** which shows sizes of the lead shot recovered, you can see that the four sites used for this survey, the Cushnoc trading house in Augusta, Maine, the Clarke site in Plymouth, Massachusetts, the Winslow site in Marshfield Massachusetts and the Burr’s Hill cemetery, revealed a couple of distinct patterns. The first is that there was a high occurrence of shot that measured in the range of what is called birdshot, gooseshot or swanshot. This small shot was either cast in multiple or gang molds or was produced through a process called the Rupert shot process where molten lead is poured through a colander from a specific height above a barrel or pail of water, as the lead falls, natural surface tension causes it to form a sphere or teardrop which solidifies when it hits the water. The presence of a high occurrence of small shot indicates either that this shot was easily lost because of its small size, or that a significant amount of fouling was occurring or that small shot was being loaded with a single large shot in a buck and ball fashion used by hunters today. All of sites except Cushnoc had an appreciable amount of small shot present with Burr’s Hill having the highest. This may indicate a variation in the use of firearms more for hunting by Natives versus Europeans or it may be indicative of the buck and ball style of hunting or battle.

The use of buck and ball style warfare in the seventeenth century is known from Virginia where, in 1607, a group of 60 to 70 Natives armed with clubs, targets, bows and arrows was repulsed by Captain John Smith and his party of 6 men with muskets loaded with pistol shot. It is not know for sure if this technique was used here in New England, but judging from the guerrilla style warfare that was waged during King Philip’s War, it must be thought of as a possibility.

Tables 12 and 13 and **Figure 79** show that the remainder of the lead shot fits broadly into four categories: pistol, Arquebus, carbine, musket and fowler. The larger sized pistol shot overlaps with the smaller sized arquebus shot while all of the possible carbine shot lies within the possible range for the arquebus, as does the musket and fowler shot. Because the arquebus was an antiquated weapon by the time of the settling of Plymouth, it is not believed that these weapons or the shot was used in them was ever a common occurrence in Plymouth Colony. If we do not consider that a significant amount of the lead shot is attributable to arquebuses, and subsequently we cut them out of the discussion, we are left with a rather clear three way distribution of the lead shot. This is pistol, carbine and musket/ fowler shot. Of the three, the pistol shot appears to have been the most common on all of the sites looked at except the Cushnoc site where carbine shot out numbered pistol shot. The next commonest shot was the carbine shot that occurred in all assemblages except Burr’s Hill. The musket/ fowler shot was the least common possibly due to a decline in people’s desire to use these pieces that required a rest to support when firing. It appears that there is the possibility that by the later part of the 17th century, people began to show more of a preference for smaller, lighter arms such as pistols and carbines over the older larger muskets and fowlers. It may also be that people were not as picky in their choice of the size of shot to use in their pieces and as a result there is no real rhyme or reason to it.

Table 12. Lead shot recovered from Plymouth Colony sites

Shot Size	Cushnoc	RM Site	Winslow	Burr’s Hill
.70-.75	5	1		
.65-.69	14	1	2	
.60-.64	39	3	1	
.55-.59	18	3	1	
.50-.54	24			5
.45-.49	1		1	
.40-.44	3	14	8	1
.35-.39		52	23	38
.30-.34		7	9	
.25-.29		98	16	
>.25		111	118	
Totals	104	290	179	44

Table 13. Lead shot from Plymouth Colony Sites

Piece Type	Cushnoc	Clark	Winslow	Burr’s Hill	Totals
Pistol	46 (44.2 %)	17 (77.3 %)	10 (76.9 %)	6 (100%)	79 (54.5%)
Carbine/ Arquebus	53 (51 %)	4 (18.2 %)	3 (23.1 %)	0	60 (41.4%)
Musket/ Fowler	5 (4.8 %)	1 (4.6 %)	0	0	6 (4.1%)
Totals	104 71.7%	22 15.1%	13 9%	6 4.1%	145

Fishing Weights?

Two possible fishing weights were found. One was a one 100 grain shot (.415” dia) from square 13L5 (no number) that was grooved possibly for fishing weight and the other was a 70 grain shot (.45” dia) from square 13L7 (C1-126) with a deep and wide cut on one side possibly for same purpose.

Shot Mold

An iron one shot caliper type bullet mold, capable of making 1 cm diam lead shot (C1-81) was found in square 10L7 (Figure 80).

Gun parts

A gun worm (C1-452) was recovered from square H4 in the plowzone (Figure 81). It is 5.5 cm long and would have been attached to a wooden rod (Figure 82). Gun worms were used to clean guns and remove jammed shot. A fragment of a hexagonal gun barrel was recovered from an unknown location. the barrel has an interior diameter of .5” making it 36 gauge. Other recovered pieces have been identified as gun parts, but at the present time only the worm and the barrel fragment can be positively associated with firearms.

Lead Waste

A total of 76 fragments of lead waste were recovered (Figure 83). This total consists of 62 fragments of melted drippings and 14 fragments of flat lead cut from sheets. Two of the melted fragments remained in the shape of the spoon and ladle that they had been melted in.

136	Melted Waste	10L10 Sheep pit
153	Sheet Waste	C7
336	Melted Waste	G4 Hearth
394	Sheet Waste	D6
409	Melted Waste	G4 Hearth
444	Melted Waste	H5
525	Melted in shape of baluster melting spoon	E6
613	Melted Waste	K7
647	Melted Waste	J7 pit 14.0
689	Sheet Waste	F7
750	Melted Waste	1L5-1L4/ 2L5-2L4
837	Sheet Waste	9L4
839	Sheet Waste	7L2
839	Melted Waste	7L2
876	Melted Waste in shape of ladle	G4 Hearth

The distribution of the lead waste showed a concentration around the main hearth and into the east yard towards and into the eastern structure (Figure 84). Feature 10L5 was referred to as the “lead pit”

during the 1940s excavations for its high concentration of lead waste. the lead was presumably being melted to produce shot, possibly during King Philip's War.

Sword Belt Attachment

Four iron sword belt attachment hooks were recovered. Three have no information regarding where they were found. The fourth (C1-81) was found in square C3 in the eastern yard (**Figure 85**). Three of the four pieces are fragments. The most complete hook measures 2.8 cm long and 1.4 cm wide. they are all lenticular shape with a hook at one end and a rivet, presumably for going through leather, at the other. One example has brass wire wrapped around the hook, possibly as a repair. Similar sword hooks have been found in Virginia at the Governor's Land site.

Bandolier Caps

Three lead caps for bandolier bottles were recovered. Bandolier bottles were commonly made from copper or wood to eliminate the concern of errant sparks. Each bottle, which hung on a belt worn across the chest, contained enough powder for one firing of a musket. By the late seventeenth century these bottles were falling out of favor as the use of powder horns increased. These caps, which were originally identified by Fernstrom as epaulettes from a military uniform, measure 2 cm at the top by 1.5 cm high (**Figure 86**). One is marked with concentric circles and 2 are plain. All three have been crushed. These were found in squares 12L7, 8L8, and 12L3 (**Figure 87**). They were all found in the eastern portion of the site in association with the eastern structure. These may have been in use when the house was attacked in 1676 or they may have been scrap that was in the process of being melted for shot.

Clothing

Buttons

Fernstrom reported that 16 buttons were found during the excavations:

Silver or Pewter

2	Flattened hemispheroid silver buttons Tudor Rose 1.2 cm dia, .4 cm high	10L7, 11L3
1	fluted pewter button, 1.2 cm dia .7 cm high, decayed	10L5 (pit)
1	Flattened hemispheroid pewter button engraved pinwheel 1.1 cm dia, .4 cm high	12L8
1	Plain parabolic pewter button, decayed 1 cm dia, .7 cm high	7L7 11L3
Brass 5	Plain brass hemispheroid buttons, loops soldered to body,	

	dia 1 cm ht .5-.6 cm	Surface (2), 9L5-10L5, 1112,
2	hemispheroid brass buttons engraved with design of four narrow petals radiating from center two step collar at base, loop soldered	
	1 cm dia .6 cm high	Surface, 7L7
1	Disc shaped button of sheet brass, design circle stamped in the center, 1.5 cm dia with cross-hatched border, loop soldered, 2.6 cm dia	9L9
Iron		
1	Flattened hemispherical button no design. loop soldered to body 11mm dia, 6 mm high	Surface
1	Flat button, no design 15 mm dia 5 mm high	Surface
1	flat button, leather with iron core flat top concave body 18 mm dia 5 mm high	9L8

Five of the buttons were of pewter or silver and included two with finely engraved Tudor Roses on them (C1-110, 433) (**Figure 88**). These were doublet buttons and similar examples have been found elsewhere in Plymouth at the 11 North Street Site and in Virginia at Martin's Hundred. At the RM Site, these buttons were found near the main hearth and near the eastern hearth. A third hemispheroid button with a Tudor Rose design, this one possibly of brass or iron, was found in unspecified location in the plowzone. The remaining buttons were of pewter and consisted of, what was described by Fernstrom as, a “fluted” pewter button with a diameter of 1.2 cm, a flattened hemispheroid button 1.1 cm in diameter, and a plain parabolic shaped button that was 1 cm in diameter. These appear to have all been seventeenth century doublet buttons. They were found in pit 10L5, and from the eastern yard (12L8 and 7L7). All of the pewter or silver buttons except for the two with the Tudor Roses, are missing from the collection.

Fernstrom recorded that eight brass buttons (five hemispherical plain, two hemispherical with engraved designs, and one disc shaped) were recovered from the excavations. Based on their sizes, all except for the disc button appear to be doublet buttons dating from the seventeenth century. The disc button (C1-27) dates to the nineteenth century and was found at the eastern edge of the site. Most of the doublet buttons were found in the east yard with two having come from unspecified plowzone contexts and two from near the main hearth. Four plain hemispherical buttons (C1-112, 373, 435, and no number) remain in the collection.

Fernstrom also recorded that three iron buttons were found: a flattened hemispherical plain button, a flat button, and a flat button with a leather covering. Only the button with the covering (C1-115), which appears to be rubber and not leather, remains in the collection. These buttons date to the nineteenth to twentieth century and were found in unspecified plowzone contexts (n=2) and from square B2 at the eastern end of the site. Only the covered button remains in the collection.

The distribution of the doublet buttons may indicate that trade or merchant goods were stored in a building in the eastern portion of the site and that buttons or clothes were among the items traded or sold by Clark (**Figure 89**).

Aglets

Six brass aglets- the ends of laces or strings used on clothing- were identified as thin brass beads by Fernstrom. The aglets consist of a triangular piece of brass rolled and crimped over transversely along the center line. The present collection consists of seven complete or fragmentary aglets. These artifacts were found in feature 10L5 (n=4 [C1-170 and 466]) and in the east yard (n=3 [C1-882, and 2 with no numbers]) (**Figure 90**). These artifacts may have been merchant items stored in the possible eastern building.

2.4 cm long tapering, scored 2x each end	15L4 (C1-882)
2.2 cm long, tapering plain	10L5 (C1-170)
2.5 cm long plain	10L5 (C1-170)
Fragment plain	7L7
Fragment Plain	10L5 (C1-466)
Fragment plain	10L5 (C1-466)

Buckles

Fernstrom reported that four iron buckles were found:

One	2.4 x 2.7 cm	From square 13L6
One	3.5 x 3.5 cm	From square 8L9
One	4 x 3.4 cm	From square 10L4
One	2.2 x 1.5 cm	From square 11L7

Two of the larger iron buckles (8L9 and 10L4) and the second smallest buckle (13L6) remain in the collection (**Figure 91**). At least two larger buckles have square frames and would have had an iron tongue. These were most probably used on harnesses and animal tack. The smaller buckle is square with a post running down through the center of the frame. This may have been a sword or armor buckle.

Three brass buckles were also present:

One	ovoid	4 cm long 2.7 cm wide	7L8
One	square ends, constricted waist	2.4 cm long, 1.8 cm wide at end 1.4 cm wide at waist	12L4
One	Half Buckle broken off by center bar sides straight and parallel, end an obtuse angle	2.4 cm wide, 1.8 cm from center to edge	7L7

Two buckles presently remain in the collection: 7L7 and 7L8. Buckle 7I7 (C1-159) has file marks on the exterior and is probably a belt buckle. Buckle 7L8 has file marks on the interior and appears to be a late 17th century shoe buckle similar to ones found at Pemmaquid in Maine.

The buckles were found in the east yard, east of the hearth and towards the eastern extreme of the excavation area (**Figure 92**).

Clothing Hooks and Eyes

Fernstrom's report indicates that 50 clothing hooks and eyes of two sizes were recovered from the site. He indicates that 23 hooks were found and 27 eyes. He then provides context information on 46 of them. Four large clothing hooks, measuring 1.2 x 1.7 cm, were found as well as 14 small ones, measuring 1.1 x 1.3 cm. In the collection today are 16 eyes with no catalog numbers and 27 hooks with no numbers. One brass clothing eye was also recovered from an unknown context. Clothing hooks and eyes were used to fasten a variety of clothes. The larger ones would be associated with larger items such as cloaks or coats, possibly military related supplies. The majority of these items were found in the area between the two hearths and associated with the eastern hearth (**Figure 93**).

Goffering Iron Heating Rod

An almost complete goffering iron heating rod (C1-842) was found in the cellar hole above the first charcoal lens (**Figures 94 and 95**). The iron consists of a round outer iron case over inner portion to which a squared ferrule attached. It is approximately 24 cm long. The iron was used to heat up the actual goffering iron (also called a tally iron) that was used to crimp or frill the large neck ruffs that were fashionable in England between 1580 and 1610, as well as for pressing pleats, ruffles, and ridges into fabric from the 16th to the 20th century. To create such a ruff, first, starch was used to add stiffness to the cloth then the goffering iron was heated by placing the preheated heating rod within the outer tube. The heated goffering iron was then used to shape the ruffs.

Iron Heel Taps

Fernstrom reported that three iron boot heel taps were recovered from the site (**Figure 96**). Heel taps were nailed on to the heel in order to help preserve the heel from wear and, like hobnails, were used to provide traction to the normally slippery leather sole of a boot or shoe. They were very common in the nineteenth century during the Civil War and during World War I but have not been reported from 17th century contexts. Fernstrom reported that three taps were found: one in the last 6" of fill in the cellar hole and two from square 11L3 near the main house hearth (**Figure 97**). All three taps remain in the collection. While not previously reported from 17th century contexts, their contexts at this site indicate that they were in use at least during the last quarter of the period. This use may be related to the military action between the Natives and Plymouth Colony.

Personal Items

Bone Comb

One quarter of a bone comb was found in square C6 (C1-194) (**Figures 98 and 99**). It is 6.2 cm long and has fine teeth on one side and coarser teeth on the other. Bone combs are common finds on 17th century homesites. They were commonly used to remove lice from hair and for general hair treatment and grooming. Neither Fernstrom nor Welch mention this comb, although Welch did photograph it.

Book Clasps

Fernstrom reported and Welch confirmed that five brass book clasps were found (**Figure 100**). Two matching clasps, found in 14L7 and 7L7 (C1-153 and 154), bore stamped fleur-de-lis saw tooth, and circular decorations. They measure 3.2 x 2.2 cm. Fernstrom had these analyzed by Dr. Metclaf of the Houghton Library at Harvard. he said that they were probably from Germany or the Low Countries. This author has seen similar examples from Jamestown in Virginia and from the Standish Site in Duxbury. The third book clasp was found in feature 10L5 (C1-155) and is decorated with a cross-hatched decoration and triangles. It is smaller than the first two, measuring 2.5 x 1.8 cm, and Metcalf said that it too was either German or Low Country in origin. The final two possible book clasps are squat obelisk-shaped clasps, plain on the front with bent hooks on the reverse. These were probably used with leather straps. These two were found in 8L7 and 8L8 (C1-156 and 157) and measured 2.3 x 1.4 cm. All of the book clasps were found in the eastern yard and associated with the eastern hearth (**Figure 101**).

Bed Curtain Rings

Five bed curtain rings were recorded by Fernstrom (**Figure 102**). These rings measure 2.7 cm in diameter on average and were strung on a string around a bed to hold a privacy/ warmth retaining curtain up. These rings were found in the eastern yard, near the eastern hearth, in the sheep pit, near the main hearth, and in the last 6" layer of the cellar hole (**Figure 103**). All five rings remain in the collection (C1-145, 164, 176, 586, and 787). They may have been used in the house and were trade or merchant goods.

Brass Box Hinge

These artifacts are discussed under the Book Hinge section above.

Bodkin or Tape Needle

One brass bodkin or tape needle is present in the collection. It is broken midway along the shaft and at the eye and the body is slightly curved. It bears no identification number but was found with the C-1 material and is assumed to have come from the site. None of the previous researchers mentioned it. Bodkins were used to draw strings through the sleeves or necks of garments.

Sewing Pins

Ten sewing pins were recovered from across the site (**Figures 104 and 105**):

2.1 cm long	15L4
2.5 cm long	15L4
.5 cm long fragment	15L4
2.4 cm long	11L7-12L7 (Eastern Hearth)
2.3 cm long	11L7-12L7 (Eastern Hearth)
2.1 cm long	11L7-12L7 (Eastern Hearth)
2.3 cm long	11L2-12L2 (pit)
2.1 cm long	11L2-12L2 (pit)
2.3 cm long	11L2-12L2 (pit)
2.1 cm long	11L2-12L2 (pit)

They were concentrated in three areas: 15L4, the eastern hearth, and in a pit associated with the main hearth. The pins may represent merchant or trade goods but it is just as possible that they were lost where they were being used around the hearths. Six pins remain in the collection today: four from 11L2 (C1-491) and two from 15L4 (C1-882). The pins from 11L2 came from a deep, post-17th century posthole while the ones from 15L4 came from a woodchuck run. Three of the pins are brass and three are silver. All have hand wrapped heads.

Thimbles

Two crushed thimbles were found during the 1940s excavations (**Figures 106 and 107**). One measured 2.3 cm high (13L8) while the other was 1.8 cm high (11L7). One thimble, the larger one, remains in the collection. Fernstrom interpreted the two different size thimbles as indicating that two people were doing sewing at the site. It is possible that the thimbles represent trade or merchant goods as well.

Bells

Ten fragments of a small bell mettle bell (C1-459, 460, 461 [2], 471, 574, and no number [4]) were found in the eastern portion of the site (**Figures 108 and 109**). This bell may have been used as a sheep bell or as a summoning bell. The basal diameter of the mouth is 8.2 cm wide and the height would have been approximately 8 cm. A similar bell was found in a Native grave at the Burr's hill burial ground in Warren, Rhode Island.

A small silver closed bell with a silver wire attached to the top ring was found in square 10L5 just outside of the northeast corner of the house (**Figure 108**). While bells were often traded to the Natives, the trade bells were brass or copper. A silver bell would not have been a common trade bell. This bell was more probably attached to a child's rattle or even a child's clothes as a minding bell. The fact that it is silver indicates the wealth associated with the Clark family.

Cabinet Lock Keys

Four iron keys were found at the site (**Figures 110 and 111**). The two complete ones measured 5.6 (C1-333) and 6 cm (C1-85) long while the other two keys were represented by eyes. One of the complete keys came from the main hearth and the two eyes were found in the cellar hole beneath the charcoal layer and from square 7L7 (the east yard). The relatively small size of the keys indicates that they were probably used on chests or cupboards. The presence of multiple keys indicates that the occupants had at least four containers that contained items that they wanted to keep locked away from others. This finding offers strong support for the identification of the site as the merchant William Clark's house. Only one key remains in the collection. This key does not have any identification number and may be one of the mostly complete keys identified by Fernstrom.

Lock Spring

The main spring from a lock was found in square B2 in the area of the eastern hearth (**Figures 112 and 113**). It is 5.5 cm long and 1.5 cm wide at the widest end. This spring would have been used on a door or trunk lock.

Padlock

One triangular iron padlock (C1-92) measuring 6.5 cm high and 4.5 cm wide was found in feature 10L5 (**Figure 114**). This artifact is no longer in the collection. Padlocks such as this were used on everything from chests to chastity belts and the triangular shape was common in the first half of the 17th century.

Clasp Knife

One fragment of a possible iron clasp knife was found in the modern posthole in square 10R1/ K3 (**Figures 115 and 116**). This artifact is 6 cm long and 1 cm wide and has a attachment point for a wooden or bone handle in the center of one face of it. This knife is of modern date and is not a seventeenth century artifact.

Trade Items

Brass Pendants

These items are discussed above under Brass Kettle Scrap.

Mouth Harp

A brass mouth harp with an iron tongue was found at square 12L2 at the main hearth (**Figures 117 and 118**). It measures 5.2 cm long by 2.5 cm wide at the mouth end. Mouth harps, also known as Jew's harps, are played by holding the rounded end against the lips or teeth and plucking the thinner metal trip in the middle. They are known worldwide and are called various names such as Gewgaw (England), Maultrommel (Germany), Vargan (Russia) and Guimbarde (France). The name Jew's harp

comes from the mis-pronunciation of Gewgaw as Jew harp. Alternately, people have remarked that the name Jew Harp maybe a mis-pronunciation of "juice harp" as the uses tends to drool when using it.

The mouth harp may have been an item intended for trade with the local Native people. They have been recovered at other sites associated with trade such as the Clark and Lake trading house in Maine and the Phipps Site in Maine, but they have also been found at sites that have not traditionally considered to have been trade oriented. Examples of the later include the Thomas Tobey House in Sandwich, Massachusetts and the Ephraim Sprague House in Waterbury, Connecticut. Three mouth harps were found at the Burr's Hill Wampanoag burial ground in Warren, Rhode Island.

Coins

Fernstrom identified nine coins as having been found at the site (**Figure 119**). These coins were identified by Mr. Jerome Eisenberb of Royal Coin Company, Boston. The coins identified were as follows:

One English 1504 Silver Penny Henry VII 3rd issue, 18th year. new "sovereign type" penny. Struck at York, England

Obv: HENRIC.DI.GRA.REX A.-ANG

Rev: LONDON-DIRHAM-EBORACI (Seaby 939, 2 pillars)

Location: 11L7-12L7 Hearth A

One English 1584-1587. Shilling Elizabeth, no date. Mint Mark: Seaby Type 79 escallop. Hammered coin

Obv: ELIZAB.D.G.ANG.FR.ET HIB.REGI

Rev: POSVI.DEV.ADIVTOREM MEV. (Seaby 1166)

Location: Cellar Hole stained earth below first charcoal lens

One English 1604 Silver Penny. James I, 2nd issue, 2nd year

Obv: Rose. 1.D.G.ROSA.SINE.SPINA

Rev: Thistle, TVEATVR.VNITA.DEVS (Seaby 1234)

Location: 10L9

Four Irish, 1642 Kilkenny money. Farthing. Charles I

Obv: Two septers through crown CARO...G.BRI.

Rev: Harp surmounted by a crown. FRA.ET.HIB.R. (EX).

Location: 11L4, 11L7-12L7 Hearth A, 13L8, 13R3

One English or French copper coin

Location: 10L4

One English copper coin, James I Thistle Penny. ROSA SINE SPINA (rose without thorns) issue, the legend surrounding an open Tudor rose

Obv: G.DG.COT...AVER

Rev: GALRG...D...

Location: Surface

Presently in the collection only one of the Charles I Irish farthings, a copper William III 1772 half penny, the early 17th century English or French coin, the 1604 James I silver penny, and the 1504 silver Henry VII penny remain in the collection.

The coins were recovered from around the main hearth (n=4), in and near the cellar hole (n=2), and around the eastern hearth (n=3) (**Figure 120**). This distribution may indicate that the coins were stored and used around the main hearth and in the east yard, possibly associated with a building associated with the eastern hearth.

Fish Hooks

Two iron fish hooks were found, one near the cellar hole and one near the eastern hearth (**Figures 121 and 122**). Both remain in the collection. The one from near the cellar hole measured 3.92” long with a 1.45” wide hook end. The one from near the eastern hearth measured 1.5 cm long with a .83” wide hook. The larger hook was probably used for cod while the smaller one could have been used for a variety of fish.

Knives

Fernstrom recorded that there were 23 iron knife fragments present in the collection. These fragments were concentrated around the hearth, to the north of the main house, to the east of the main house, and around the eastern hearth (**Figures 123 and 124**). Fourteen fragments of blades and handles could presently be identified in the collection (9 handles and 4 blades). Two styles of table knives are present in the collection. The first consists of 2 pieces of bone riveted to a metal tang (C1-82). The each slab of the handle bears three facets and a series of pegs holds it to the iron slab. It dates to the eighteenth century to nineteenth century. This knife was found in the eastern yard in square C4. Another probable slab handle knife, this being broken at the small bolster behind the blade, was found in Feature 10L5. It has an almost complete blade that dates it to the 17th to 18th century. The other type of knife has a pointed tang that would have been inserted into a bone handle at the end of a long forged bolster. The style is what Faulkner calls rat-tail which generally have oval and round balusters. These date from first to third quarter of the 17th century (Faulkner 1987: 242). Bolster shapes are mostly round with two octagonal forms being present. One handle (C1-841) has been conserved and bears a series of stamped decoration, three closely placed stacked dots surmounted by a series of rays, on its bolster. One additional handle does not appear to have a bolster (C1-94) and the blade transitions directly into a rat tail. This may in fact be another type of handled woodworking tool and not a knife. Also present in the collection is a fragment of wood that may be a knife handle (C1-664). It is squared in cross-section and was found in square O8. A snapped midsection fragment of a knife blade that is 2 cm wide (C1-589) was found in pit 13L7. Another knife blade fragment, this one also 2.2 cm wide, does not have any identification number on it. Fernstrom did identify what he thought were two sword blade fragments. the fragments which is missing the number may be from one of those (these were found in squares 7L2 and 12L8).

Scissors

Seven pairs of scissors were recovered (**Figures 125 and 126**). They ranged in size from 10 to 17.5 cm long and were found in squares 7L8, 9L8, 11L3, 10L4, 11L7, and from the cellar hole below 1st charcoal lens. Eight pairs are in the collection (C1-12, 71, 73, 83, 93, 617, 637, and an unnumbered pair). The scissors were concentrated from the main hearth to the eastern portion of the site. The scissors may have been simply items used around the house, but the relatively large quantity of them is more probably the result of their use as trade or merchant items.

Bale Seals

A total of 13 lead bale seals were recovered from the 1940s excavations (**Figures 127 and 128**).

133	Plowzone	No Markings
139	Plowzone	Stamped R/T with key between
140		Textile traded from London early 17 th century
141	Square C1	Norwich seal early 17 th century
142	Square A3	Stamped R/T with key between
309	Square F5	Stamped with R in center, unbroken
347	Square C6	Norwich Worsted Wool 1633 date "RBTT"
347	Square C6	Norwich Worsted Wool 1633 date "RBTT"
843	Cellar Hole last 6"	Coarse Cloth
885	H7	No writing
no number (3)	Unknown	one with writing that can't be read

One of the seals came from the hearth, one from the cellar hole, and the remainder came from the east yard, especially from the area around the eastern hearth. The seals indicate that cloth was being imported in the first half of the seventeenth century and either traded to the Natives or sold. The cloth originated from Norwich and London and at least one coarse cloth and one worsted wool was present.

Glass Beads

Fernstrom reported that 20 beads were recovered from the 1940s excavations (**Figure 129**):

Count	Color	Dia*	Length**	Wt***	Misc	Location
3	very dark blue/ trans	352	275	9		10L6
		372	323	11		10L3
		415	220	9	corrod/ broken	9L8
2	Yellow, blue, white stripes longit., reddish ends, opaque	339	323	11		9L9
		369	369	16		Unknown
1	Medium blue with three longit. white stripes	348	326	11		11L9

6	Blue, greenish white opaque	258	281	4		9L9
		half	289	1		9L9
		half	282	1		10I9-10I0
		half	273	1		10I2-10I3
		half	288	1		11R1
		half	304	1		Unknown
1	Light blue, trans.	286	225	3		Unknown
1	White, opaque	267	262	1		Unknown
2	White, opaque	237	222	1		14L5
		174	192	1		10
1	Light blue, opaque	188	187	1	corroded	10L2-10L3
2	Medium Blue, Trans	185	131	1		11L3
		165	132	1		11R3
1	Pipe clay color	233	364	3	tubular ringed clay	Unknown

Total 20

* diameter in 1/1000 of an inch

** length along axis of hole in 1/1000 of inch

*** weight per bead in grams

The majority of the beads were found in the eastern portion of the site associated with the eastern hearth and the sheep pit (**Figure 130**). The bead collection was analyzed by James Bradley in the 1983. He identified was able to locate all of the glass beads and found eight different round bead varieties which identified using the Kidd typology:

Type	Size	Class	Desc	Count
Ia13	M	op	white	3
Ia35/ 36 (?)	M	op	light blue	1
Ia39/ 43 (?)	M	tsl	medium blue	1
	S	tsl	medium blue	1
Ia40 (?)	M	op	blue greenish white	6
Ia55	L	tsp	very dark blue	3
Ia	L	tsl	light blue	1
Ib56	L	op	medium blue with 3 white stripes	1
IVn4	L	tsl/ op	heat rounded (tumbled) chevron bead with yellow and blue stripes on light gray exterior	1
	VL	tsl/ op	same as above	1

The most common type (n=6) were Ia40 which are a medium-sized Robin's-egg blue bead and one of the most temporally and spatially widespread bead types. The second most common (n=3) type were Ia55 a large dark blue bead that is common on seventeenth to nineteenth century sites. These have also been found in Wampanoag burials at Burr's hill in Warren, Rhode Island, at the seventeenth century Tura Site in Kingston, Ma and from downtown Plymouth at the site of the original settlement. Type Ia13 beads also occurred in the same frequency as the previous beads (n=3). these are a round white bead that is also very common on seventeenth century sites. The next most common bead type (n=2) are IVn4 tumbled star/ chevron beads in large and very large sizes. The remaining beads were

represented by only one example each. Iia35/ 36 beads are light blue and globular in shape. Iia39/ 43 beads are a medium blue medium-sized translucent bead that has been found on 18th century Canadian Native sites (<http://beadresearch.org/pages/bibliography.pdf>).

Iia beads are round ended, large, and light blue. Iib56 beads are Robin's egg blue and decorated with white stripes. None of the beads found at the RM site were among the most common bead types identified at the Wampanoag burial ground at Burr's Hill. This burial ground may date to later in the seventeenth century than the RM site or it may be that the Natives at Burr's Hill were supplied with beads from the Dutch versus the English.

Lead Weights/ Tokens

These items were either used to weigh out specific amounts, to weigh precious metals, or to keep track when counting. Fernstrom reported 8 lead tokens/ weights in the collection (**Figure 131**):

weight	Dia	Thickness	Description	Loc	Catalog
500	3 cm	.5 cm	raised rim at edge, 1 side stamped with 4 circlets, reverse stamped with 3 lines in herringbone pattern	?	Unknown
392	2.6-2.8 cm	.4-.5 cm	No Marks	13L4	C1-642
384	3.2 cm	.4 cm	pierced thru center	13L7	C1-837
230	3.5-4 cm	.1 cm	no marks	8L7	
120	3.2 cm	.1 cm	pierced thru center	9L4	C1-134
74	2.5 cm	.1 cm	pierced, clipped, bit extra lead added to 1 side	?	

Twenty-eight possible lead counters or weight are present in the collection today:

Catalog Number	Measurement	Location	Notes
130	1.2 cm dia x .15cm thick	Square C4	
Unknown	1.2 cm dia x .15 cm thick		
132	1.3 cm dia x .18 cm thick	Square C6	
535	1.4 cm dia x .1 cm thick	Square G5	
Unknown	1.4 cm dia x .1 cm thick		
494	1.5 cm dia x .13 cm thick	10L2	
494	1.5 cm dia x .14 cm thick	10L2	
Unknown	1.5 cm dia x .11 cm thick		
535	1.7 cm dia x 1.1 cm thick	Square G5	
149	2.1 cm dia x .08 cm thick	Square B5	
863	2.5 cm dia x .2 cm thick	Square I8	
137	1.5 cm dia x .15 cm thick	Square C1	
131	1 cm dia x .25 cm thick	Square C5	
Unknown	1.1 cm dia x .28 cm thick		
Unknown	1.2 cm dia x .28 cm thick		
Unknown	1.3 cm dia x .18 cm thick		
Unknown	1.3 cm dia x .58 cm thick		

Unknown	1.3 cm dia x .47 cm thick		
131	1.4 cm dia x .37 cm thick	Square C5	
394	1.4 cm dia x .38 cm thick	Square D6	
Unknown	1.4 cm dia x .38 cm thick		
Unknown	1.4 cm dia x .25 cm thick		
Unknown	1.5 cm dia x .18 cm thick		
Unknown	1.5 cm dia x .31 cm thick		
Unknown	1.7 cm dia x .31 cm thick		
Unknown	1.8 cm dia x 1.4 cm thick		8 half moons on it
826	1.9 cm dia x .31 cm thick	11R2	
642	2.7 cm dia x .2 cm thick	Square F6	
134	3.2 cm dia x .15 cm thick	Square C1	Round hole in center
837	3.2 cm dia x .4 cm thick	Square F2	Square hole in center

Two of the weight/ tokens that Fernstrom reported (the 3.5-4 cm diameter one from 8L7 and the 2.5 cm diameter one that was pierced, clipped, and added to from an unknown location) do not appear to be present in the collection today. The weight/ tokens were concentrated slightly around the main hearth but especially to the east of the main house towards the eastern hearth and the second structure (**Figure 132**).

Sandstone Bullet/ Button Mold

This possible bullet or button mold was found among the native artifacts collected by Hornblower prior to his 1940 excavation. It could have been used for casting ½ of a bullet or a hemispherical button.

Tools

Possible Agricultural Tool

A fragment of what may be an agricultural tool was recovered from an unknown location. The piece (C1-586) is 8 cm long and is curved. It has one hole in it, possibly for attachment to a wooden handle.

Augers

Three possible augers were recovered (**Figures 133 and 134**). The first (C1-843) was found in the cellar hole in the last 6” of fill. It is iron, 19.5 cm long with a spoon shaped bit at the end of a straight shank. The second (no catalog number or location information) is the same length and shape but is bent in the middle. The final one (C1-648) was found in square L3 on top of some rocks. It is 11.5 cm long with a 3 cm long flattened bit on one end.

Axes

Five fragments of axes are present in the collection although Fernstrom recorded only one (**Figures 135 and 136**). The one that Fernstrom identified was found in square 12R5 and was identified as a blade 13.5 cm long, 9.2 cm wide, 5 cm wide at the break, 1.4 cm thick at the break, and 1.2 cm thick at

the edge. Fernstrom said that it was associated with a pit to the west of the cellar hole and probably dated later than the house site. The only fragment in the collection that came from this location was C1-724, which is a piece of the pole of an ax that had been bent outward away from the blade. It appears that the break may have been intentional, possibly as a way of reducing or recycling an old ax by a blacksmith. A second ax fragment was found in square 13L8. this piece is a fragment of the pole of a small trade hatchet with an upward angled cheek and a pole that measures approximately 4 cm in exterior diameter. This type of ax is typical of the seventeenth century. A third pole and cheek fragment (C1-599), this one looking like it had been cut , was found in square A3/ -A3 on the floor. The pole is not round but is lenticular in shape, possibly indicating a more modern age for this piece. An ax blade (C1-76) was found in square B5. the blade is 14 cm long and 9 cm high at the bit edge. the bit has been worn very unevenly at its lower half. This appears to be a felling ax. Finally, the blade of a large broad ax was found in square J5. The blade is 19.5 cm high. This was a hewing ax used to shape timbers for houses.

Dividers

One pair of iron dividers were found in feature 10L5, called the “lead pit” by the excavators (**Figures 137 and 138**). These dividers are 8.5 cm long and are in the closed position. Dividers such as these were used to measure distances on maps and to scribe circles on wood during house and furniture construction.

File

A4.3 cm long by 1.6 cm wide iron file fragment (C1-68) was found. This file was half round in shape.

Handle

One large iron trunk handle (C1-302) was found in square F4 near the main hearth. This handle appears hand wrought and would have come from a larger sized chest or trunk. It measures 22 cm long and 8 cm high. It is 1.5 cm wide. A second handle is pictured in the 1964 Welch report but it is not known where it came from (**Figures 139 and 140**).

Draw Knife Handle

The shank of a possible iron draw knife handle was recovered from the site (**Figure 141**). No information is recorded regarding where it was found. The shank is 10 cm long and extends to a curved portion that may be where the blade would begin.

Hoe

The socket and a portion of the blade of a broad hoe were recovered from the southwest quadrant of the cellar hole in the last 6” layer (**Figure 142**). It measures 5.5 x 7.7 cm and has a hole drilled in the rear face. A nail was probably driven through the hole into the handle to keep the head from spinning.

Gimlet and Awl

An iron gimlet (C1-83) measuring 8.5 cm long was found in square C4 (**Figures 143 and 144**). Gimlets were used to make holes in wood for nails or drill bits to bite into. An iron awl (C1-93) was recovered from square F3 (**Figures 143 and 144**).. it is 8 cm long and pointed at both ends. This may have been a trade item or was used to make holes in leather or canvas.

Scythe

The butt end and a portion of the blade of a hand forged scythe were recovered from square 12L3 (**Figures 145 and 146**). It is 20 cm long and 5.8 cm tall. It bears a stamped wheat stalk on the blade.

Wedge

An iron wedge 4.5 cm long and 1.7 cm wide, is present. It may have come from a trunnel that was used to join two large timbers together. These were trunnels were used especially when additions were put on to houses. The wedge from the site does not bear any identification number. Fernstrom identified one wedge in the collection. He identified it as having come from square 12L4 at the east end of the site. A second iron wedge was found as well. This one does not have any catalog or identification numbers associated with it. It is 8 cm long and 1.7 cm wide with an L-shaped head. It is believed that this is a tool or trunnel wedge.

Husbandry

Harness Buckle

This artifact is discussed above under the buckle section.

Horseshoes

Fragments of two mid 17th century and one 19th to 20th century horseshoes are present in the collection (**Figure 147**). One 17th century fragment was found in square C5 in the eastern half of the site while the second one was found at the main hearth (**Figure 148**). One appears to be from a larger horse while the other appears to be from a smaller horse.

Oxen Shoes

Two oxen shoes were found in squares 10L8 and 12L7 at the eastern end of the site (**Figures 149 and 150**). They indicate the use of oxen as draft animals.

Curry Comb

One fragment of a brass curry comb that may be modern was found in square 8L8 (**Figure 151**). A curry comb was also recovered from the middle to late 17th century Winslow site in Marshfield.

Faunal Remains

Vertebrate Faunal Remains

Most of the vertebrate faunal remains from the site have either been misplaced, lost, or stolen. What is known is that there was an appreciable amount of bone recovered. Welch reported that 70 of the bones were from birds, that there was one dog femur present, as well as the molar of a cat. The complete remains of two lambs were found in feature 10L10, the square pit located at the eastern edge of the site. A total of 30 pieces remain in the collection. These were found by Hornblower, in the 10L10 sheep pit, and during the 1968, the 1987, and the 1995 excavations. Two pieces were found in the collection that appear to have been found by Hornblower from squares F1 and F2 are identifiable as a deer antler that has been sawn to remove a tine and a cattle molar. Aside from the two lamb skeletons, three other pieces of bone are present in the collection from feature 10L10. These are a woodchuck incisor, a fragment of bird longbone, and a fragment of mammal longbone.

The faunal remains were roughly cataloged during Deetz's tenure at the Plantation. By looking at the distribution of fragments found in the paper catalog he made (**Figure 152**) it can be seen that vertebrate faunal remains were concentrated in the cellar hole and to the east of the hearth. The material in the cellar hole probably represent part of the fill used to fill the hole after the house was destroyed and the site was cleaned up.. The deposit to the east of the hearth probably represents material disposed of in the yard during the occupation of the house.

The remaining pieces were recovered from the later excavations and surface collections. These include:

- calcined medium mammal longbone fragments (n=2), mammal cortical bone, and the canine chewed proximal end of a swine ulna found during Deetz's 1968 excavations
- snapping turtle foot bones from a prehistoric feature identified in 1987
- snapping turtle carapace fragment found as surface collection during parking lot construction in 1987
- sheep tibia, cattle cranium and carpals (n=3), a carnivore chewed swine radius, a large bird longbone fragment, calcined medium mammal longbone fragments (n=3), medium mammal longbone midsection fragments (n=2), and two fragments of mammal bone found during the 1987 surface collection
- calcined medium mammal longbone fragments (n=2), a sheep metacarpal fragment, and two calcined bird longbone midsection fragments found during the 1995 excavations

The vertebrate faunal collection indicates that the occupants of the site, be they prehistoric, colonial, or post colonial, used snapping turtles, which were easily obtained from the adjacent river, deer antler, which may have been used by either the Native or colonial occupants, the usual range of domestic species (cattle, sheep, pig, cat and dog), and that they threw some of their bones in fires either accidentally or purposefully. Unfortunately most of the remains either lack context or were found in plowzone contexts so it is difficult to determine which occupation they belong to. The only remains that definitely be ascribed to specific occupations are the snapping turtle foot from the prehistoric pit, and the lamb bones from the colonial or post colonial square pit.

Shellfish

Fernstrom had William Clench of the Harvard Museum of Comparative Zoology analyze the shellfish remains from the site. Clench noted that 360 broken shell fragments were present and identified the following species: surf clam (193 frags), quahog (122), oyster (20), horse mussel (13) cockle (6), periwinkle (3) blue mussel (3).

When the collection was recently reanalyzed a total of 290 fragments were present, of which the following species were identified:

Species	Recent Analysis	Clench Analysis
Surf clam	74	193
quahog	164	122
oyster	25	20
Horse Mussel	0	13
Cockle	5	6
periwinkle	4	3
Mussel	14	3
other	4	0
Totals	290	360

The shellfish fragments were concentrated around the main hearth and to the north of the north of the north side of the house (**Figure 153**). Shellfish were consumed by both the Native inhabitants and the colonists. One Native feature was found during the 1987 survey that contained shellfish remains.

Other

Iron Other

One fragment of a possible modern iron tool wedge (C1-822) was recovered from the plowzone in square 9L3/ G2. The piece is 3.7 cm long, 1.5 cm wide and has a curved cross-section.

A fragment of wrought iron scroll work (C1-822) was recovered from the plowzone in square 9L3/ G2. The scroll is 3.2 cm in diameter and looks like something that would be found on decorative oil lamp brackets.

One cast iron decorative finial fragment was recovered from an unknown location. It is 4.7 cm long and .8 cm wide with a rounded shank and curved terminal. It is believed to date to the nineteenth century.

Brass Other

One artifact made from woven brass wire with incised circles that are reminiscent of Dutch book clasps was found in an unrecorded location. The artifact is 1.7 cm wide and the fragment that remains is 1.3 cm long. It is believed to date to the nineteenth century.

ARCHITECTURAL INTERPRETATION

William Clark's house is interpreted as having been built using posts placed in the ground not with a traditional stone foundation on which wooden sills would have rested. The post holes were evidence that the original house on the site had been built using a technique that is rarely found in New England. The posts that formed the framework of the house were originally seated within these post holes. Using in the ground posts is a construction technique called “post-in-ground” or earthfast construction, construction where the framing members of a building are “standing or lying directly on the ground or erected in post holes” (Carson et al 1981: 136) (**Figure 154**). Essentially what was done was that holes were dug where the posts were to be seated. After the holes were dug, the framework for the walls of the structure was constructed on the ground adjacent to post holes. When the walls sections were completed, they were raised up and slid into the post holes. The wall sections were secured into the adjacent wall section and the whole framework tied together to create a box like framework for the structure. The roof timbers were then raised onto the top of the walls and the roof and interior floors framed. This was an ancient technique, dating back to the prehistoric times in Europe and is believed to be the technique used for the construction of the first houses at Plymouth in 1620-1621.

Cary Carson, Norman Barka, William Kelso, Gary Wheeler Stone and Dell Upton described earthfast architecture in the southern colonies as being an impermanent form of architecture that was inferior to framed construction and which, in the early seventeenth century, was seldom used in England and was only used in extreme cases in the New World (Carson et al 1981). They posited that the early settlers used earthfast architecture as a quick and expedient way to raise a structure in the first years of colonization, but that settlers who remained in a colony would have preferred, and in many cases replaced the earlier earthfast structures, with more permanent and structurally sound framed houses when means and position afforded it. Earthfast architecture was used from the start in places like Jamestown, Virginia (1607) and St. George's fort, Maine (1607), and it continued to be used throughout the 17th and 18th century for impermanent architecture. Builders who used decay resistant materials like oak could expect a post-in-ground house to last anywhere from 30 to over 50 years (Carson et al 1981: 156-158).

There are three different types of earthfast architecture: sill on ground, free set post, and bent set posts. The simplest way to build a structure is by merely setting the sills of the building directly on the ground with nothing being between it and the earth. While this is a quick way to build a building, the sills will quickly rot. Building a structure with free set posts means that individual posts are placed in the ground free of any other framing members. Following their planting, the upper end of the posts are trimmed to similar heights and are then framed together with horizontal timbers connecting the vertical posts. A structure can be built with as few as four posts in this manner, one at each corner, or it may be constructed using several posts closely spaced on each side. The posts are then joined together by exterior clapboards with very limited additional framing being present. When a building is constructed with closely spaced posts (averaging five feet or less between them [this being the average length of clapboards]) it is said to be of pallisadoe or puncheon construction. Quick to build and described by archaeologists as “ephemeral structures raised around a gaggle of earthfast uprights” (Carson et al 1981: 125).

Bent set framing involves connecting two hewn vertical members (posts) to a hewn horizontal member (the plate or tie beam) on the ground and then raising the whole assembly (referred to as a bent) up as

one unit, sort of like an Amish barn raising. The post holes for a free set post structure are generally round to slightly oval and are just slightly larger than the post that was seated into it (**Figure 155**). The bottom depths of the holes will have much more variability because the bottom depth does not matter as the tops will be cut to length after they are set up. The holes for a bent set structure are much roughly oval and larger, averaging four feet or more in length and they will all be of very similar depths (**Figure 155**). This is due to fact that when raising a bent it must be slid into the hole and then raised up. The bent must be level when in place so that the framing for the house will not be skewed. Bent set construction requires much more forethought and planning than free set post construction, which in turn requires more planning than puncheon construction.

The colonists at Plymouth erected an earthfast structure for trading at Aptuxet on Cape Cod in 1626, and quickly abandoned the site and focused their trade on Maine. In 1635, William Bradford described a hurricane that struck the colony: "This year, the 14 or 15 of August (being Saturday) was such a mighty storme of wind and raine, as none living in these parts, either English or Indeans, ever saw. ... It caused the sea to swell (to the southward of this place) above-20-foote, right up and downe, and made many of the Indeans to clime into trees for their saftie; it tooke of the horded roofe of a house which belonged to this plantation at Manamet, and floted it to another place, the posts still standing in the ground" (Bradford 1912: 213-214). So even though this storm blew down many hundreds of thousands of trees, the posts that were put in the ground nine years prior, still remained, although the rest of the structure was gone.

Work in the 1990s by Emerson Baker, Robert Bradley, Leon Cranmer and Neil DePaoli in Maine, has led to the realization that the use of earthfast construction was not limited to the seventeenth century, but continued into the second quarter of the eighteenth in Maine, which correlates with Carson et al's findings in the Chesapeake (Baker et al 1992). Baker et al see earthfast architecture in much the same way as Carson et al- a quick solution to the initial need for protection from the elements and one which would be replaced with better accommodations when time and finances allowed. They also added that the society in Maine was unsettled until the eighteenth century which correlates with presumed end of the earthfast tradition there.

As evidence of the occurrence and prevalence of earthfast architecture, several sites are used as examples. The Cushnoc Site in Augsuta was a trading house built by Plymouth Colony settlers in 1628. The building is of a longhouse style and was constructed with bent set posts (**Figure 156**). The overall dimensions are 20' wide by 44' long with each bay being approximately 15' long by 20' wide. Intermediate posts set between in the middle of the long side of the center bay were interpreted as being associated with a cross-passage corridor. A post set ~3-4' east of the west end of the building was hypothesized as representing a support for a daubed fire hood associated with the hearth. No traces of burned soil remained associated with the hearth location.

The second Plymouth Colony earthfast house was the C-21/ Allerton site in Kingston, excavated in 1972, and dating to the 1630s to 1690s (**Figure 157**). Background research determined that the site was originally settled by Isaac Allerton in the late 1620s to early 1630s and subsequently was the home of his daughter Mary and his son-in-law Thomas Cushman. Excavations by James Deetz identified at least 28 features, some of which appear to have been given a feature number but were subsequently determined to be unworthy of further comment. Two sections of palisade trench, three house corner

post holes, two possible shed or lean to post molds, another small post mold, a cobble hearth, and an E-shaped series of sill/ joist stain, were all associated with the first occupation which is believed to have begun as early as the late 1620s and was associated with the Allerton, Prence, and the early Cushman occupation. The cellarhole and a fenceline slot-trench were associated with the second, post 1675, occupation by the Cushmans. Several pit anomalies in the north yard and one anomaly in the west yard are believed to be prehistoric in origin.

Excavation of the cellar hole resulted in the recovery of a ca. 1690 wine bottle at the bottom of it, indicating that it was filled after this time. Cellar hole excavation also resulted in the identification of a stone hearth floor that had been barely cut by the southeast corner of the cellar hole (Deetz and Deetz 2000:228). The hearth was composed of heavily burned cobbles and was situated at a different angle than the cellar, indicating that it belonged to an earlier house. It was aligned with the deep possible palisade trench, making it probable that it was associated with that feature. The possibility that two houses were present at the same location was later confirmed when four large post molds measuring up to 10" in diameter were identified aligned with the hearth and the possible palisade trench. These post holes outlined a house measuring 22 by 20 feet with a chimney located at the eastern gable end. Three smaller posts were located to the south of the house and are interpreted as a shed attached onto this side of the house. The main structure appears to have been a square with free set posts at the four corners. The excavations were somewhat limited and the house may have in fact been larger, extending further to the east into an area not excavated.

A third 17th century site was excavated in the 1970s but very little is know about the excavations that were carried out by archaeologists from Plimoth Plantation. This site, the C-14/ Edward Winslow (1630s-1670s) house, was never written up and aside from feature drawings and artifacts, little information exists on the dig. Reconstructive work by the author revealed that the various features appear to show another house of longhouse form measuring 18 feet east to west by at least 32 feet north to south (**Figure 158**). It appears to have been constructed using free set posts set approximately 6-8' apart. A chimney bay may have been located at the south end of the house where a series of posts were closely spaced and outlined an area 6' wide along this end of the house. The paucity of notes on this site limit what can be reliably said about the house.

The use of earthfast architectural techniques has been hypothesized as providing a quick and relatively cheap way to build structures that may not have been meant to be permanent abodes. The need to quickly erect a structure that could be lived in until the time when a better constructed and more permanent building (one that rested on a foundation raised off of the ground and thus not prone to decay as quickly) may have contributed to the use of this technique during the initial occupation of all kinds of 17th and 18th century sites. It is assumed that the owners of the earthfast structures would have wanted to eventually have a fully framed, fine, and fair house as their permanent home, but due to financial limitations, the death of the head of the household, or just the fact that life gets in the way of living (the best laid schemes of mice and men often go awry), the buildings were not replaced until they may have been beyond repair. Repairs were made during the original earthfast building's life, posts were added and replaced, stones replaced rotted post sections, and additions were made to accommodate for growing families and changing needs, but eventually the buildings were either purposefully razed and replaced, burned down, or were demolished.

William Clarke's house was of a longhouse form measuring 54 feet east to west by 18 feet north to south. It had been constructed using the earthfast technique where post were set into holes dug into the ground. The post were joined to each other by means of girts at the ground level and plates above and may have had wattle and daub walls between them. Evidence for the earthfast construction was most visible in the western half of the structure where a total of five post holes of varying depths were uncovered. No postholes were identified in the eastern half of the structure but here a series of four clusters of rocks, identified in the field as foundation piers for sills, were identified. It is not recorded that these foundation piers were excavated and it is possible that they represent the location of rotted posts that were supported by stones. This has been found to be the case at several other Plymouth Colony earthfast houses. It is possible that when a post rotted in a structure such as this, the lower portion of the rotted post was sawn through and the post was removed from the post hole with the hole subsequently being filled with stones.

Posthole and foundation pier spacing appeared equal at the site with both elements being spaced regularly at nine feet center to center on the north and south sides and six feet on the east and possibly west sides. The six foot spacing on the eastern side may be related to the presence of a smoke hood at this end of the house whereas on the western side there may have been only one post spaced 9 feet from the corners. This spacing creates a house with either three bays that were 18 x 18', two bays of 27 x 18', or an eastern bay measuring 27 x 18', a 9 x 18' cross passage and an 18 x 18' western room. It is believed that a cross passage existed between the rooms in the center of the house. A wood lined cellar measuring 8' square was identified under the floor in the western room. The hearth was located in the eastern room close to the eastern gable end. At least two additional post holes were identified on the southern side spaced 9 feet apart and 8 to 9 feet from the main house. These posts may represent a porch or shed attached to this side of the building. The posts at the Clarke house appear to have been free set.

The longhouse form is one that has a long history in England. It originally was peasant housing in the later Middle Ages in the uplands, but also being known in the lowlands (Harvey 1984: 21). The original form of the longhouse was a two room building with a cross-passage running between them. On one side was a cattle house while on the other was the dwelling house. By early in the Tudor period (1485-1603) lowland farmers had abandoned the animal bier/ dwelling house form of the longhouse as the separation of domestic and industrial buildings of the farm became the norm (Harvey 1984:43). The longhouse form did continue into the 17th century with portion of the house that once housed cattle now being known as the "backhouse" in East Anglia (Harvey 1984:43). The backhouse became a combination milkroom, buttery and kitchen or in Yorkshire, it had become a general purpose storage room (Harvey 1984:45). When Edward Winslow sold his original house in Plymouth in 1640 to Thomas Wallis, included in the sale was the "house and garden backhouse and fould yard" (Records of the Colony of New Plymouth Vol. 1: 97).

The longhouse also seems to have been a common house form associated with trade and storehouses in Virginia and New England. Longhouses were common at Jamestown and the first common house built in Plymouth in 1620 was probably also of this form. Using a longhouse for a trading and storehouse is a logical step as it allows people to live in relative comfort in the one half that contained the hearth, and goods to be secured in close proximity to the inhabitants in the unheated backhouse portion. Add a cellar beneath the backhouse and you have a building where you can store goods that are immune to

freezing temperatures (kettles, cloth, knives, etc.) upstairs, and keep liquids below ground where they are less likely to freeze even in winter.

CONCLUSION

Numerous features were identified during the 1940s excavations at the RM site. A small portion appear to be natural stains and the majority are interpreted as having been created by the Native inhabitants before the Clarks acquired the property in the 1630s. The largest concentrations of what appear to be Native features are in the area around the colonial house. By contrast, the area of highest Native artifact concentration was in the area of the colonial house. By sifting through all of the features, their characteristics and locations, a small number were determined to most probably date from the 17th century and be related to the occupation of the house by Thomas and then William Clark. The house was interpreted by Deetz as being slightly more than 60 feet long and 12-18 feet wide with two hearths. Reanalysis of the artifacts, the creation of artifact distribution maps and the analysis of the original excavation notes have shown that the second hearth identified by Deetz at the eastern end was most probably a Native feature predating the occupation by the Clarks. The artifact distribution shows a large refuse spread to the east of the main hearth outside of where the east end of the house would have been (**Figure 159**). No structural evidence is found to the east of the main hearth and the artifact spread shows that refuse continued into the area where an eastern portion of a very longhouse would be. The house is believed to be 18' wide (north to south) and 54' long (east to west) the front door is believed to have been located on the south side and the area to the east appears to have been a significant work and refuse deposition area, especially for lead shot casting and flint working. The house is believed to have been built in the 1630s by Thomas Clark and by the time it was destroyed in 1676, it appears that most of the earthfast post had rotted to the point that they needed to be shored up with stones at ground level. Significant evidence of burning was found in the cellar hole and in some of the postholes and while the entire house may have not burned down during the attack, it appears that Clark decided not to re-inhabit the site. A possible outbuilding, represented by two postholes spaced 13 feet apart with significant evidence of charcoal and burning, were located 23 feet to the north of the northeast corner of the house. These postholes were at a different alignment to the main house so they may not be related to it.

No evidence of an palisade of defenses were found around the house, but excavations may not have been carried out far enough away from the structure to encounter them. The historical records do note that the house was lightly fortified, so fortification may have consisted of wooden shutters and a reinforced door versus palisading. One of the most interesting finding was the extensive evidence of flint working at the site. It is hypothesized that this knapping may have been carried out by a Native person working for William Clark in the 1670s, just before the house was attacked. This knapping of gunflints represents some of the only 17th century Post-Contact knapping evidence we have for Plymouth Colony.

Comparison of maps and site notes as well as limited testing in 1995 has shown that the actual location of the house still exists at the eastern edge of the present bus parking lot. This portion of the site has been impacted multiple times by excavation and reexcavation and not much is believed to still remain here. The remainder of the site to the east retains a high potential to provide more evidence for the use of the yard space around a 17th century farmhouse and for the identification of outbuildings.

REFERENCES CITED

- Baker, Emerson W.
1985 *The Clarke and Lake Company: The Historical Archaeology of a Seventeenth Century Maine Settlement*. Occasional Publications in Maine Archaeology Number Four, Maine Historical Preservation Commission, Augusta, Maine.
- Baker, Emerson W., Robert L. Bradley, Leon Cranmer and Neill DePaoli
1992 Earthfast Architecture in Early Maine. Paper presented at the Vernacular Architecture Forum annual meeting, Portsmouth New Hampshire
- Biringuccio, Vannoccio
1990 *Pirotechnia*. MIT Press.
- Bradford, William
1912 *The Works of William Bradford by William Bradford*. Reprint Services Corp.
- Bradley, James W.
1983 Blue crystals and other trinkets: Glass beads from 16th and early 17th century New England. *Proceedings of the 1982 Glass Trade Bead Conference*. Research Records No. 16. Rochester Museum and Science Center, Rochester, New York.
- Carson, Cary, Norman F. Barka, William M. Kelso, Garry Wheeler Stone, and Dell Upton
1981 Impermanent Architecture in the Southern America Colonies. *Winterthur Portfolio* 16(2/3):135-196.
- Cranmer, Leon E.
1990 *Cushnoc: The History and Archaeology of Plymouth Colony Traders on the Kennebec*. Occasional Publications in Maine Archaeology Number Seven, Maine Historical Preservation Commission, Augusta, Maine.
- Cummings, Abbot Lowell
1979 *The Framed Houses of Massachusetts Bay, 1625-1725*. Belknap Press, Harvard University.
- Deetz, James F.
1972 Ceramics from Plymouth 1635~1835: The Archaeological Evidence. In *Ceramics in America*. Ian M. G. Quimby ed. Winterthur Conference Series, University Press of Virginia, Charlottesville.
- Deetz, James and Patricia Scott Deetz
2000 *The Times of Their Lives: Life, Love, and Death in Plymouth Colony*. Henry Holt and Company.
- Dolomieu, T. 1960 [1797], 'Report on the art of making gunflints (fire-flint)', *Missouri Archaeologist*, 22: 50-61

Duco, D.H.

1987 *The Dutch Clay Tobacco Pipe, manual for dating and determination.* Amsterdam Pipe Museum, Pijpenkabinet Foundation, Amsterdam

Faulkner, Alaric and Gretchen

1987 *The French at Pentagoet 1635-1674: An Archaeological Portrait of the Acadian Frontier.* Occasional Publications in Maine Archaeology Number Five, Maine Historical Preservation Commission, Augusta, Maine.

George, Douglas C.

1987 Interim Report on the Archaeological Survey of Plimoth Plantation Lands. On file at the Massachusetts Historical Commission, Boston.

Gibson, Susan G.

1980 *Burr's Hill: A 17th Century Wampanoag Burial Ground in Warren, Rhode Island.* Haffenreffer Museum of Anthropology, Brown University.

Harvey, Nigel

1984 *A History of Farm Buildings in England and Wales.* David and Charles Inc. North Pomfret, Vt.

Heath, Dwight B.

1963 *Mourt's Relations: A Journal of the Pilgrims at Plymouth.* American Experience Series.

James, Sidney V.

1963 *Three Visitors to Early Plymouth.* Plimoth Plantation.

Jensen, Merrill ed.

1962 *English Historical Documents* v.9.

McIntyre, Ruth A

1963 *In Debts Hopeful and Desperate: Financing the Plymouth Colony.* Plimoth Plantation, Plymouth, Massachusetts.

Morison, Samuel Eliot

1984 *Of Plimoth Plantation.* Alfred A. Knopf, New York.

Noel Hume, Ivor

2002 *The Archaeology of Martin's Hundred: Part 2: Artifact Catalog.* Scholarly Book Services Inc

1970 *A Guide to Artifacts of Colonial America.* Vintage Books, New York.

Oswald Adrian

1975 *Clay Pipes for the Archaeologist.* British Archaeological Report Series no. 14. Oxford, England.

Parker, George Kinship

1968 *Sailor's Narratives of Voyages along the New England Coast 1524-1624*. Burt Franklin Press, New York.

Peterson, Harold R.

2000 *Arms and Armor in Colonial America 1526-1783*. Dover Publications, Mineola, New York.

Raymond, Percy

1949 Latten Spoons from the old Colony. *Bulletin of the Massachusetts Archaeological Society* 11:6-10.

Slotkin, Richard and James Folsom

1978 *So Dreadful a Judgment: Puritan Responses to King Philip's War 1676-1677*. Wesleyan University Press, Middletown, Ct.

Turbaugh, Sarah P.

1985 Imitation, innovation and permutation: The Americanization of Bay Colony lead glazed redware. In: *Domestic Pottery of the Northeastern United States 1625-1850*. Sarah Peabody Turnbaugh ed. Academic Press Inc. Orlando, Florida.

Walker, Iain C.

1977 *Clay Tobacco Pipes, With Particular Reference to the Bristol Industry*. History and Archaeology, nos. 11A-D. Parks Canada, Ottawa.

Watkins, Laura

1950 *Early New England Potters and their Wares*. Archon Books, New York.

Watkins, C. Malcolm

1960 *North Devon pottery and its Export to America in the 17th Century*. Bulletin 225, United States National Museum, Washington, D.C.

Wilcoxon, Charlotte

1987 *Dutch Trade and Ceramics in America in the Seventeenth Century*. SUNY.

Witthoft, John

1966 A History of Gunflints. *The Missouri Archaeologist*. Vol. 22, 29-39.

Wood, William

1977 *New England's Prospect*. University of Massachusetts Press.

Young, Alexander

1974 *Young's Chronicles of the Pilgrim Fathers*. Geneological Publishing co., Inc. Baltimore, Maryland.

APPENDIX B

CERAMICS

Redware:

17th Century Vessels

Pots- 43
Small Pots- 5
Milk Pans- 14
Tall Pans- 5
Pitchers- 2
Jugs- 2
Mugs- 5
Drinking Pots- 7
Chamber Pots- 4
Total: 89 Vessels

18th-19th century vessels

Pots- 14
Milk Pans- 3
Bowl- 4
Cup/ Mugs- 8
Chamber Pots- 9
Flower Pot: 1
?- 7
Total 45 Vessels

Borderware

8 vessels 2 Pipkins, 1 dish, 2 Deep Dish, 1 Wide Bowl, 1 Collander, 1 Costrel

Borderware

Vessel 1: Interior green glaze
Exterior unglazed
Pipkin 11cm exterior diameter at rim lip on rim for lid
Vessel 2: Interior green glaze
Exterior unglazed
Deep Dish 32 cm exterior rim diameter
Vessel 3: Interior olive yellow glaze
Exterior unglazed
Dish 22 cm exterior body diameter
Vessel 4: Interior light yellow brown glaze
Exterior unglazed
Pipkin 4cm diameter at base
Vessel 5: Interior green glaze
Exterior unglazed
Wide bowl 28cm rim diameter
Vessel 6: Interior olive green glaze
Exterior unglazed
Deep Dish 38cm rim diameter

- Vessel 7: Interior yellow brown glaze
 - Exterior unglazed
 - Collander interior
- Vessel 8: Interior unglazed
 - Exterior crude orange-yellow glaze
 - Costrel 1" mouth opening

Stoneware

- Vessel 1: Interior unglazed
 - Exterior brown salt-glaze
 - Rhenish Jug with handle 13cm body diameter
 - Vessel: 2: Interior unglazed
 - Exterior light brown splotchy salt-glaze
 - Rhenish Jug 20cm body diameter
 - Vessel 3: Interior unglazed
 - Exterior salt-glaze
 - Rhenish Jug 14cm body diameter
 - Vessel 4: Interior pink
 - Exterior orange brown splotchy glaze
 - Rhenish Jug 10cm body diameter
 - Vessel 5: Interior unglazed
 - Exterior light brown splotchy glaze
 - Rhenish Jug 12cm body diameter
 - Vessel 6: Interior gray
 - Exterior gray with blue decoration
 - Westerwald Jug 15cm exterior body diameter
 - Notes: very similar to vessel shown in Hurst on page 225 (1600-1625)
 - Vessel 7: Interior tan
 - Exterior gray with blue decoration
 - Westerwald Jug 10cm body diameter
 - Vessel 8: Interior tan
 - Exterior brown
 - English brown stoneware Mug with molded ridges on exterior
- In collection: 8

Buff-Bodied Earthenware

- Vessel 1: Interior
 - Exterior
 - Buff bodied English Earthenware mug with molded ridge on exterior

Wrotham redware

Vessel 1: Interior clear glaze
Exterior clear glaze with slip decoration
Slip decorated mug 12cm exterior body diameter

Slipware

Vessel 1: Interior combed slip decoration rim scalloped
Exterior unglazed
Slipware dish 30cm rim diameter

Tin-enameled

Vessel 1: Interior glaze missing
Exterior clear glaze
Plate 6cm basal ring exterior interior

North Devon Gravel Free ware

Vessel 1: Interior mottled olive brown
Exterior unglazed
Baluster Jar 17cm diameter body
Vessel 2: Interior Mottled brown and tan
Exterior unglazed
Baluster Jar
Vessel 3: Interior olive green
Exterior unglazed
Baluster Jar 15cm body diameter 15 cm interior lip diameter
Vessel 4: Interior dark olive brown
Exterior
Baluster Jar 16cm exterior rim diameter

North Devon Gravel Tempered

Vessel 1: Interior Tan
Exterior unglazed
Milk pan