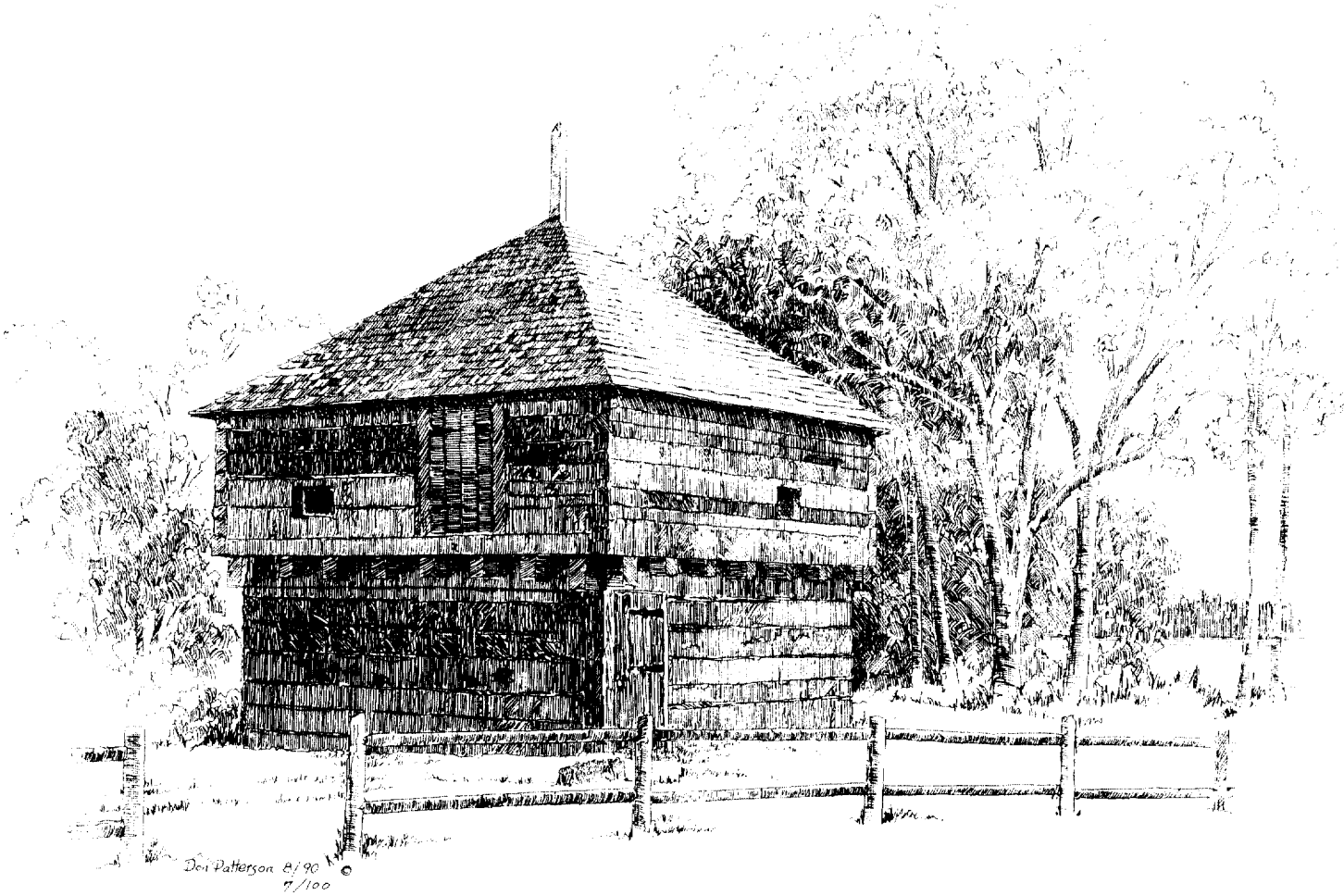
THE MAINE ARCHAEOLOGICAL SOCIETY INC. BULLETIN



VOLUME 31:2

FALL 1991

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Cover Illustration: Line drawing of Fort Halifax Blockhouse by Donald C. Patterson of South Portland, 1990. Reproduced with the artist's permission.

BLOCKHOUSES AND CELLARS: THE 1989 AND 1990 ARCHAEOLOGICAL WORK AT FORT HALIFAX

Leon Cranmer

INTRODUCTION

This is an interim report on the 1989 and 1990 archaeological excavations at Fort Halifax in Winslow, Maine. Reports on the archaeological work of previous seasons have been distributed to interested parties and are on file at the Maine Historic Preservation Commission, Augusta, Maine. A comprehensive report dealing with the history, and historic and prehistoric archaeological work at the Fort is planned once research, excavations, and analysis are complete.

Archaeological excavations at Fort Halifax began in 1987 after the only surviving structure of the Fort, the southwest Blockhouse, was swept away during spring floods that year. About 30% of the timbers from the structure were recovered, but before the Blockhouse could be rebuilt it was necessary to confirm its original location and insure that foundation work would not destroy significant archaeological deposits. A two week archaeological survey in August 1987, funded through the Maine Historic Preservation Commission's Historic Restoration Grant Program, determined that the Blockhouse was at its original location before being swept down-river. Not surprisingly, in the process of determining this location, a deeply stratified prehistoric component to the site was uncovered. A five week archaeological survey funded by the Maine Historic Preservation Commission was conducted in June 1988, to investigate this prehistoric component and recover data from an area that would probably be disturbed by work on the foundation for the restored Blockhouse. In August, 1988, the Upper Kennebec Archaeological Survey (funded through a grant from the Maine Historic Preservation Commission and Fort Western Museum, Augusta, Maine), investigated the southeast corner of the Fort, locating what appeared to be the cellar to a watchbox. Figure 1 is a map showing the location of these excavations on which is superimposed the suggested Fort location.

This report concerns two subsequent excavations at Fort Halifax. The first was an eight day field season undertaken in September 1989, funded by a $4,000 grant from the Maine Historic Preservation Commission. The second excavation was a four week field season conducted in September 1990, funded through a $20,000 appropriation from the Maine State Legislature to the Maine Historic Preservation Commission.

1989 FIELD SEASON

The 1989 field work at Fort Halifax was conducted from September 18th to 29th, under the co-direction of Leon Cranmer and Dr. Arthur Spiess, both with the Maine Historic Preservation Commission. The crew consisted of Cranmer and three skilled excavators (at any one time). Those excavators involved were Erica Rowland, Tom Fenn, Kaare Mathiasson, and Charles Lagerbom. We were also fortunate to have Judy Ritchie volunteer her services for two half-days. In addition, Fenn assisted in artifact analysis and report preparation.

Maine Archaeological Society Bulletin 31:2:1-26 (1991)

Goals and Methodology-1989

The focus of the 1989 field work was the main structure of the Fort. The goal was to locate the building's cellar, determine the condition of the cellar's foundation walls, and establish the dimensions of the building. This structure, which was known as the "Fort House," supposedly contained the officers' quarters, armory and the storeroom for the Fort.

The most accurate and detailed information about the Fort comes from the Rev. Timothy Paine, who, during the early 1850s, collected and recorded oral traditions about the Fort and conducted archaeological investigations at the site (Paine 1852). Paine states that the main building of the Fort was 40' X 80'; however, in 1755 the Massachusetts government was billed by Captain George Berry for boarding a two story, 100' X 40' building (Fisher 1972:14).

Beside not knowing the size of the building, the exact location of the Fort House was ambiguous. Contemporary accounts suggest that the Fort compound should have been 120' square. As a result of his excavations, Paine stated that the Fort was about 117' square. Since the palisade enclosing the compound formed two of the walls of the Fort House, the size of the compound would determine where the Fort House cellar would be located on the site.

Finally, the biggest unknown was what we would find in the ground once the Fort House was located. When Paine conducted his investigations at the site he stated that "The cellar walls of the Fort House are nearly as perfect as they were ninety ... years ago." Since there was considerable interest in Winslow and among the "Friends of Fort Halifax" in 1989 in reconstructing the Fort, it was hoped that the excavations might find an intact foundation upon which a new Fort House could be built.

In planning the excavation strategy the above mentioned variables had to be considered. The presumed location of the Fort House was determined by using a combination of the documentary evidence and the archaeological evidence from the excavations over the previous two years. A plan of the Fort was superimposed on a grid of the site which included our previously excavated pits, and the Fort plan was aligned with the known excavated features shown on the grid (see Fig. 1). It was decided to try and locate the southeast corner of the Fort House structure. The location of this corner would provide us with enough information to determine the size of both the Fort House and the Fort compound itself. This location would also avoid the foundation of a 20th century warehouse known to have been built in this vicinity. A large rectangular area (20' x 25') based on the existing grid system (N25-45 E75-100), was laid out using a transit, and elevations were recorded every five feet around the perimeter and at all intersecting grid lines. As in previous years the standard test unit size was 5' x 5' squares and these units were further divided into quarters for the purpose of tighter provenience control.

Two test units were begun at N35 E80 and N40 E90 in hopes of coming down on the south and east walls of the Fort House, respectively. (Pit designations are taken from the southwest corner of each square.) Preliminary testing was begun with shovel and trowel, but it soon became apparent that there was a great deal of overburden that needed to be removed. With the assistance of the Town of Winslow's backhoe, two trenches were opened. Both trenches were five feet wide, one running along the E80 grid line from N35 to N50, while the other ran along the N40 grid line from E90 to E100 (Figs. 2 & 3). This arrangement afforded the best possible chance of locating the corner of the structure without having to ask for the backhoe to return and open up additional test units.

Excavation was completed using trowels. All soil was screened through 1/4 inch mesh, or in a few instances through 1/8 inch mesh when it was thought necessary. Both color slides and black and white photographs were taken. Plans and profiles were drawn using fixed, surveyed datum points to assure vertical control. (Measurements in this report are stated as "below surface" rather than "below datum" to avoid confusion.) Upon comple-

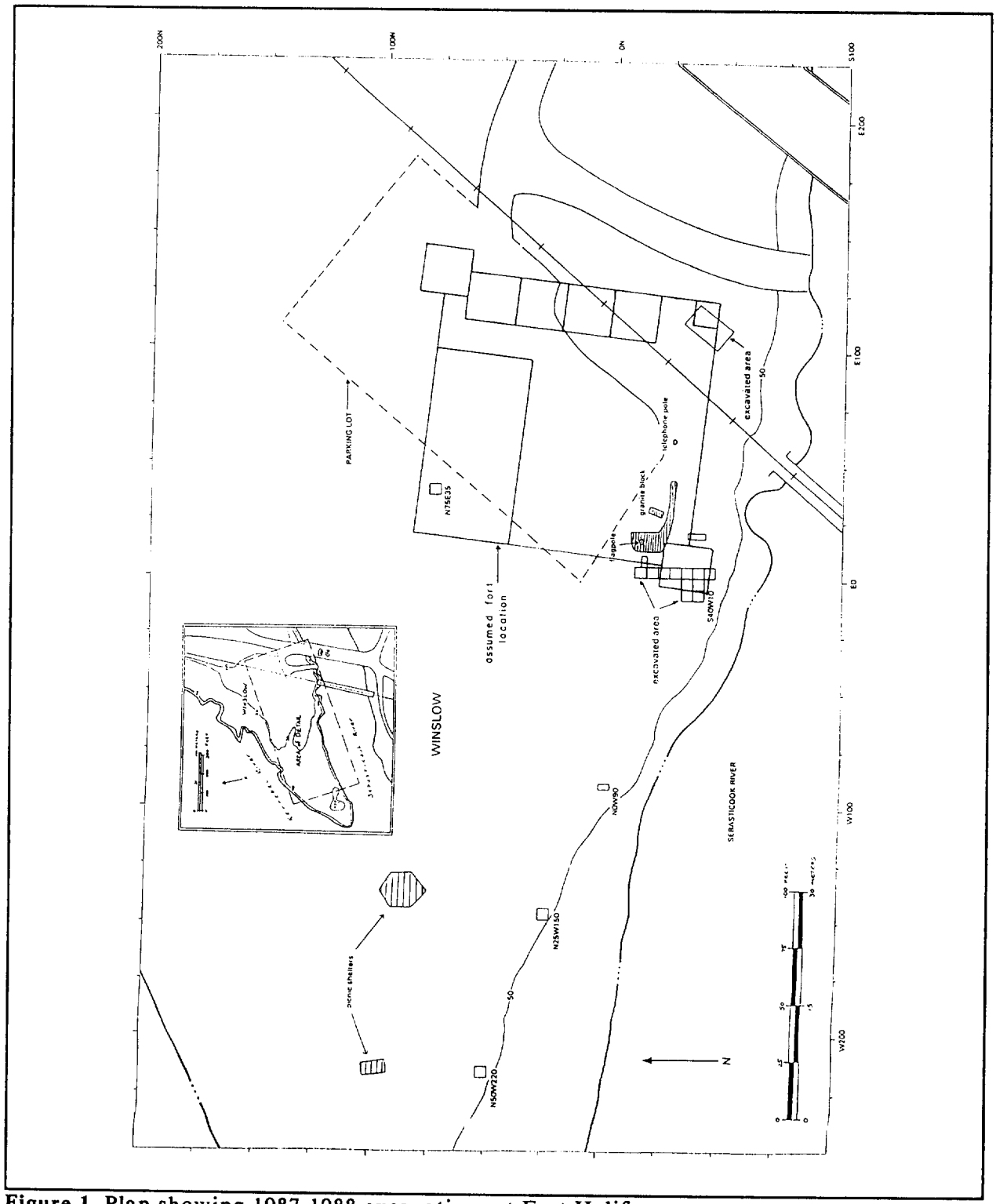

Figure 1. Plan showing 1987-1988 excavations at Fort Halifax.

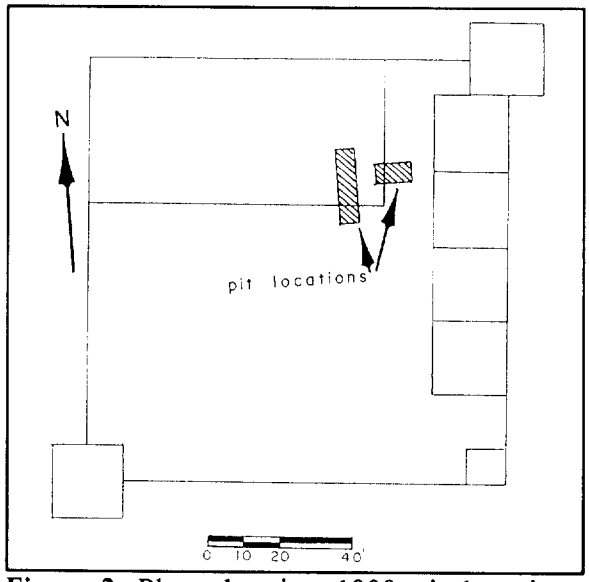

Figure 2. Plan showing 1989 pit locations relative to assumed Fort location.

tion of the eight days of field work the trenches were lined with plastic strips for ease of relocation if necessary, and everything was backfilled. Artifacts were washed and cataloged at the Maine Historic Preservation Commission's archaeology lab in Augusta where they also are being temporarily stored.

Results

Paine's determination that the building was 40' X 80' proved correct. That information, together with our measurements, enabled us to come down exactly on the southeast corner of the cellar as planned. The cellar was designated as Feature 45. The cellar floor was approximately 6.5' below the present parking lot surface.

Much to our disappointment, however, a recently discovered newspaper article was brought to our attention shortly after the excavations began. The article, from The Waterville Mail of

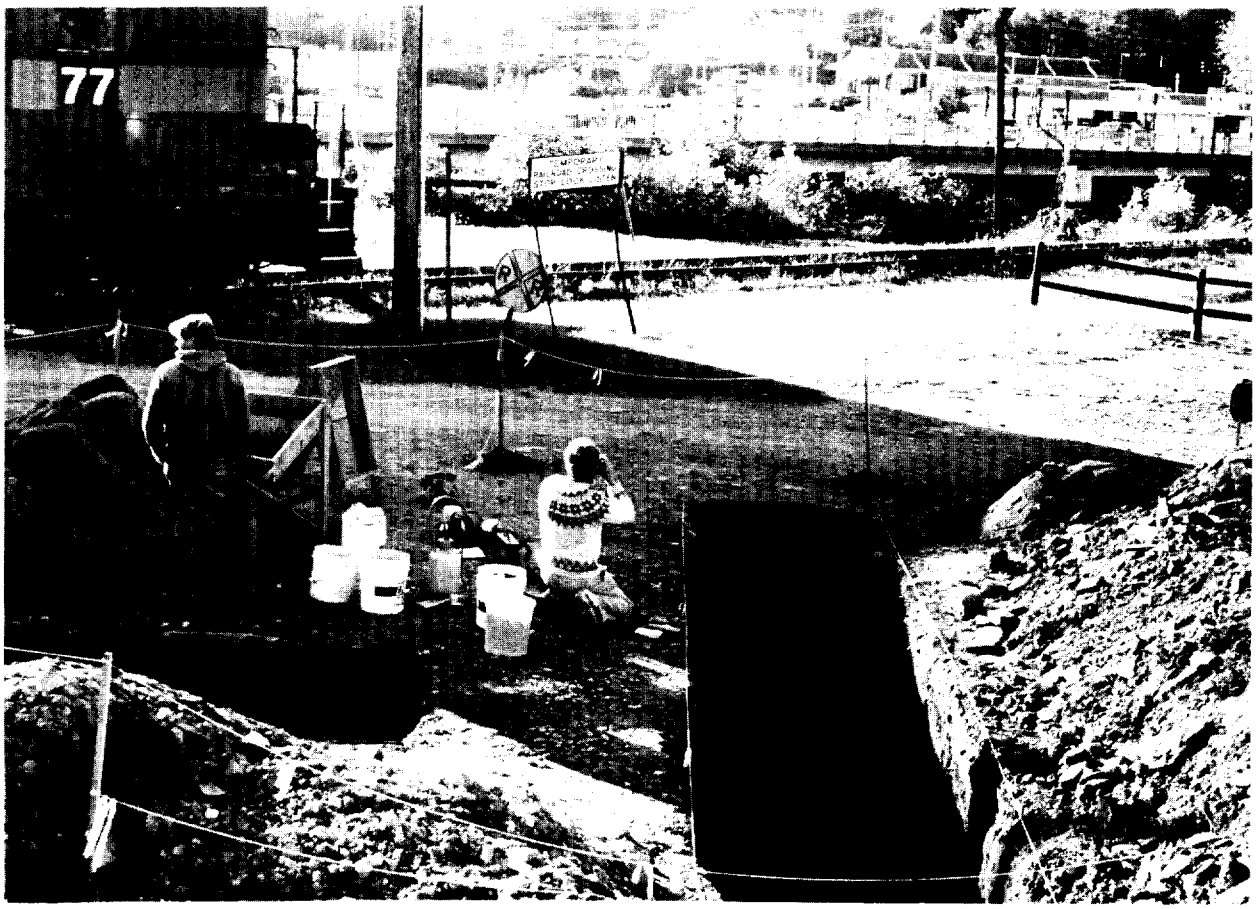

Figure 3. 1989 excavations in progress.

Aug 4, 1865, stated that the foundation of Fort Halifax had been demolished and the materials taken to complete the cellar walls of Mr. De Rocher's new house on Summer Street. Based on Paine's observations, we hoped to find the intact cellar walls of the Fort, but this new information made that seem unlikely. In fact, we found only a portion of the lower coarse of the wall in the E80 trench, and none in the N40 trench. (Refer to Figure 4 for the location of this wall in profile.) We did find complex stratigraphy which posed a challenge for interpretation (Figures 4 and 5). The profile of the west wall of N30 E80 in Figure 4 will be used to illustrate this stratigraphy in conjunction with the generalized description that follows.

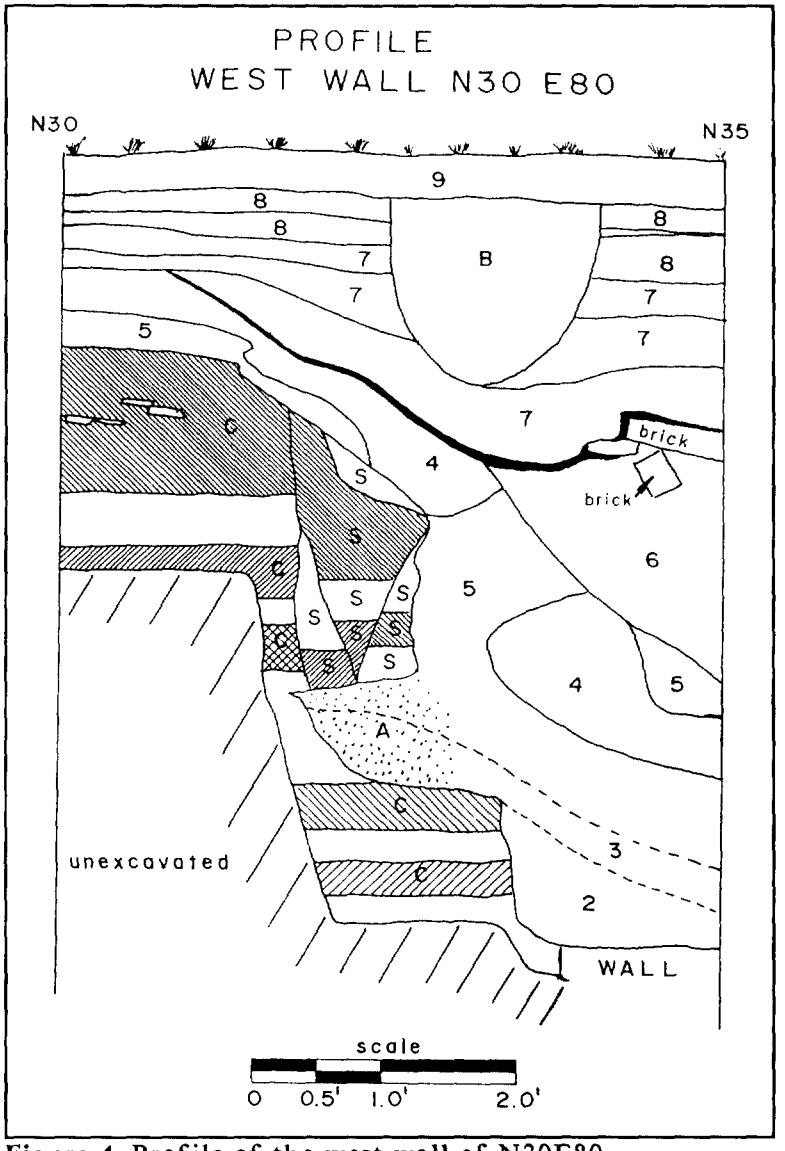

Figure 4. Profile of the west wall of N30E80.

Stratum 1 is not shown in Figure 4 but is evident in other profiles. It is the lowest historic stratum, which begins just off the right edge of Figure 4 where the remains of the wall end. Stratum 1 was a dark, artifact bearing soil, which had been slowly deposited between 1792, when the Fort House was taken down, and 1865 when the foundation wall was removed. Artifacts in this stratum range from the fort period to the mid-19th century. Prehistoric artifacts were present in many historic strata because prehistoric strata were disturbed by Fort construction.

Strata 2 & 3 were the result of the wall demolition episode in 1865. Stratum 2 is actually composed of stratum 1 material which was redeposited when the wall was removed. Stratum 3 is a dark soil like stratum 2, but consisted mostly of slate and shale rubble which is the remains of the wall, some of which crumbled as it was removed. The dotted area "A" shown in Figure 4 was also the result of the wall removal. Rocks apparently had been used as backfill on the outside of the wall. When these rocks were removed, a depression remained. Part of this depression or hole was filled in when subsoils above slumped down into the depression. These slumped subsoils are marked on Figure 4 with an "S," and the cultural (prehistoric) slumped subsoil strata are hatched in various ways to show how they probably relate to each other and to the undisturbed subsoil and cultural strata (marked "C") to the left.

A railroad spur had been built over a portion of the Fort House cellar probably in the late 19th or early 20th century. (Future documentary research will determine the exact date of this railroad construction.) Strata 4 & 5 were deposited between the demolition of the cellar wall and the construction of the railroad spur. Stratum 4 contained rubble of brick, slate, and mortar, while stratum 5 was more organic and contained little rubble but many artifacts, although both strata date to the last half of the 19th century. Many of the best fort period artifacts, namely ceramics, buttons, and hand--forged nails, as well as artifacts dating through the mid--19th century, came from stratum 5. It would appear that this fill was pushed into the cellar hole from the surrounding ground surface. Whether these strata are associated with the railroad construction or precede this event has yet to be determined.

Figure 5. Profile of the west wall of N30E80 showing the remains of fieldstone cellar wall on the floor of the pit.

We know that there was a railroad spur which went west toward the Kennebec River to service light industry built on this point of land during the late-19th and early 20th centuries. This spur can be seen in a 1939 photograph (Figure 6). The spur ran between the two buildings on the right and is visible as it headed toward the Kennebec just to the right of the fence surrounding the Blockhouse. The rails were removed in 1975

Figure 6. A 1939 railroad photo showing the blockhouse (left), railroad spur (center), and structures on either side of the spur (right).

for the Arnold Expedition re-enactment, but apparently the ties were left in place and covered over. In N45 E80 railroad ties were encountered, so we know that the spur crossed the cellar hole. Three ties were removed during backhoe excavation and a fourth was left in situ in the west wall of the trench.

In order to construct this spur, the remains of the cellar hole had to be filled in with something that would provide a solid base for the railroad ties. This fill is represented in Figure 4 by strata 6 & 7. Stratum 6 is solid marine clay and was the solid base needed for the railroad. It was determined during subsequent excavations that this clay does not fill the entire cellar, but only the area where the spur traversed the cellar. The stratum labeled 7 consisted of sterile sands and gravel used to complete the filling of the cellar hole.

Stratum 8 represents the late 19th- and early 20th-century industrial activity at the site. This stratum contains coal cinder/slag and gravels, materials used for parking lots, driveways, or for any hard packed surface as would be found around industrial sites. Stratum 9, the present ground surface, consists of lighter gravel than found in stratum 8. In some locations on the site, stratum 9 is divided into two distinct strata, occasionally with a thin lens of sand separating the two. This sand level represents the deposit from the 1987 flood. The lower gravel stratum is the fill used in 1975 to cover the railroad ties and create the present parking lot. The uppermost stratum of gravel represents the disturbance created after the '87 flood, when the area was used to deposit and dispose of debris from the flood, and other subsequent work on the parking lot.

The intrusion shown by "B", in Figure 4, is a result of the industrial development of the site. The feature is probably part of a foundation associated with the building on the south side of the railroad spur (as shown

in Figure 6). Subsequent excavations uncovered several large post holes which probably contained pilings to support this building or its loading dock. Intrusion "B" may be a similar post hole or may be part of a foundation trench.

Exterior to the Fort House cellar hole, feature 45, we encountered two other historic features in N40 E95. Feature 47, in the southeast corner of the square, was a funnel shaped pit which was not completely excavated. (We completed the excavation of this feature the following year.) This feature contained a thin lens of ash and was full of mid- to late-18th-century artifacts that would have been contemporaneous with the Fort. The artifacts comprised many types of ceramics, miscellaneous iron, clay tobacco pipes, bricks, mortar, miscellaneous glass, and bone, both calcined and unburned. Its size, contents, and location, about three to four feet from the east end of the cellar, offered no clues as to the original purpose of the feature. Feature 48 in the northeast corner appeared to be a later intrusion containing a few eighteenth and early nineteenth century artifacts and cutting through the railroad fill. This feature also appears to be associated with the industrial development of the site, perhaps an early phase of this development.

As previously mentioned, prehistoric strata were encountered. It is significant that the prehistoric occupation extends this far back from the riverbanks. This extent may suggest that the site contained large prehistoric settlements rather than small encampments along the riverbank, or it may represent movement of the riverbanks due to flood deposition. Wherever possible, these prehistoric strata were left undisturbed since our interest was with the Fort and our time was limited. When it was impossible to avoid disturbing prehistoric features, these features were mapped, photographed, and soil samples were taken. Prehistoric features were designated as features 46, 49, 50, 51, 52, and 53. These all appeared to represent hearths containing fire cracked rock and charcoal. Radiocarbon dating will be done on some of these charcoal samples. Items of prehistoric material culture recovered consisted of debitage and pottery. A detailed analysis and interpretation of the prehistoric features will be presented elsewhere.

Conclusions

The eight days of field work at Fort Halifax in 1989 were both rewarding and frustrating. The main goal of the excavation was achieved in that we were able to locate the cellar of the Fort House, exactly where we thought it would be. Having found the corner of the structure not only confirmed that the Fort House was 40' X 80' as Paine suggested, but it also helped us arrive at a more accurate dimension for the Fort itself as follows.

Some researchers erroneously have suggested that the Fort was 120' square, probably basing their hypothesis on the 120' square inner palisade of General John Winslow's 1754 plan (Fig. 7). Winslow's plan was only partially constructed, and Captain William Lithgow re-designed and completed construction of the Fort in 1755. Paine's research suggested that Lithgow's Fort was 117' square. Based on the archaeological evidence, Paine was close; but to be more precise, the Fort compound appears to have been 115.5' square. (This hypothesis would be strengthened by evidence uncovered during the 1990 field work.) Not only does this measurement correspond more accurately with the archaeological record, but it is also seven rods. The rod, 16.5', was a common unit of English measure during the colonial period. Archaeological excavations have indicated that the rod was a unit of measurement in the construction of the palisade around Fort Western, with the main support posts 16.5' apart. Since Forts Halifax and Western were so closely associated, the use of the rod as a unit of measurement in the construction of the Palisade at Fort Halifax seems reasonable.

Despite the success in locating the corner of the cellar, little actual information concerning the Fort House itself was recovered. A big disappointment, of course, was the fact that the foundation walls had been removed. Not only did this distinction elimi-

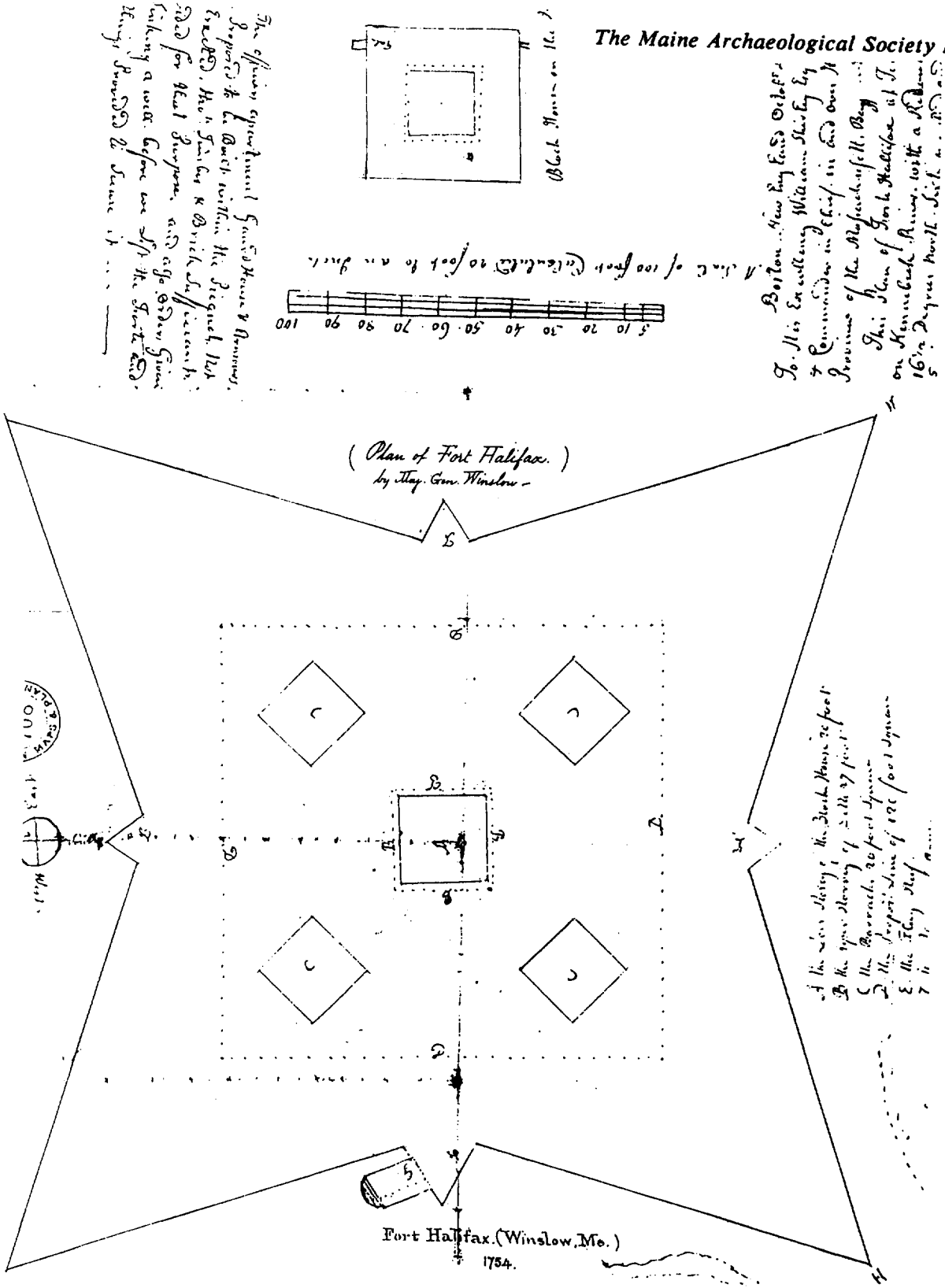

Figure 7. General Winslow's 1754 plan of Fort Halifax.

nate the possibility of placing a reconstructed Fort House on its original foundation, but the demolition of the wall destroyed much of the evidence of the original construction of the Fort. The wall removal also resulted in stratigraphy that was difficult to interpret.

The lack of evidence for the Fort House occupation was equally frustrating. It was hoped that there would be a level of Fort occupation debris on the cellar floor. No actual hard-packed floor surface was encountered, and the lowest historic stratum, stratum 1, contained a mixture of late-18th through early-19th-century artifacts. Either this floor surface was greatly disturbed after the Fort House was removed, or the cellar was little used during the fort period.

A final frustration of this field season was the lack of time to pursue features as they appeared in the ground, and hypotheses as they appeared in the mind. For example, was the modern intrusion shown in Figure 4 a trench or one of a series of post holes? Neither Features 47 or 48 were completely excavated because it was necessary to spend the time working in the cellar hole, Feature 45. Feature 47 appeared to be particularly promising. Fortunately we were able to return the following year with four whole weeks to further examine this hitherto unexamined area of the Fort.

1990 FIELD SEASON

The 1990 field season was conducted from September 11 through October 10, and was again under the co-direction of Leon Cranmer and Dr. Arthur Spiess. The crew consisted of Cranmer and up to five skilled excavators: Maxine Collins, John Cooper, Tom Fenn, Kaare Mathiasson, Jeremy Pincoske and Elizabeth Trautman (three days), and excavator Lynn Pierce (three days). We also appreciated three days of volunteer work by Vickie Norris.

Goals and Methodology-1990

During the four weeks of field work budgeted for the project we hoped to accomplish several goals. The first and major task of the season was to excavate a large portion of the cellar hole in order to obtain more information on how the Fort House was constructed. It was believed that there might have been two cellars below the Fort House, one on either end. This was the method of construction used at Fort Western. Paine, in his article, discussed two separate sections he called vaults, but his meaning is ambiguous. It is unclear whether he is referring to two chimney vaults or is calling the two cellars "vaults." In addition, work in the cellar would locate the remains of the chimney bases and determine if there was an intact floor surface in the cellar. This work would also tell us to what extent the Fort House cellar(s) were disturbed by the foundation of a warehouse located on the north side of the railroad spur (Fig. 6).

It was hoped that there would be at least a week of field work remaining after the excavation of the cellar was completed. During this week, testing along the front of the Fort House might help to locate evidence for window and door locations as well as other structural features. Other excavation units would examine the area of the Northeast Blockhouse and a portion of the enlisted mens' quarters to determine what evidence remained of these structures.

It was decided to run a 5' wide trench longitudinally down the center of the Fort House location. Only about 2/3 of the Fort House lies below the parking lot and the remainder is below the grass of the city park. Since we wished to confine our operations to the parking lot area, only a portion of the structure's cellar would be exposed by this trench, but this was sufficient we felt to answer our questions. Again, the City of Winslow was kind enough to supply us with the services of its backhoe to open and close this trench. Without this assistance the work could have not been accomplished. The trench as excavated ran along the N55 grid line from E40 to E105, or 65' long.

Work was completed on this long trench in two weeks, leaving two additional weeks to explore other areas of the Fort. The first project during the second two weeks of field work was a series of 2.5' X 5' test units excavated along the N35 grid line. These test

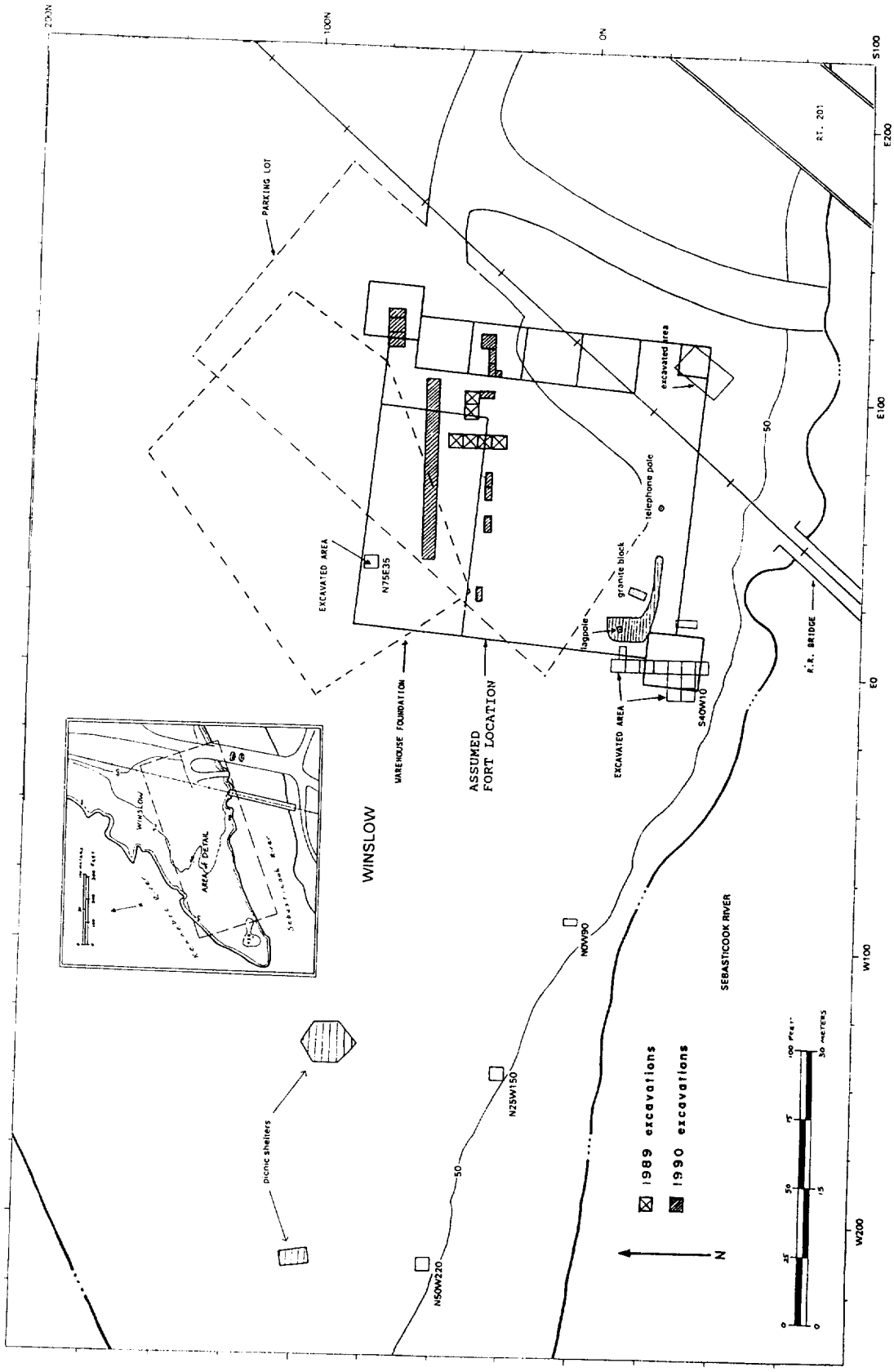

Figure 8. Plan showing all excavations at Fort Halifax, assumed Fort location, and approximate warehouse foundation location.

units were designed to pass along the front of the Fort House, to complete the excavation of Feature 47 we had discovered the year before, and to bisect one of the Enlisted Mens' Quarters. It was anticipated that the pits along the front of the Fort House would provide information on door and window locations for this structure by the recovery of glass and architectural hardware. Finally, one 2.5' X 5' excavation unit and two full 5'X 5' units were dug along the N70 grid line in order to locate the remains of the Northeast Blockhouse. All pits were dug and backfilled by hand. See Figure 8 for excavated areas of the site together with suggested Fort and warehouse locations.

Results

Excavation of the Fort House cellar hole was completely successful and provided much useful information concerning this structure and the changes to the area around it. Figures 9 & 10 illustrate the results of the excavation of the 65' long trench through the cellar. Figure 10 is the profile of the south wall of this trench. The profile and the following discussion of it has been simplified, since much of the stratigraphy was previously discussed in connection with Figure 4. The top left portion of the profile is the eastern end of the trench and the lower right portion of the profile is the western end of the trench. Pit designations are taken

Figure 9. The long pit along the N55 grid line, through the east cellar of the Fort House.

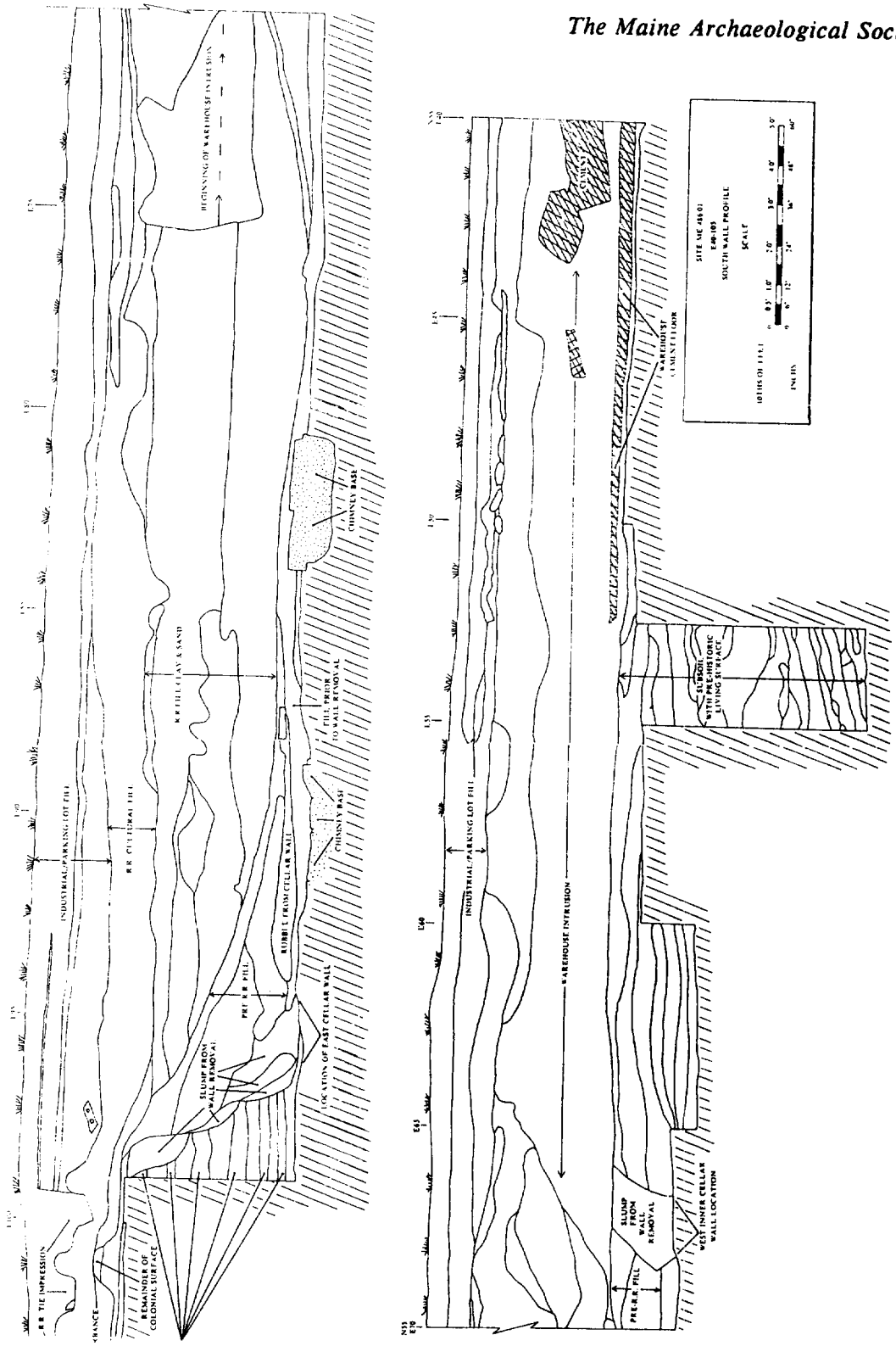

Figure 10. Profile aong the N55 gridline. Profile has been broken at the E70 line.

from the right edge of each square, e.g., the eastern most square is E100 and the western most square is E40.

The east 95 square contained stratigraphy very similar to that of Figure 4. Slump resulting from wall removal, pre-railroad fill containing artifacts from the mid-18th century to the mid-19th century, and railroad fill are all present in the Figure 10 profile. Starting at about the E95 line, cellar fill deposited prior to the removal of the walls can be seen with pre-railroad fill and cellar wall rubble overlaying this lowest stratum.

Railroad fill similar to that previously discussed was present. Of note is the fact that little clay fill was found in the northern wall of this trench. The reason for this is that the clay fill was used only in the vicinity of the railroad spur to create a firm base for the spur, so not all of the cellar was filled with clay. In the E100 square can be seen the impressions of the railroad ties for the spur. These ties extended only a little way into the square. A lens of soil below the tie impressions represents what is believed to be the only remaining example in the whole trench of the original colonial surface.

It was determined that the Fort House did indeed have two cellars separated by a section of unexcavated soil (which for clarity sake will be called "crawl space"). The location of the eastern cellar walls can be seen in Figure 10 in the E65 and E95 squares. The only remains of cellar wall were a few rocks from the west inner wall lying near the south wall of the excavation trench. The exposed eastern cellar hole measured 25' to 30' in length. In order for the two cellars to be of equal size a figure of 27.5' can be used for the length of each cellar, thus allowing 25' of unexcavated earth between the cellars. Since 25' is the approximate amount of crawl space exposed during the excavation, the eastern edge of the western cellar hole should be very near the E40 line where our excavations began. In fact there was a soil disturbance along the west wall of the E40 square, and this can be seen in Figure 10 by a slight dip in the excavated floor surface at the E40 line. This may represent the beginning of the western cellar hole.

Fieldstone and slate chimney bases were found on the cellar floor in the E80 and E90 squares. These bases represent one large vaulted or "barrel" chimney. The bases would have formed an arch which would have supported fireplaces and a single large chimney. The remains of a similar vaulted chimney should be present in the western cellar of this structure. Only one or two courses of rock remained of the chimney bases. Apparently rock was used for the lower portion of the base. At some point the base of rock stopped and brick was used for the vaults' arches, fireplaces, and chimneys, evidenced by a considerable amount of brick rubble just above the chimney bases.

Disturbance created by the construction or demolition of the warehouse began at about the E75 line (Fig. 10) in the south wall and the E85 line in the north wall, suggesting the angle at which the warehouse intersected the Fort House (Fig. 11). A good portion of the strata labeled "warehouse intrusion" are large chunks of cement wall and support columns from warehouse demolition along with late-19th- and 20th-century rubbish. (Because of the large pieces of cement, this structure could not have been excavated without the use of a backhoe.) A portion of the cement floor of the warehouse can be seen in Figure 10 in the western most squares. The warehouse disturbance did not extend to the full depth of the Fort House cellar, but rather ended about 18" above the cellar floor. This fact suggests that at least the lower portion of the western cellar should be undisturbed by the warehouse foundation, which apparently otherwise covers that entire western cellar hole.

There were no clear indications on the cellar floor of the fort period occupation, but between the eastern most chimney base and the wall location were "shadows" outlining what appeared to be flagstones which might have been laid down as a cellar floor (Fig. 12). There are many problem with this "flagstone" hypothesis, however. The outline between the "stones" was dark soil while the "stone" locations were a lighter subsoil. If

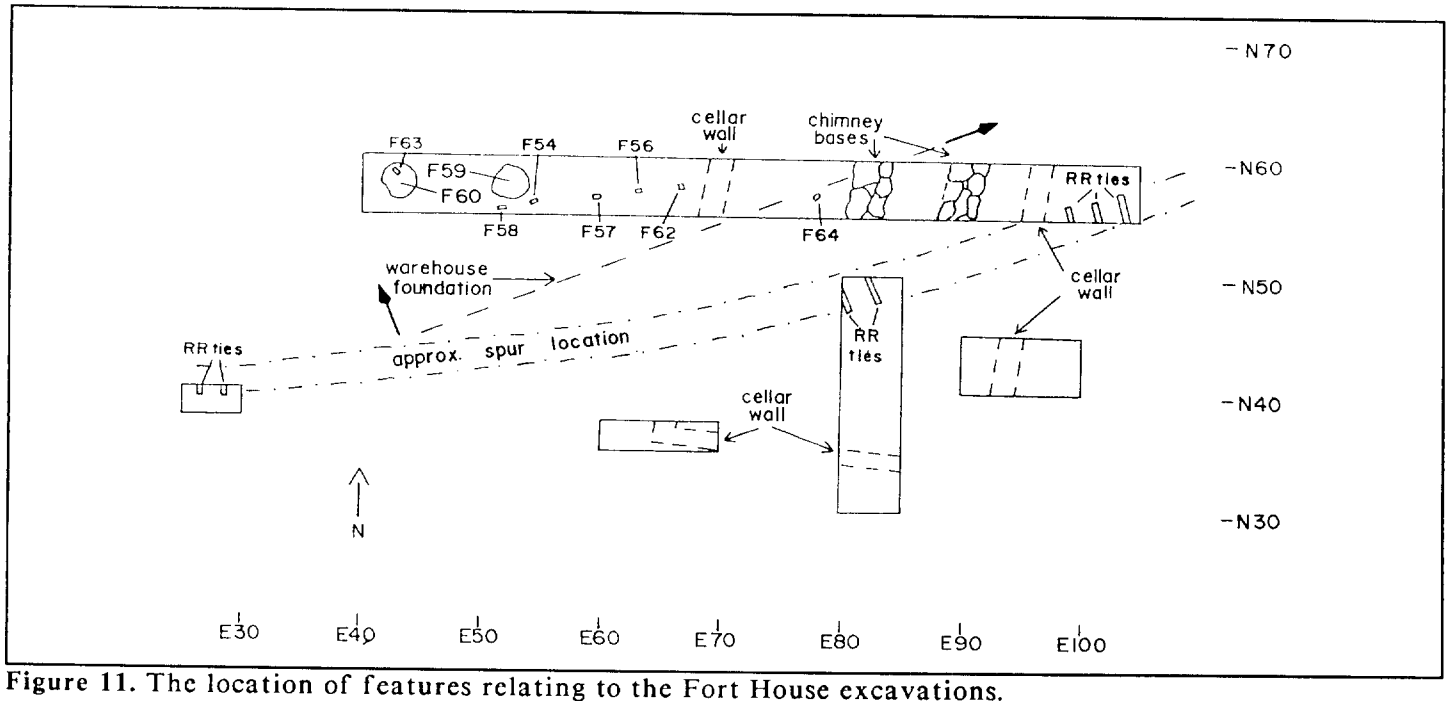

Figure 11. The location of features relating to the Fort House excavations.

Figure 12. Floor of N55 E85/90 showing chimney base (right) and "flagstone impressions" (center). Cellar wall location is to the left.

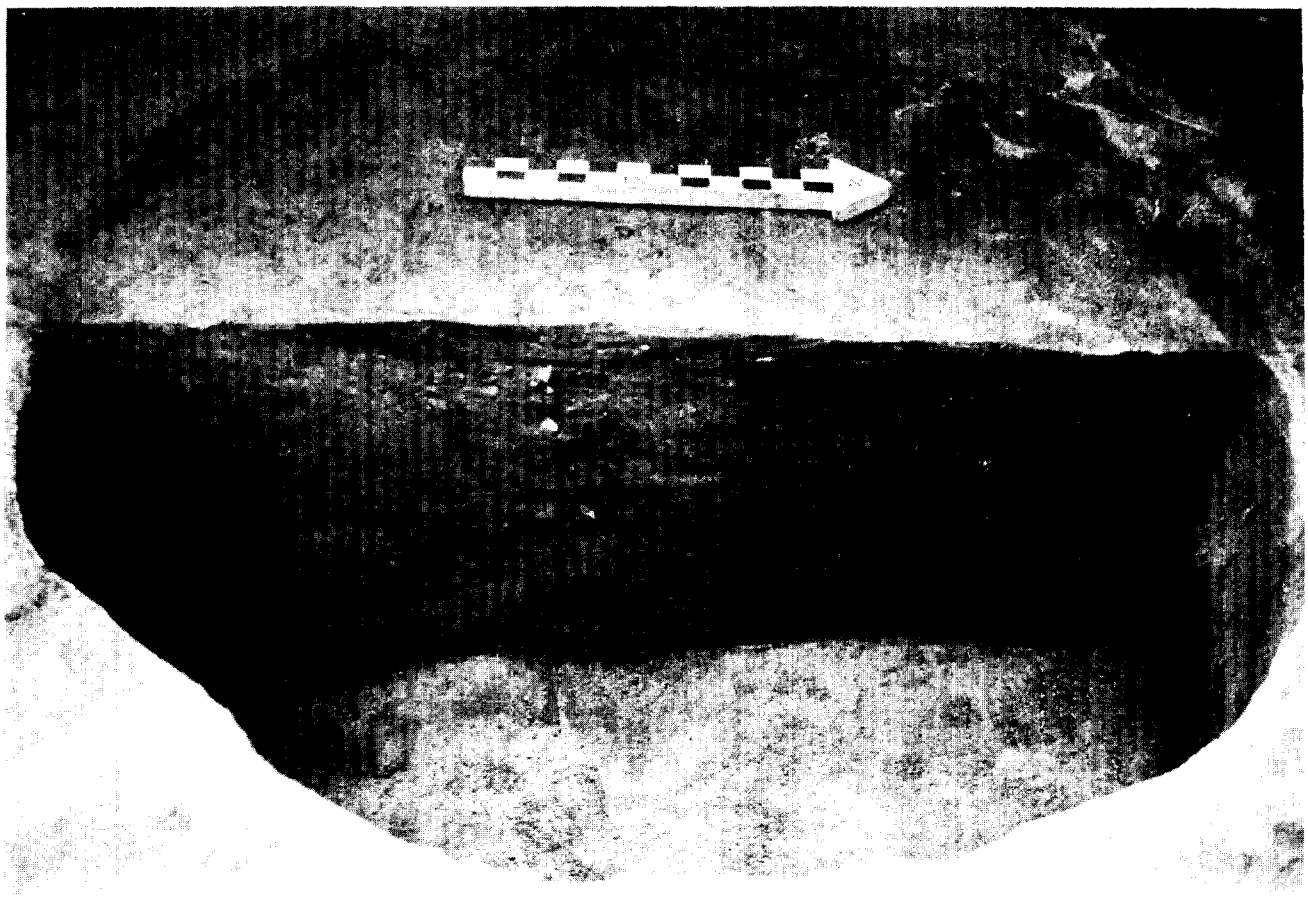

Figure 13. A photograph of prehistoric Feature 60 in cross section.

the stones made an impression in the subsoil and were later removed, the impressions should be dark outlined by lighter subsoil. Also, it is strange that this was the only location where such impressions were found on the cellar floor. Another alternative hypothesis is that these shadows represent rodent activity. Neither suggestion is thoroughly satisfying at present.

In the crawl space portion of the trench two prehistoric features were encountered. Features 59 and 60 (Figures 11 and 13) in E50 and E40 respectively, were circular stains approximately 3.5' in diameter. Both features were fairly straight sided and shallow, extending 2.25' and 1.5' below the excavated surface of the subsoil, respectively. (These actual depths mean little since they cannot accurately be tied into the colonial surface which is unknown in this area. An estimation can be made however, using the small lens of the presumed colonial surface identified in E100. Assuming this surface was horizontal, the depth of Feature 59 was 4.59' and Feature 60 was 3.83', below the colonial surface.) The fill of Feature 60 was a fairly homogeneous soil mixture, but the fill of Feature 59 was deposited in distinct strata. The only artifacts found in either feature were prehistoric, specifically debitage and pottery.

Features 59 and 60 are both prehistoric storage pits. They are practically identical in size to four storage pits excavated at the Tracy Farm site in Starks, Maine, by the University of Maine at Farmington in 1990. The storage pits at the Tracy Farm were also similar to those at Fort Halifax in the way

they were filled in, in that three contained stratified soils while one contained a homogeneous soil mixture. To what prehistoric period the Fort Halifax storage pits belong has yet to be determined.

We also found a series of small rectangular features in the subsoil of the crawl space area. These features, 54, 56, 57, 58 62, and 63, appear to represent 2" X 4" fence post molds. The long axis of the rectangles are aligned with each other except for the two end post molds which are turned 90°, suggesting that the fence turned at these points. This reconstruction seems reasonable because the fence appears to turn at the edges of the crawl space, keeping whatever the fence restrained from falling into the open cellar holes on either side. This evidence provides a date for the fence between 1792 when the Fort House was taken down to the construction of the railroad spur and the filling in of the cellar holes. Feature 64, another post mold, does not appear related to the post molds of the fence, but is probably of the same time period.

One 2.5' square in the southeast corner of E50 was excavated to a depth of 10' below the surface in order to obtain a profile of the lower prehistoric strata. Column samples of soil were taken to be analyzed at a future date. Only fire cracked rocks were found in this 2.5' square.

Once the trench through the Fort House was completed and backfilled, excavation units were laid out along the N35 grid line. In our excavation plan these 2.5' X 5' pits were to have been spaced at five foot intervals along the front of the Fort House. But these excavations did not go according to plan. The first pit excavated at N35 E25 (north half) contained two railroad ties which entered the pit from the north wall and extended about halfway across the pit. There was no evidence of the colonial surface, which had been destroyed by the railroad activity. On the brighter side, this discovery does give us more information with which to plot the path of the railroad spur through the former Fort location.

Because of probable interference from the railroad spur, we abandoned the next two pits we had intended to excavate, and instead opened N35 E50 (south half). This pit did not contain an identifiable colonial surface. The northwest third of this pit appeared to be disturbed by excavations for the railroad spur. The remainder of the pit was also disturbed, but the source(s) of the disturbance cannot be determined at this time.

The next two pits at N35 E60 and N35 E65 (both south half) came down on the south west corner of the eastern cellar hole (Figure 14). A small area (6" X 24") in the northeast corner of the pit was taken down to what was believed to be the cellar floor, at a depth of 6.33' below the surface. Because this was such a small "window" into the cellar floor, the condition of the floor could not be determined. The remainder of E65 contained the rock of the wall and either wall demolition or wall construction backfill, with the exception of a small amount of undisturbed subsoil in the southwest corner of the pit. This wall, over two feet tall, represents the most intact portion of the Fort House wall we have yet uncovered.

The east end of E60 contained slump from the removal of part of the cellar wall. In the west end of E60 was a large modern feature designated Feature 73. This large pit was probably a post hole for a footing or piling associated with the building located on the south side of the railroad spur as seen in Figure 6. Because of time constraints, Feature 73 was not completely excavated. A small lens of dark soil in E 60 may represent a portion of intact colonial ground surface.

We excavated a pit at N35 E95 (eastern half) which was intended to connect with N40 E95, excavated the previous year, in an effort to determine the purpose and nature of Feature 47. This feature was located during the '89 field season but not completely excavated at that time. Therefore, the excavation of N35 E95 was extended an additional 2.5' to include the southeast quarter of N40 E95 in order to re-expose that unexcavated portion of Feature 47. This feature was in the southeast corner of N40 E95, and

would be expected to be found in the northeast corner of N35 E95.

Once Feature 47 was uncovered it was determined that most of the feature was exposed and very little remained unexcavated in the pits to the east. The feature was approximately 21" in diameter at the bottom of the colonial surface and was excavated to a depth of 3.67" below the present ground surface. The feature was somewhat cone shaped at its deepest point, coming to a point in one plane and having a flattened bottom in the other direction. It appeared as though it had been dug from two sides with a small flat nosed spade. The hole had a moderately steep southern face and sloped more gradually to the north. The soil was a very dark fine sandy silt containing many artifacts.

Figure 14. Remains of the southwest corner of the eastern Fort House cellar in N35 E60/65.

Most of the various ceramic types from the fort period we had found previously on the site were again found in Feature 47. These include: Nottingham, white saltglaze, Jackfield, Staffordshire, delft, porcelain, and various redwares. We also found straight pins, a button back, several pieces of bone both calcined and "fresh," brick, and mortar. From the top of the feature, but not necessarily attributable to the feature, came a 1752 George II halfpenny. These fort period artifacts were the great majority of artifacts found in the feature, but there were also a very few pieces of creamware (mean date 1790) and pearlware (mean date 1810) recovered from Feature 47. These later arti-

facts suggest that this pit was filled in around the turn of the 19th century, or perhaps as early as 1792 when the Fort House was taken down. The purpose of the feature is still unknown, but it appears that it might have been a small trash pit.

A very irregular, disturbed colonial surface was found at approximately 1.33' below the present surface in N35 E95. This surface contained fort period artifacts as well as creamware. In addition we recovered a redware pipebowl fragment with a 7/64" bore diameter in its stem. This pipe probably dates to the last half of the 17th century. (Other 17th-century artifacts were also found during this field season and more will be mentioned of them presently.) This historic surface began to slope down along the western edge of the pit. This no doubt represents the beginning of the disturbance of the cellar hole of the Fort House.

Further east we began two pits at N35 E105 and E115 (both south half pits) in order to determine what remains of the Enlisted Mens' Quarters. As excavation of these two pits progressed, they were connected by the excavation of N35 E110, the northwest quadrant of N30 E105 was opened, and N35 E115 was extended north to create a complete 5' X 5' pit. The reason for this expanded excavation was to further investigate some of the large number of features found in this area.

Feature 66 in N35 E105 and Feature 67 in N35 E115 were large rectangular post holes which probably supported a loading dock or structure located on the south side of the railroad spur. Both features were similar in that they measured about 2' wide with an unknown length greater than 2', and were excavated to approximately 3.5' below the present surface. They both contained fill of coarse sand, cinder, and other materials associated with the railroad and industrial activity at the site. In the profile of Feature 67 a portion of a post mold from an 8" diameter post could be seen. In the bottom of Feature 66 was found a brown glass beer (type) bottle. This information all suggest that both post holes were dug in the early 20th century, and the posts were removed relatively recently, at which time the beer bottle fell or was thrown in.

A triangular feature, designated Feature 70, in the south wall of E105 required the opening of the the northwest quadrant of N30 E105. This work showed Feature 70 to be a 2' square which cut through a second feature, Feature 75, which, from what could be seen of it, was also square or rectangular in plan. Feature 75 was fairly shallow and tapering, ending at a depth of 2.66' below the surface, and only 8" below where it was first detected. Feature 70 was straight sided and extended to 4.29' below the surface. The presence of creamware and pearlware would place both features at or later than the turn of the 19th century, but not into the last half of that century because of the lack of contamination from railroad or industrial activity. Feature 70 had the remains of a beam or post lying almost horizontally in it, but this beam may have only been thrown in as part of the fill. There is no indication as to the purpose of either feature.

Evidence for the Fort's Enlisted Mens' Quarters came from several features. Along the west wall of E105 several rocks were encountered at a depth of 2' below the surface. These rocks were randomly piled on top of each other, not forming a wall but rather filling a hole. Nonetheless, these rocks may represent part of the foundation for one of the buildings of the enlisted mens' quarters. Excavations at Fort Edgecomb have shown the disparity in quality of housing between officers and enlisted men, so such an unsubstantial footing for the enlisted mens' quarters at Fort Halifax might not be surprising (R. L. Bradley, pers. comm, July 1986). When comparing the location of this pit as shown on Figure 8 with the suggested Fort location, it can be seen that the west wall of the enlisted mens' quarters aligns with the E105 gridline at this point.

Further support for the above theory comes from the fact that everything to the east of the E105 grid line is apparently within the Enlisted Mens' Quarters. Two probable sleeper (floor support timber) impressions were found at distances of three and six feet from this west wall. These north/

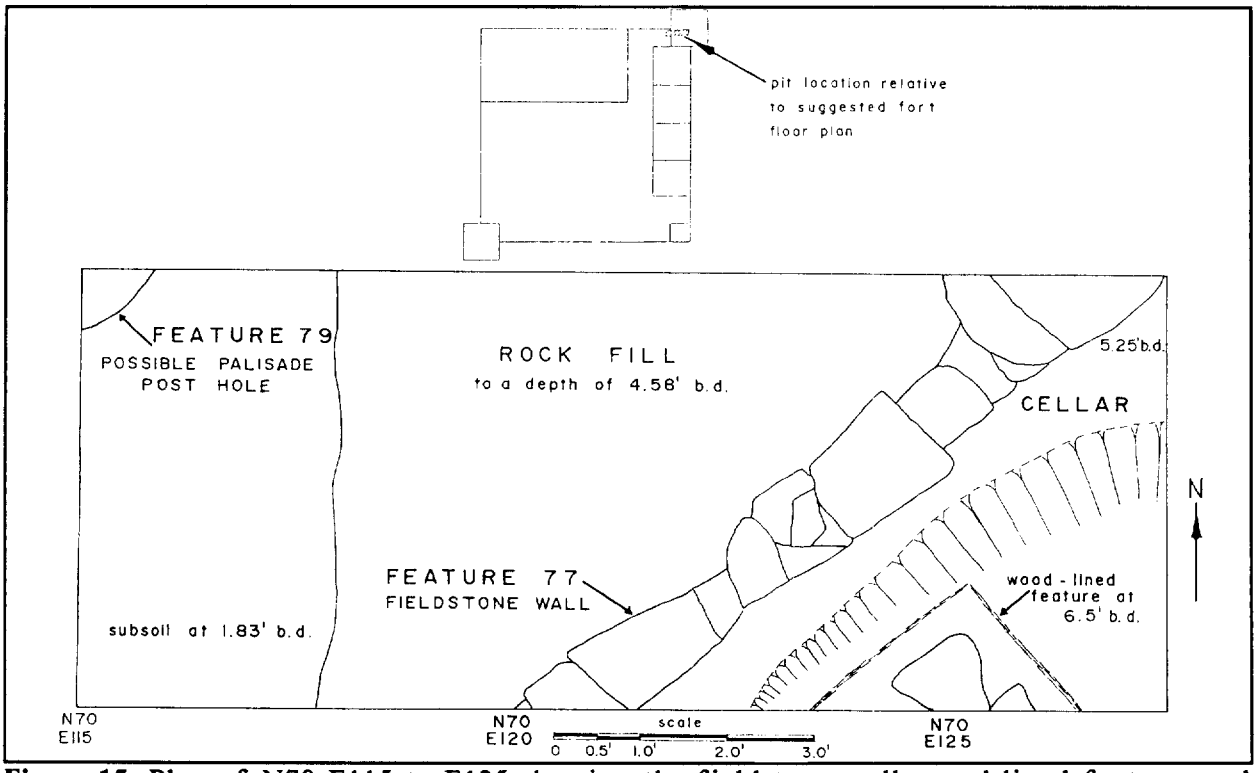

Figure 15. Plan of N70 E115 to E125 showing the fieldstone wall, wood-lined feature, and possible palisade/gate post hole.

south running depressions were designated Feature 76 in E110 and Feature 69 in E105, the latter truncated by Feature 66. No other sleeper impressions were found further east, but in N35 E115 there was a shallow (8"), possible Fort period depression and a burned floor surface. The bowl shaped feature, #68, approximately 2.5' in diameter, contained a gunflint, Staffordshire, slip-trail redware, bone, glass, and a buckle tang. The surrounding lens of charcoal and burned soil contained very few artifacts, but there was a piece of lead shot and a lot of decomposed brick and brick dust recovered here.

The significance of Feature 68 is debatable. It may simply represent a small depression that was eventually filled with some trash. The stratum of burned soil and crushed brick is of interest. This surface is quite probably a fort period living surface which is inside one of the enlisted mens' quarters. We do not know how these 20' X 20' structures used by the troops were heated, but no doubt they were. This burned surface, crushed brick, and perhaps even Feature 68, may represent the remains of a brick hearth in the center of this structure. Incidental to this discussion but significant in its own right was a 17th-century, 7/64" white clay pipestem which also was found in this pit.

The final area we examined was the Northeast Blockhouse. In order to determine if there were any subsurface remains of this structure, a pit was excavated at N70 E120. The results were beyond our wildest expectations, and we opened N70 E115 and N70 E125 (western half) to pursue these new findings. We found in N70 E120 a fieldstone wall running at a 45° angle to the alignment of the fort (Figs. 15, 16 & 17). This wall, which began at about 2.25' below the surface, was excavated to a depth of 5.25' on the southeast side and 4.58' on the northwest side. From the surface to about the top of the wall was modern fill from the railroad/

industrial/parking lot activities. Below this depth on the northwest side of the wall was rock fill to a depth 4.58' which consisted of fairly large rock boulders and contained practically no artifacts. This rock fill ends abruptly at about the E118 line. This line is about where we had expected to find the west wall of the Blockhouse. West of this line the modern fill is shallower and the pit was excavated to subsoil at a depth of 1.83' below surface. In the northwest corner of E115 was Feature 79, a portion of what appeared to be a circular stain believed to be an edge of a large post hole. This post hole may have held the end post of the north palisade line, or, more likely, the gate post for the palisade. This corresponds to what we expected to find and strengthens the argument that the line at E118 is related to the wall of the Northeast Blockhouse.

Figure 16. The fieldstone wall, Feature 77, of the Halifax I Blockhouse.

On the inside of the fieldstone wall, which will be called a cellar, subsoil was reached at 5.25' along the wall but sloped down and then leveled off at a depth of 6.5' below surface (as shown in Fig. 15). From 2.25', where the modern fill ends, to 4.5' the fill dates to late 18th- early 19th-century. From 4.5' to the bottom of the cellar at 6.5' we excavated some of the finest examples of fort period artifacts yet found on the site. The ceramics from these strata, which included white salt glaze, delft, porcelain and redwares, contained many large pieces. Other artifacts in this assemblage included gunflints, a brass cabinet drawer pull, a decorated brass button, brass straight pins, and a

1749 George II halfpenny. The vast majority of artifacts from these strata can easily be dated to the fort period, but not all artifacts can be so dated. There were a very few pieces of creamware and pearlware in the cellar hole as well. None of these were from the lowest section of the cellar floor, however.

As is often the case in archaeological field work, a significant find was made on the last day. While cleaning the Blockhouse cellar floor for photographs, wood was noticed in the lower area of the floor. Cleaning the surface further, the outline of a wooden frame became evident (Fig. 15). Inside this frame large rocks were beginning to show, suggesting that the rocks were deposited in fill which goes much deeper. We stopped our excavations at this point because there was no time left to adequately excavate this wood-lined feature. With great regret we covered this area with boards and plastic and backfilled it.

Figure 17. Photo showing alignment of Feature 77, with excavator standing on it, in relation to the existing Blockhouse (in background).

The Northeast Blockhouse of Fort Halifax, according to all available records, was originally the center Blockhouse of Winslow's 1754 fort design (Figure 17), which shall be called Halifax I. In 1755 Lithgow redesigned the Fort (Halifax II), using Winslow's central Blockhouse as his Northeast Blockhouse. It has been assumed that this Blockhouse remained in place and Halifax II was constructed around it. The archaeological evidence just discussed suggests that this was not the case, surprisingly, and that the structure built for Halifax I

was rotated 45° before Halifax II was constructed. The fieldstone wall of Feature 77 must be the foundation for the Halifax I Blockhouse. Since this had been Winslow's central structure, such a solid foundation and cellar would not be unreasonable. The wood-lined structure in the cellar might represent the remains of a powder magazine. Halifax I would need a magazine and this would be a good place for it. As suggested, the north/south line at E118 and the post hole of Feature 79 represents evidence of Halifax II.

Apparently, there is a discrepancy between the events of 1754/55 and our interpretation of those events. How does the relationship between Halifax I and Halifax II differ from our understanding of it? Assuming that Halifax I was begun as Winslow designed it, one explanation might be that Lithgow turned Winslow's Blockhouse for some reason. This suggestion is illustrated in Figure 18. However, if Winslow had located the rivers correctly on his plan, Figure 18 shows the southwest Blockhouse of Halifax II in the Sebasticook River. Another possibility is that Halifax I was not begun exactly according to Winslow's plan. One scenario following this hypothesis is that the center Blockhouse of Halifax I was constructed, for some reason, rotated 45° from that drawn by Winslow, and Lithgow turned it to keep the Southwest Blockhouse out of the river when he constructed his fort around it. This idea is illustrated in Figure 19. There is a strong argument for this hypothesis.

It can be seen that the southwest point of the outer, star palisade of Halifax I is within the Southwest Bockhouse of Halifax II. During the 1987/88 excavations two palisade lines joining at a large post hole were uncovered below the location of this Southwest Blockhouse. These features were found in a five foot wide excavation unit which did not expose enough of the palisade lines to get an accurate line of sight to determine their exact angle on convergence. However, it was assumed that the palisade lines and large post hole represented Halifax II. We hypothesized that the palisade was completed to create a quick defensive wall around the site, and at a later date the southwest corner of the palisade was removed and the Blockhouse built.

Upon closer examination of the '87/88 records it appears that these palisade lines could form something less that a 90° angle. In other words, these palisade lines and post hole might represent one of the points of the star shaped outer palisade of Halifax I.

Conclusions and Recommendations

The 1990 field season was the most rewarding and exciting season at Fort Halifax to date and proved that there is still a wealth of information about the Fort remaining below the ground. As is often the case, while the field season answered all of the questions we had set out to answer, many new questions were generated that have yet to be answered.

The excavation of the Fort House cellar was a success. We were able to determine that the Fort House had two cellars, and we located the bases to a vaulted chimney. The southwest corner of the eastern cellar was found to be partially intact, suggesting that there might be other areas where the cellar walls still exist to some extent. Post-Fort activity has been further defined and the railroad spur more accurately located through the study of the stratigraphy in the cellar hole. The only remaining questions concerning this part of the Fort House regards the purpose of the two features, 59 &60, located in the crawl space area. At present the best assumption concerning these two large round features is that they represent prehistoric activity at the site.

Evidence for the Enlisted Mens' Quarters was found, even though it was feared these structures may have been too ephemeral to leave much of a footprint in the highly disturbed soils of the site. This evidence suggests that the barracks had a wooden floor and some form of heat represented by a possible hearth area.

The grand finale of the season was the location of the Northeast Blockhouse of Halifax II superimposed over the central Blockhouse of Halifax I. Not only did we

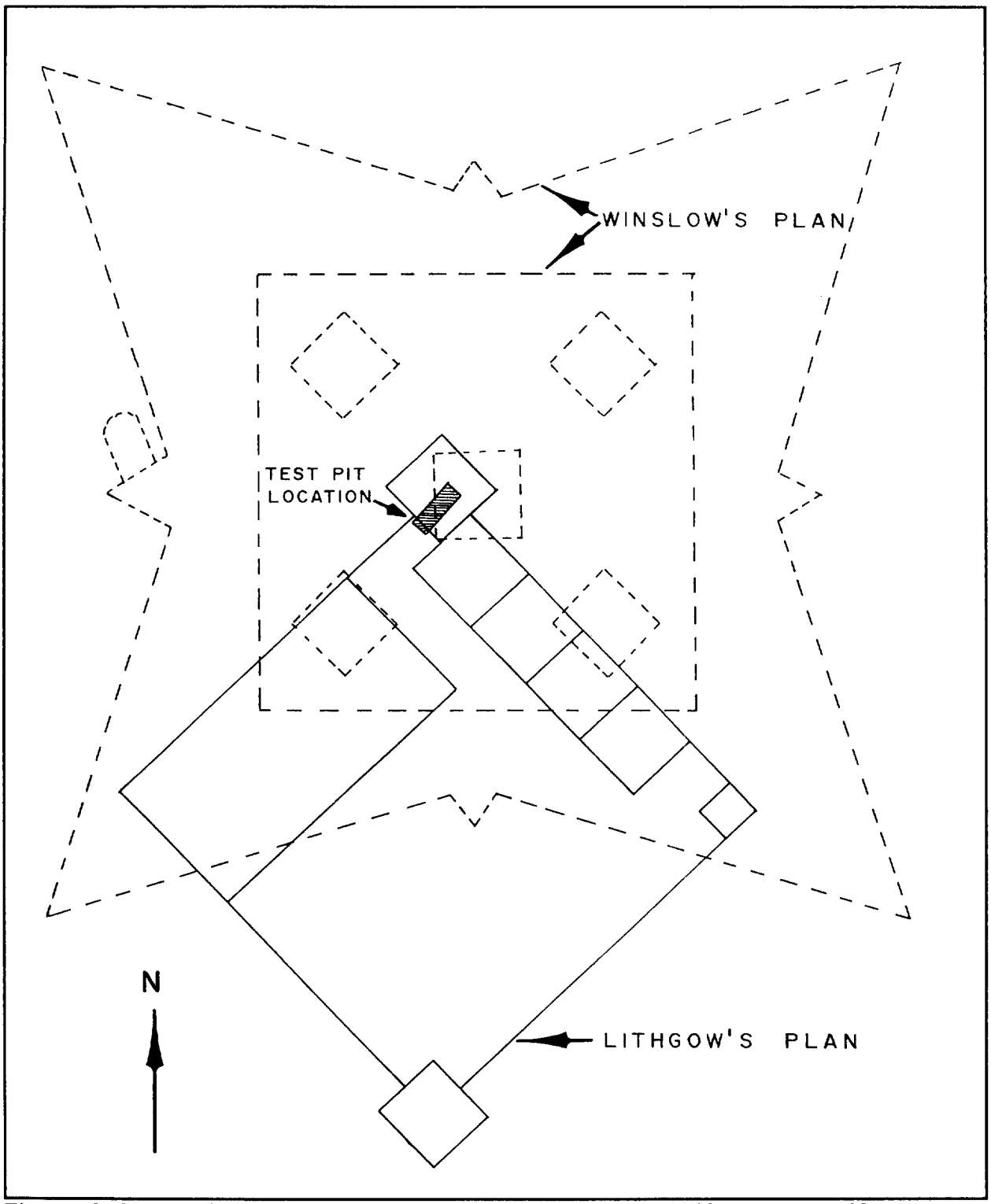

Figure 18. One possible scenario for the relationship between Halifax I and Halifax II.

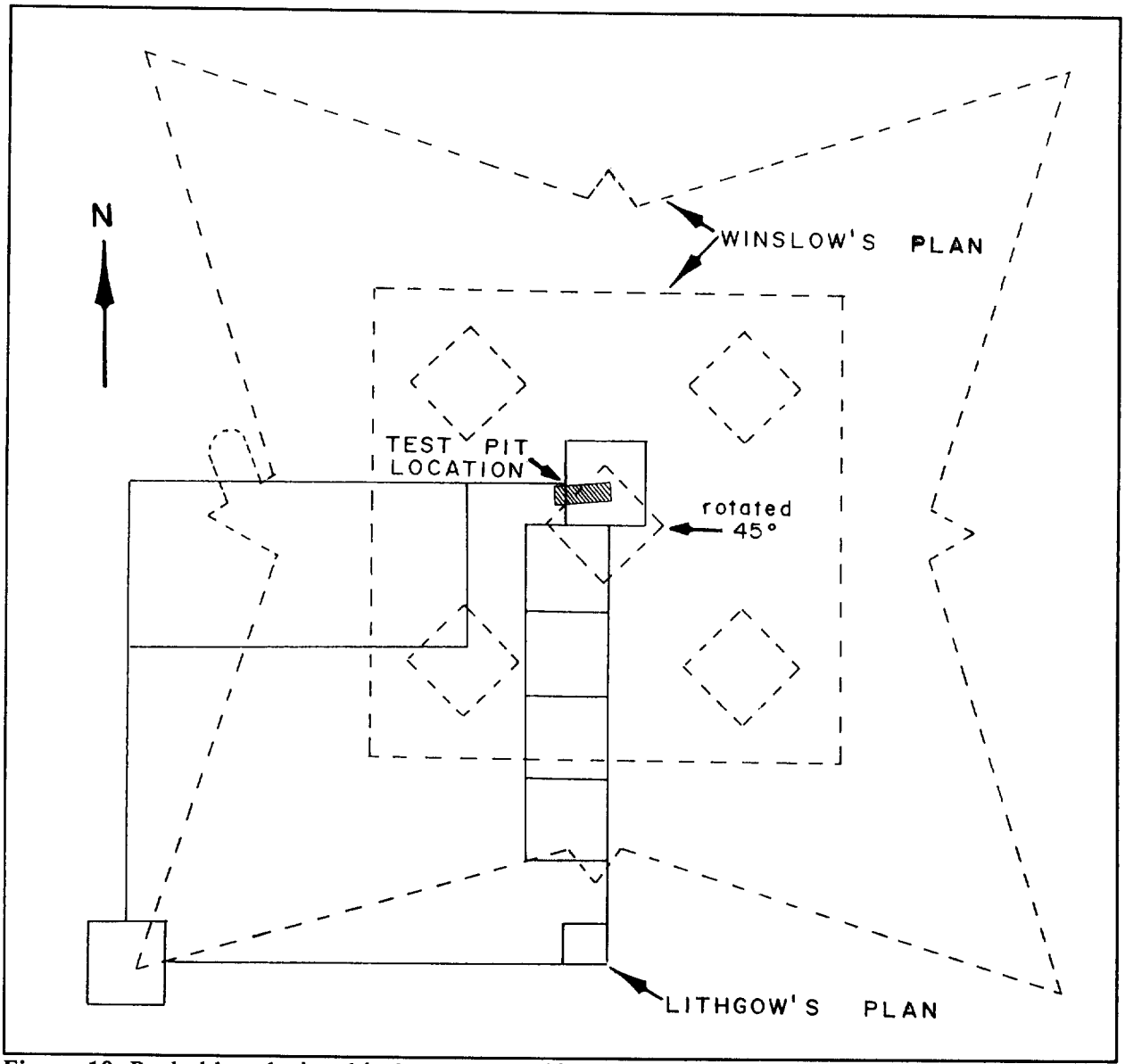

Figure 19. Probable relationship between Halifax I and Halifax II, showing Winslow's center Blockhouse rotated 45° from his plan.

find a fieldstone wall and cellar containing impressive fort period artifacts, but on the last day of the excavations a wood-lined structure, probably a magazine, was discovered on the floor of the cellar. The fill of this wood-lined structure potentially holds some very significant artifacts. These features certainly provide new and important information concerning the Fort, but they also leave many unanswered questions. The exact sequence of events that occurred in this area are yet unknown. For example, why does the rock fill exterior to the Halifax I wall also align with the Halifax II Blockhouse location? Was part of the cellar (and perhaps magazine) of Halifax I used during the Halifax II period? These are only a sample of the new questions that have arisen with these new discoveries.

Finally, the increasing evidence for a

17th-century presence on the site is encouraging. During the first two years of excavations at Fort Halifax no 17th-century evidence was found. But as the excavation progressed to the northern part of the site, 17th-century artifacts began to appear. In '89 a "crusader-and-huntress" pipebowl was found in the cellar hole. This common 17th century pipebowl was the most frequent of all types of pipebowls found at Fort Pentagoet (1670-1674 period) in Castine (Faulkner and Faulkner 1987). More significantly for this discussion, the crusader-and-huntress type of pipebowl was also found at Clarke and Lake's main trading post at Arrowsic (Baker 1985). A c.1650 Clarke and Lake trading post was known to have been built at Taconnet (the Waterville/Winslow Falls area), but exactly where is not known. Also, in 1690, Major Benjamin Church destroyed "an old French fort" which stood on the later site of Fort Halifax (Allen 1931). We know this was not a "French" fort. Was it a palisaded Indian village, perhaps with a French presence, or was it the old Clarke and Lake trading post perhaps taken over by the Indians?

During the 1990 field season, at least five 17th-century white tobacco pipe fragments were found in addition to two 17th-century red clay pipe fragments. These artifacts all date to the last-half of the 17th-century. As these artifacts began appearing it was intended to test the park lawn north of the Fort site, but time ran out before this goal could be accomplished.

It is the desire at the Maine Historic Preservation Commission to publish a definitive book on the history and historic and prehistoric archaeology of Fort Halifax. With the introduction of so many significant, unanswered questions about the site, the ideal situation would be to conduct another field season at the site similar to the 1990 season. This future season would enable us to answer important questions concerning the Northeast Blockhouse, and the sequence of events that occurred here. While this area was opened, information on the Fort gate, supposedly between this Blockhouse and the Fort House, could also be obtained. Test units to the north of the Fort could explore the extent of the 17th-century occupation at the site. More information about these topics would certainly be desirable in any comprehensive book on Fort Halifax and its site, and certainly necessary for any accurate reconstruction and representation of the Fort and its history.

REFERENCES

Allen, Charles Edwin
1931 *History of Dresden, Maine.* Reprinted edition, Jennie G. Everson and Eleanor L. Everson, Dresden, 1977.

Baker, Emerson W.
1985 *The Clarke and Lake Company: The Historical Archaeology of a Seventeenth-century Maine Settlement.* Occasional Publications in Maine Archaeology 4, Maine Historic Preservation Commission, Augusta.

Faulkner, Alaric, and Gretchen Faulkner
1987 *The French at Pentagoet 1635-1674: An Archaeological Portrait of the Acadian Frontier.* Occasional Publications in Maine Archaeology 5, Maine Historic Preservation Commission, Augusta, and Special Publication of the New Brunswick Museum, St. John.

Fisher, Carleton Edward
1972 *History of Fort Halifax.* Carleton E. Fisher, Winthrop, Maine.

Paine, Timothy Otis
1852 "Fort Halifax." *Waterville Mail*, November 6, 1852.

THE DENNISON SITE: A DEEPLY STRATIFIED SITE ON THE KENNEBEC RIVER

James B. Petersen

INTRODUCTION

Archaeological investigations at the Dennison site (ME 69-22) on the Kennebec River in 1988 and 1989 have produced highly significant evidence of a deeply stratified sequence of aboriginal occupations likely spanning much of the Archaic and Woodland (Ceramic) periods of prehistory. As such, the Dennison site is one of the most scientifically valuable sites yet discovered in Maine and much of the surrounding region of the far Northeast. Although somewhat preliminary, this brief report is intended to document some of the prominent characteristics of the Dennison site which make it significant for the study and reconstruction of the still poorly known prehistoric record in Maine and to suggest some possibly fruitful avenues for future research.

Research at the Dennison site was undertaken in 1988 and 1989 as the direct result of the development of a fish hatchery by the Kennebec Aquaculture Company (KAC) on property leased from Central Maine Power Company (CMP). A combination of consulting archaeology and volunteer work was done in advance of disturbance of a substantial portion of the site for the proposed Dennison hatchery. In 1989, the Maine Historic Preservation Commission (MHPC) awarded the UMF Archaeology Research Center (ARC) a small grant for continued processing of the rather voluminous remains which had been salvaged, the first absolute dating of the site, and limited additional field work, all of which are reported here.

LOCATION AND SETTING

The Dennison site is located on the western bank of the Kennebec River approximately 800 meters (0.5 mi) downstream from Caratunk Falls and Williams Dam on property owned by CMP (Figure 1); in fact, the site is located within the boundaries of the Williams Dam Hydroelectric Project. The site lies within the town of Embden in Somerset County, Maine, immediately to the east of an old abandoned railroad bed which parallels the Kennebec River and provides one access point to the facilities associated with Williams Dam. When the site was first discovered in 1988, the railroad bed was the only major disturbance in the entire area and the site was a forest-covered terrace adjacent to a partially infilled river channel. Farther east away from the site on the other side of the old channel lies a narrow, eroding terrace which bounds the modern channel of the Kennebec River (Figure 2).

The modern main channel of the Kennebec River was straightened when Williams Dam was constructed in the 1930s. This undoubtedly affected the terrace beyond the site which was apparently largely cut away; the old channel between the two terraces was bridged with fill, likely to provide access to the terrace adjacent to the modern channel. Still earlier modification of the local landscape occurred when the railroad was constructed, presumably in the nineteenth century. The north-south trending railroad bed truncated the arcuate curvature of the terrace where the Dennison site is situated and

Maine Archaeological Society Bulletin 31:2:27-54 (1991)

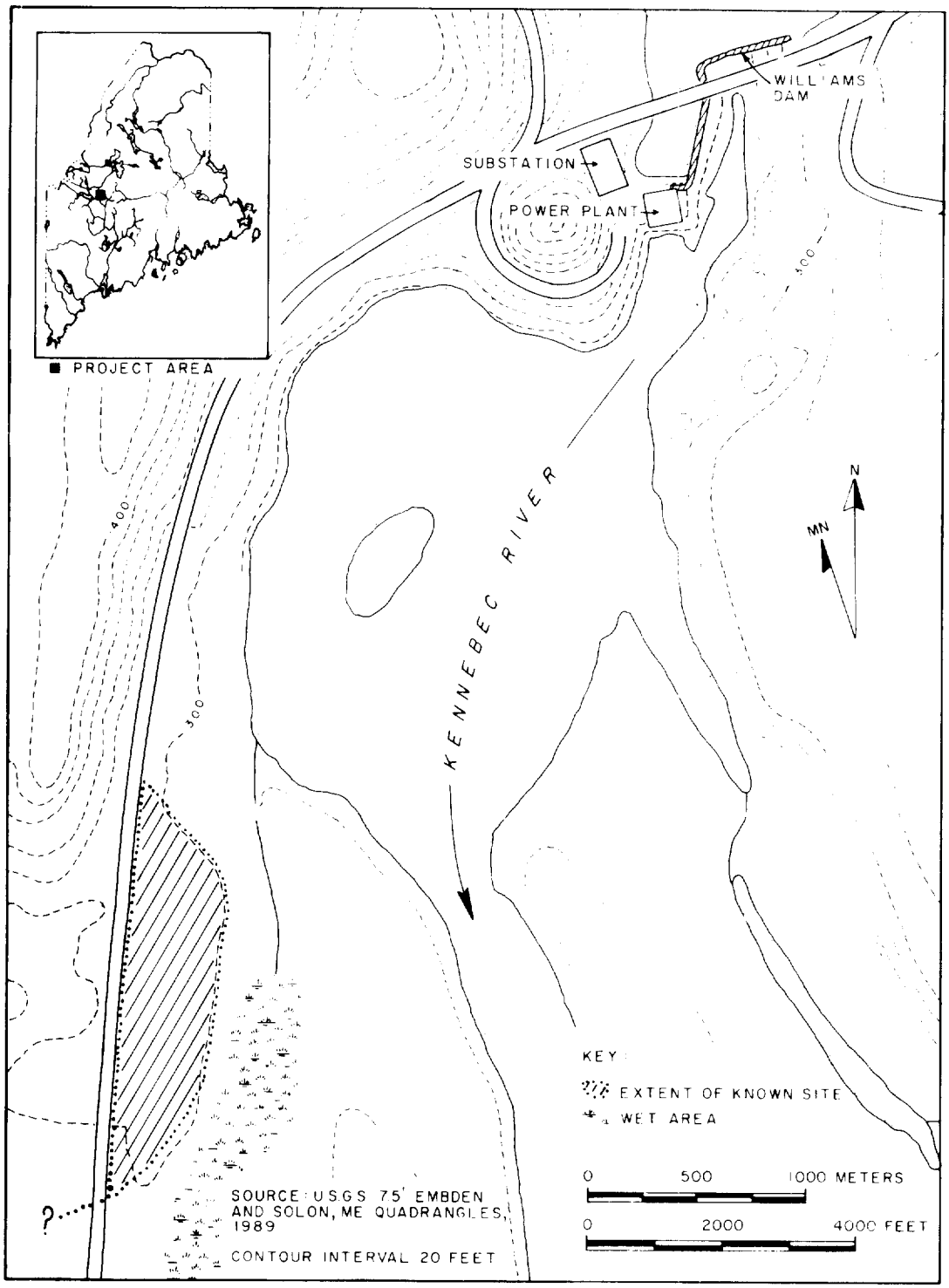

Figure 1. Location of the Dennison site (ME 69-22) in the Kennebec River drainage basin of central Maine. Inset shows location of the Williams Project area.

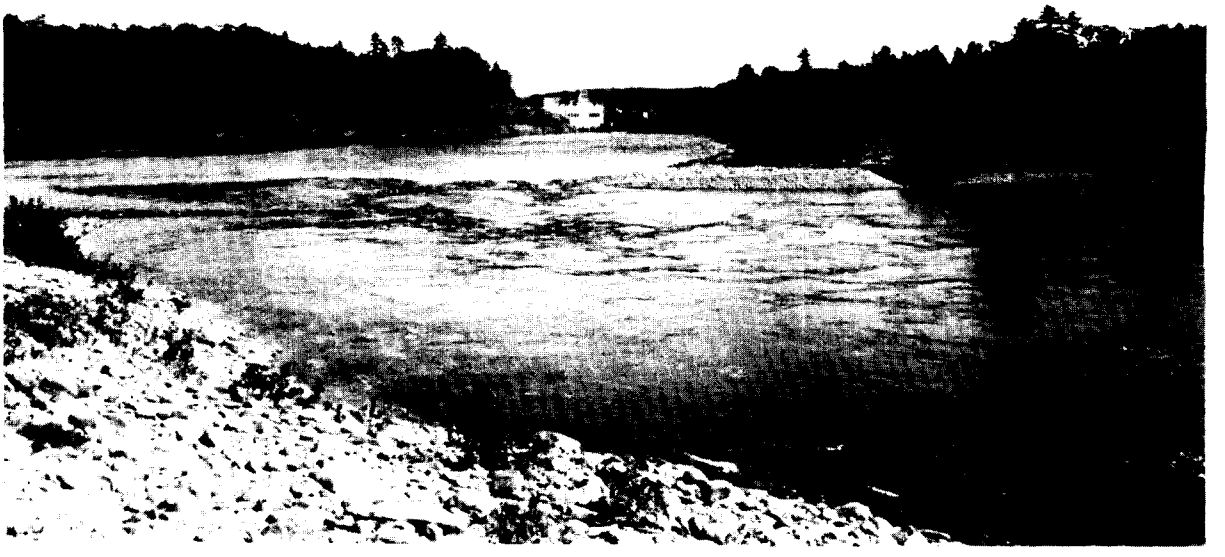

Figure 2. General view of Kennebec River adjacent to Dennison Hatchery site, August, 1988. Note Williams Dam in far distance.

separated it from comparable, somewhat lower terrain to the west of the bed which likely represents another old river channel. A notable glacial esker rises steeply above the landscape to the west of the second old channel and forms the western boundary of the river's floodplain. The site does not extend west of the railroad bed, at least not at present on the basis of the limited field work there prior to its disturbance. However, it does apparently cover the entire terrace east of the bed; prehistoric artifacts were surface collected as close as seven meters from the railroad bed. Thus, as currently known, the site covers an area approximately 250 meters long and maximally 80 meters wide; it likely covers an area of about 10,000-12,000 square meters and may contain a total volume of 15,000-25,000 cubic meters of cultural deposits.

As discovered in 1988 and surviving today beyond the hatchery facilities, the Dennison site is covered with a relatively mature mixed forest consisting of red maple, beech, white birch, oaks and fir. The site surface is slightly sloping (1-3 degrees) and is covered with a thick mat of leaves and needles which prevents surface collection except where modern logging activity has disturbed the upper sediments and exposed cultural remains. The soils of the site terrace are classified as Hadley series by the USDA Soil Conservation Service (Arno et al. 1972), which clearly reflects the terrace's alluvial origin.

The most notable characteristic of the site setting is its proximity to Caratunk Falls, now partially covered by Williams

Dam; it lies on the first substantially level ground downstream from the falls and a large pool below them on the western side of the Kennebec River. In broader terms, the local area is situated on the boundary between the Central Highlands and Coastal Lowlands physiographic zones (e.g., Hanson and Caldwell 1989:149-151), and reflects this intermediate position in terms of local weather and flora and fauna.

HISTORY OF INVESTIGATIONS

As noted above, the Dennison site was initially discovered in August, 1988, when Jim Petersen, Director, and Tom Baker, then Assistant Director of the UMF Archaeology Research Center, responded to a request for consultation with representatives of the Kennebec Aquaculture Company. As reported in greater detail elsewhere (Petersen 1989), it was immediately obvious that a substantial cultural resource management problem existed in that prehistoric cultural remains were immediately evident over a large portion of the project area as a result of recent logging activities. CMP had permitted logging all across the broader area earlier in 1988, and while few trees were cut directly on the site area, skidder roads had disturbed the upper portion of the cultural deposits (Figure 3). An even more obvious problem was the fact that KAC planned to begin construction of the proposed hatchery facilities within 12 days of the date when the UMF archaeologists were first contacted, and most of the development was slated directly for the perceived site area to the east of the old railroad bed. Consequently, an archaeological phase I survey of the area was recommended to the KAC.

Figure 3. Skidder road disturbance on levee crest at the Dennison site, August, 1988.

Figure 4. Overview of salvage excavation at the Dennison site, facing west, October, 1988. Note excavation units N200 E104 and N201 E104 in foreground.

Three days after the first inspection (and a second visit by a larger group of UMF archaeologists), a limited phase I survey, directed by Robert Birnie and Patricia Baker, was conducted in the portion of the project area where the disturbance would have been very substantial under the original plans. A total of 16 0.5 m x 0.5 m test pits were excavated along five sampling transects at 10 m and 20 m intervals; two of these were subsequently expanded slightly to investigate several possible features and this work ultimately covered an area of about 5.75 square meters and a volume of 4.3 cubic meters.

Five cultural features were ultimately recognized at various depths below the ground surface and the high likelihood of well-separated stratified deposits was recognized, with cultural deposits recognizable as deep as approximately 120 cm below the ground surface, the depth of the deepest excavated test pits. Artifact concentrations were identified, particularly in the 20-30 cm level, 50-60 cm level and 70-80 cm level. Remarkably, no evidence of historic cultivation was observed nor were any historic remains encountered during the excavation, signifying that even the uppermost deposits, almost certainly attributable to the Woodland (Ceramic) period, have not been substantially disturbed. A total of about 1,770 lithic flakes and tools, fire-cracked rocks and aboriginal ceramics were recovered from subsurface contexts, along with a lesser number of ecofacts (i.e., calcined bones and carbonized floral remains).

In addition, a substantial surface collec-

Figure 5. Overview of UMF archaeologists salvaging cultural feature exposed in large construction trench, facing west, January, 1989.

tion was undertaken across the site in those areas previously and concurrently disturbed by the logging skidders during the phase I field work. A 2.0 m x 2.0 m grid was emplaced over the disturbed areas and the areas were surface collected by unit; a total of about 308 square meters were covered by the surface collection and approximately 300 additional artifacts were recovered. The surface collection revealed that the skidder disturbance was variably deep, but typically extended to about 30 cm below the prior surface.

After completion of the two days of phase I field work, a somewhat detailed report was prepared and submitted within a few weeks (Baker and Baker 1988). The phase I report recommended that the hatchery facilities be moved west of the old railroad bed, thereby minimizing disturbance to the cultural deposits to the east of the bed. As noted above, no work was done to the west of the railroad bed given that it lies outside of the FERC permit area related to Williams Dam and was therefore exempted from study by the MHPC. While there may or may not have been site deposits present there, it clearly was a less sensitive area given the topography and greater distance from the river.

In any case, the recommendation to move the proposed facilities was followed by KAC, but unfortunately they still needed to emplace an outflow/inflow pipe to the river directly through the site area. As reported verbally, an area approximately 45-50 meters long and about 1-2 meters wide would be disturbed, but other communication estab-

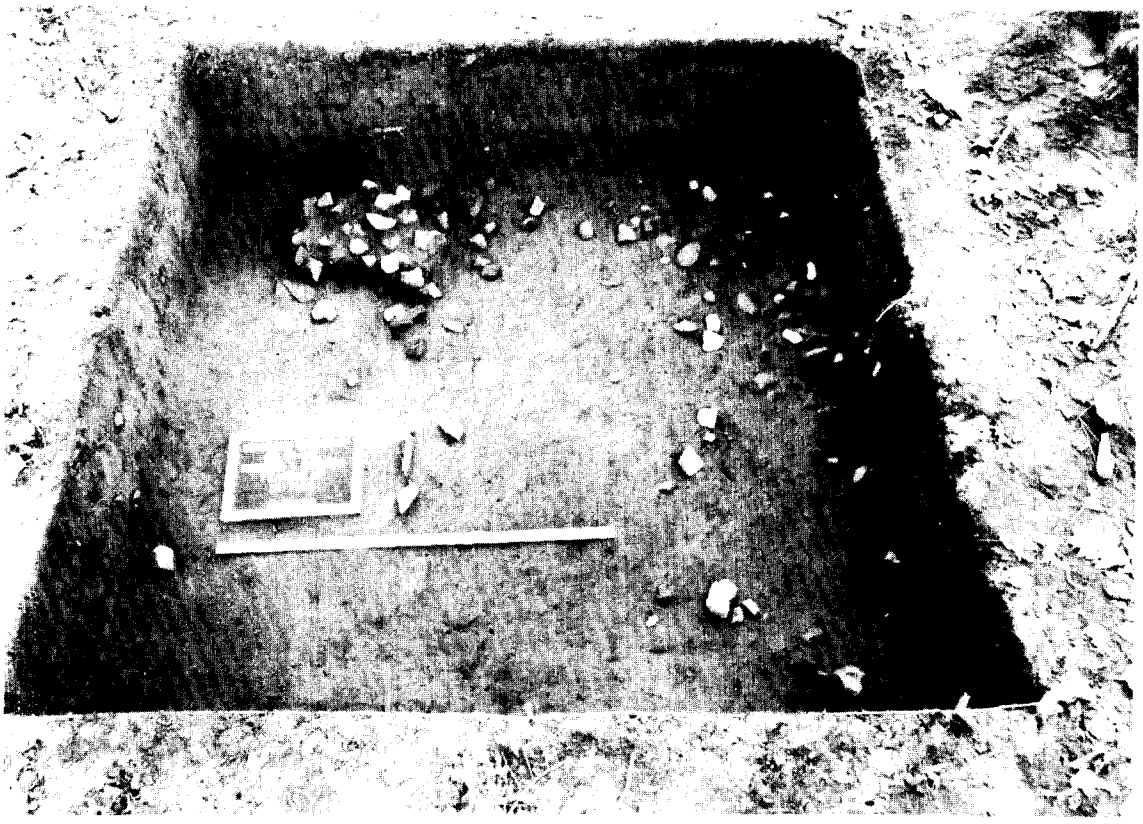

Figure 6. Plan view of feature 19 at depth of approximately 40 cm below the ground surface in excavation units N199 E85 and N200 E85.

lished a possible area as much as 4.5 meters wide which would be disturbed. The MHPC recommended very limited phase II testing/ data recovery work and UMF was contracted to do this limited salvage work for a total of 20 person days of field work; no laboratory time was included in the budget. Ten days of field work and more than 100 person days were ultimately expended in this salvage work by various volunteers from UMF and elsewhere.

Excavations undertaken in late October and early November, 1988, consisted of nine 2.0 m x 1.0 m test units which were excavated generally to 140 cm below the ground surface, although one unit penetrated to 240 cm below the ground surface; a total area of 18 square meters and a volume of 28.8 cubic meters were covered during this period (Figure 4). The field work was directed by Robert Birnie. Six excavation units were initially placed more or less along the full length of the centerline of the proposed outflow/inflow pipe on the N200 grid line at 10 meter intervals in all cases, except one where disturbance dictated otherwise (i.e, N200 E55, N200 E65, N200 E75, N200 E85, N200 E95 and N200 E104). Three additional units were later added to accommodate significant finds, etc., through expansion of existing units (i.e., N199 E85 and N201 E104) and excavation near promising finds (i.e., N200 E87).

One excavation unit towards the river, N200 E95, was designated a "deep hole" and therefore taken down well below where the cultural deposits apparently terminated in the others to a depth of about 240 cm, as

noted above. Cultural remains were found as deep as 220-230 cm below the surface in this unit and so, some of the other units may not have fully penetrated the site deposits. As many as 35 additional features were identified during this work, but two or three may have been noncultural. Copious artifacts and ecofacts, including well over 7,500 artifacts and probably a greater number of ecofacts, were also recovered.

As part of the negotiations with KAC, it was agreed that UMF archaeologists would be given the opportunity to inspect the backhoe trench for the inflow/outflow pipe as it was actually excavated to recover any additional cultural remains which might be exposed. This work was finally scheduled in January, 1989, with a crew of UMF volunteers in attendance. The archaeologists were somewhat disappointed by the larger than expected size of the needed disturbance, approximately 360-400 square meters, and especially by the fact that KAC and the construction crew ultimately forbade them to enter the trench to salvage exposed features; nonetheless, seven more features were exposed (Figure 5).

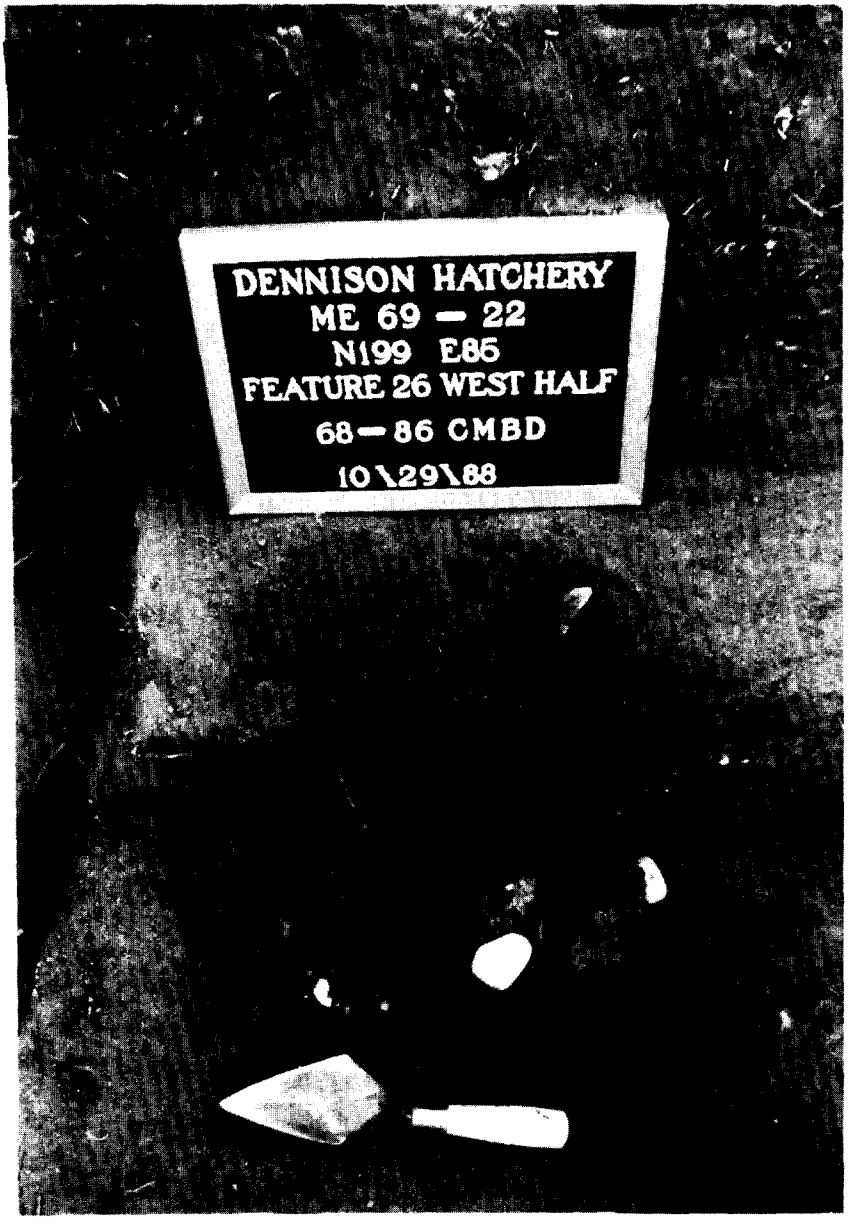

Figure 7. Plan view of feature 26 at depth of 68-86 cm below the ground surface at the Dennison site.

In 1989, the MHPC awarded the UMF Archaeology Research Center a grant to help support analysis of the cultural remains and related provenience information. Although the large majority of this grant was expended in the processing and analysis of the previously collected samples, three radiocarbon dates were also processed, and limited field work was done by Tom and Pat Baker with a group of field school and volunteer workers in July, 1989. Specifically, they partially investigated the feature 5 area with a single 2.0 m x 1.0 m unit where an intriguing rock construction had been suspected after the

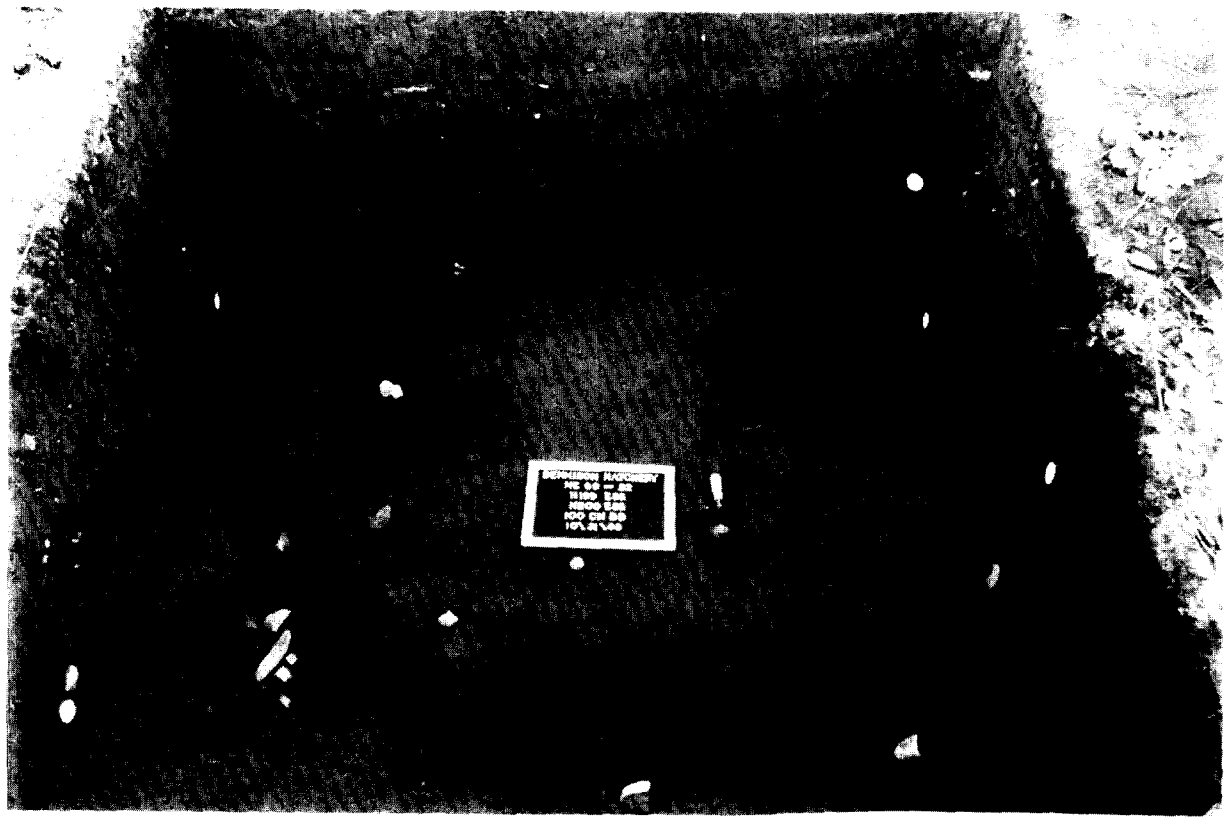

Figure 8. Plan view of excavation units N199 E85 and N200 E85 at approximately 90 cm below the ground surface at the Dennison site.

phase I survey; it proved to be some sort of manuport with no other obvious significance. However, three other features were identified and a total area of 2.0 square meters and volume of 1.8 cubic meters were covered.

In sum, a total area of about 25.75 square meters and a volume of about 33.9 cubic meters has been tested at the Dennison site to date. A total of 47 or more unequivocal cultural features have been identified in this area and a much larger area has been at least superficially examined through surface collection. Although cultural remains seem most concentrated in the upper 100-130 cm of the deposits, they apparently extend considerably deeper in at least the riverside portion of the site. Selected information about past research at the site is presented in greater detail below prior to a general discussion of its significance.

CULTURAL FEATURES AND STRATIGRAPHY

The cultural features and alluvial stratigraphy at the Dennison site are perhaps its most distinguishing characteristics and provide a rich cultural and environmental record of the Holocene epoch in Maine. Although not completely unraveled thus far, the numerous cultural features and their unusually well-separated contexts in the alluvial stratigraphy will be an important component of future research at the site.

The 47(+) features seem to be largely hearths with or without associated fire-cracked concentrations (Figures 6-8); a few possible post molds may be represented as

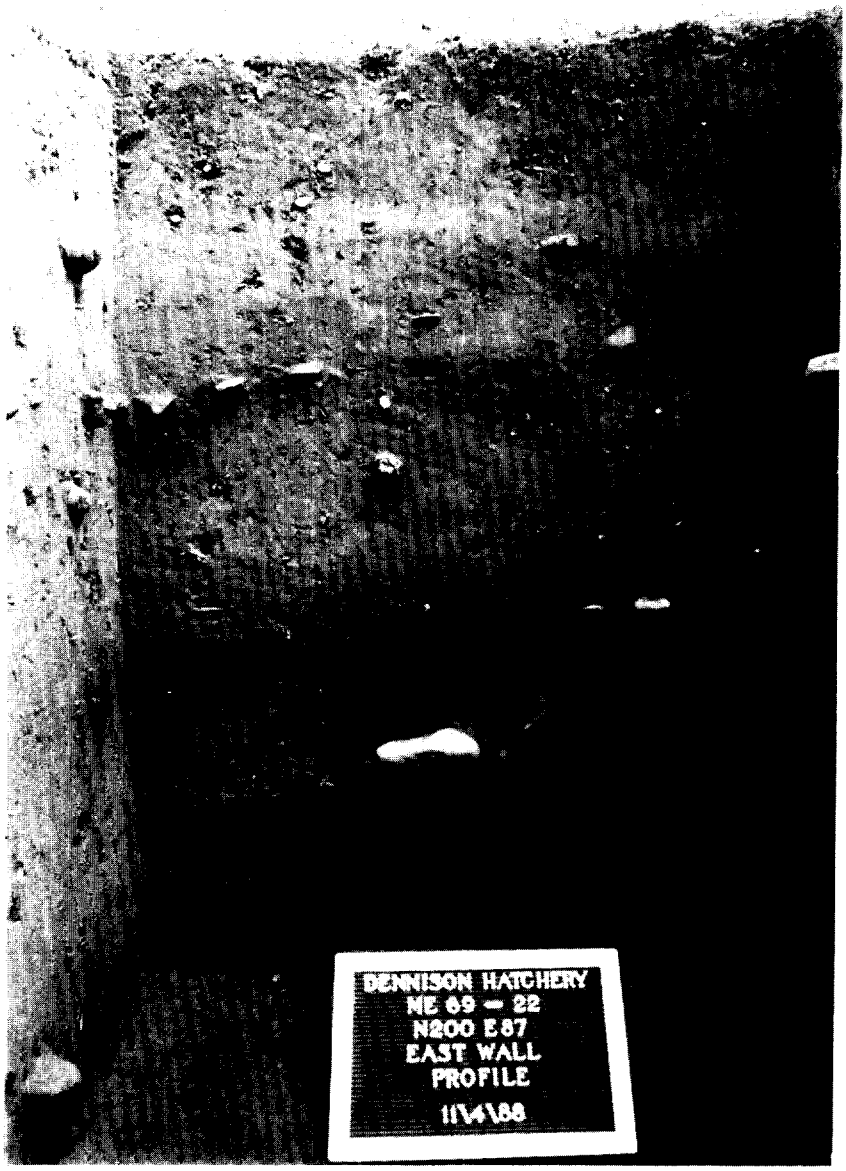

Figure 9. East wall profile of excavation unit N200 E87 at the Dennison site. Note feature 28 at approximately 50-60 cm, feature 36 and related paleosol at approximately 85-90 cm and floor at approximately 140 cm below the ground surface.

well. The features are typically relatively thin, flat entities, indicating little formal preparation beyond shallow scooping out of the then current surface. None seem to have been pits of any substantial size, although some deeper features may also be present on the basis of other riverine sites in the Penobscot River drainage (e.g., Petersen 1991; Petersen and Sanger 1986). Moreover, the relatively undisturbed nature of most features clearly establishes the good context of the cultural deposits in general.

Thus, the available sample of features provides evidence of repeated, long-term usage of the site as a residential location, presumably for primarily short-term occupational episodes on the basis of the actual content and character of each feature. They are not particularly dense deposits in most cases, but a few exceptions, such as features 18 and 19 (Figure 6), seem evident. In these and some other cases, the features may represent living floors and/or activity areas which remain incompletely exposed (Figure 8). Other features are phenomenally discrete and pristine, and almost assuredly are very short-term single episode deposits (Figure 7).

The features not only provide discrete entities for reconstruction of on-site activities of various sorts, but when taken with the somewhat complex alluvial stratigraphy will ultimately enable subdivision of the long cultural record (Figures 9-12). The site stratigraphy seems to consist of somewhat localized sediment deposits, making site-wide correlation difficult without excavation of larger areas. The sediments are

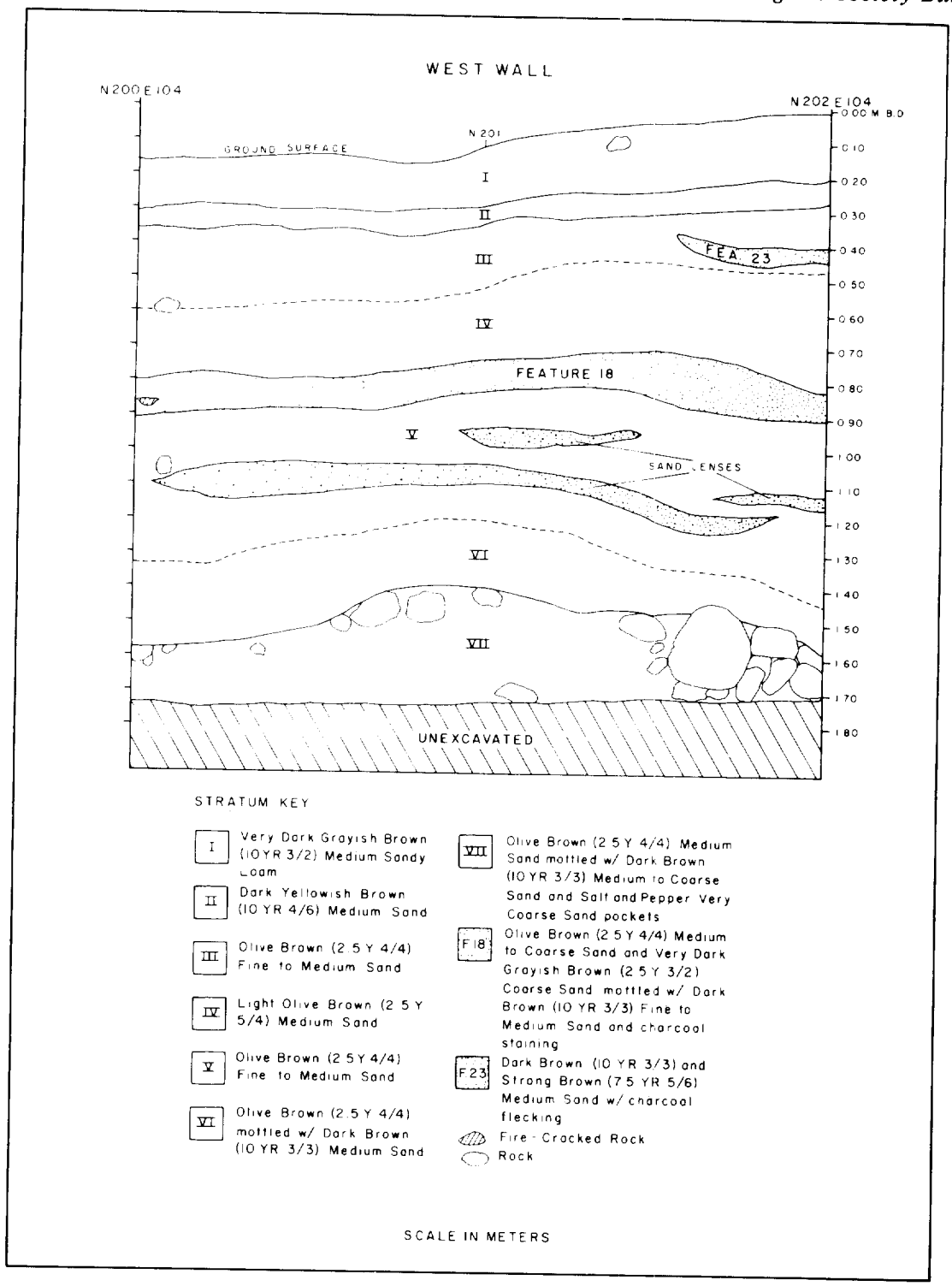

Figure 10. West wall profile of excavation units N200 E104 and N201 E104 at the Dennison site.

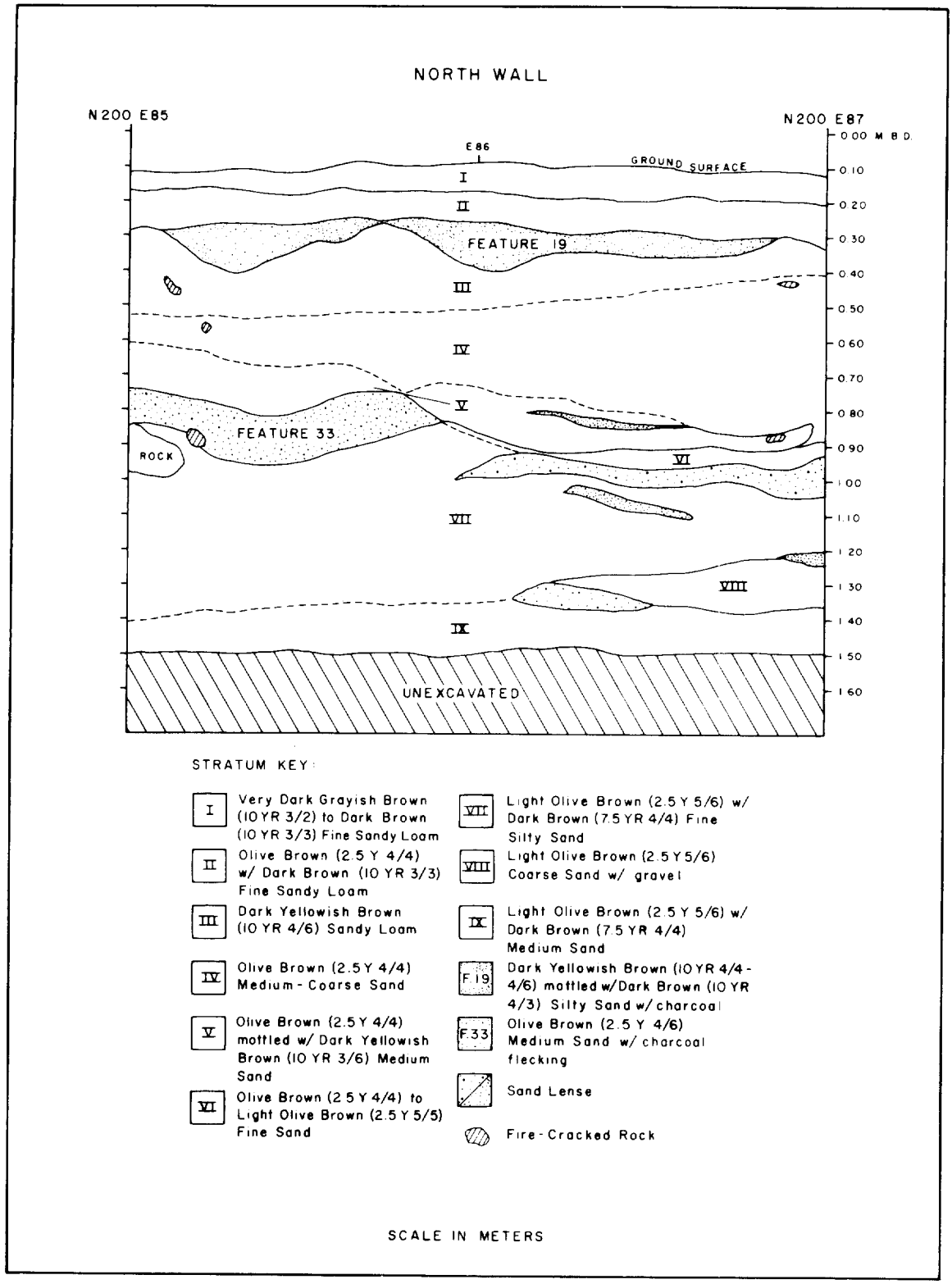

Figure 11. North wall profile of excavation unit N200 E85 at the Dennison site.

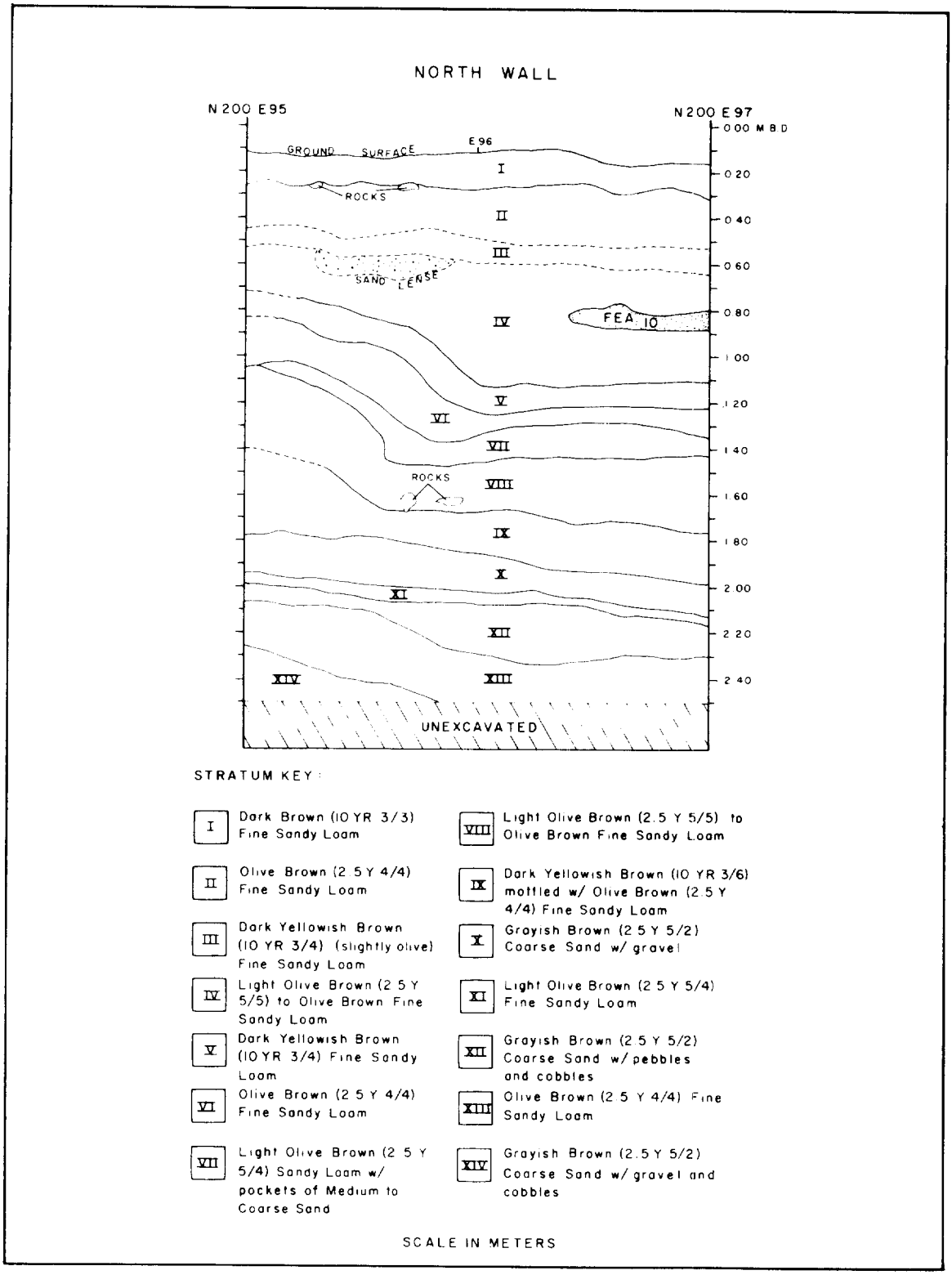

Figure 12. North wall profile of excavation unit N200 E95 at the Dennison site.

sandy in all cases, ranging from medium and coarse sands in some of the deeper deposits to sandy loams with some silt towards the top of the sediment pile; this is not an unexpected situation given the typical evolution of many floodplain terraces. Although impenetrable sediments were not encountered even in the "deep hole," increased pebbles and gravels were noted below approximately 150-200 cm; thus, the full depth of the sediments is unknown, but it may be not much deeper than 250-300 cm below the modern surface. Three or four major macrostrata are likely definable at the site (e.g., Figure 9), but the presence of numerous microstrata make absolute definition of these difficult at the present time (e.g., Figure 12)

RADIOCARBON DATING

Three radiocarbon dates have been obtained for the Dennison site using samples obtained from the phase II testing/data recovery work. Two dates were obtained for relatively rich features 18 and 19 in the upper portion of the occupational sequence because of the likelihood that they could be accurately dated on the basis of the carbonized floral samples available from each. Not unexpectedly, both returned dates attributable to the later portion of the Late Archaic period.

Feature 18 in excavation units N200 E104 and N201 E104 was a notable fire-cracked rock concentration with many associated lithic artifacts. Located generally at about 70-80 cm below the surface, it produced a date of 3660 ± 130 B.P., or 1710 B.C. (Beta-36721). Feature 19 was generally comparable, but had a more notable associated oxidized stain. Located at about 40-60 cm below the surface in units N199 E85 and N200 E85, feature 19 produced a date of 3320 ± 80 B.P., or 1370 B.C. (Beta-36722). Both features were associated with artifacts indicative of the Late Archaic period Susquehanna tradition and the dates match other such dates quite well (e.g., Borstel 1982; Petersen 1991; Petersen and Putnam 1986).

The third radiocarbon date was meant to date the more or less earliest possible cultural occupation and the nature of the deeper, coarser alluviation. Although originally designated as feature 27 in the 230-240 cm level in unit N200 E95, it was recognized by the excavators as a possible root burn. However, it seemed present below several capping lenses of coarser material and might have provided some estimate of the age of the surrounding sediments. It was a small sample and thus had to be submitted as a bulk carbon date; it returned a date of 5160 ± 100 B.P., or 3210 B.C., which is considered unreliable given its relatively great depth in comparison with almost certainly reliable dates for features 18 and 19.

CULTURAL REMAINS

Most of the cultural remains from the various episodes of work at the Dennison site have been initially processed, but much analysis work remains to be done. Given time and funding constraints, the artifacts recovered from all field excavation using 6.4 mm (1/4 in) mesh screen have been processed and analyzed; the phase I materials have been reported previously (Baker and Baker 1988) and the 1988 phase II and 1989 supplemental testing materials are largely reported herein (Tables 1-4). Relatively few of the ecofacts, including copious floral and faunal remains, have yet been analyzed, but the carbonized floral remains analyzed prior to submission of samples for radiocarbon dating demonstrate the promise of having such analyses done in the future. Likewise, analysis of the calcined bone samples will be very important for reconstruction of subsistence activities.

All of the lithic artifacts except the fire-cracked rocks have been subjected to a raw material analysis, and the lithic tools and cores have been more completely studied (Tables 1 and 2). All fire-cracked rocks have been processed and inventoried (Table 2), but only two units in particular have been analyzed for raw materials (Table 3). The aboriginal ceramics have been fully studied as well (Table 4). Brief discussion of some of these artifacts is important in the present context in terms of their cultural

Table 1. Aboriginal Lithic Tools and Cores from the Dennison Site by Preliminary Lithic Category, Raw Material and Provenience.

PROVENIENCE UNIT LEVEL	ARTIFACT CATEGORY												TOTAL
	FLAKED STONE										GROUND STONE		
	Biface	Biface Scraper	Chopper	Core	Edged Blank	Modified Flake	Projectile Point	Uniface	Notched Tool	Anvil	Hammerstone		
	CH FL QZ RH UN	CH	UN	RH	RH	FL RH	CH FL RH	CH QZ RH	SH	UN	QZ RH UN		
N199 E75													
86-97									6				6
90-100						1							1
N199 E85													
30-40										1			1
40-50							1						1
50-60		1		1				1					3
60-70	1			1									2
110-120				1									1
N200 E65													
40-50						1							1
50-60											1		1
70-80	1												1
100-110				1									1
N200 E74													
91-106											1		1
N200 E75													
50-60			1										1
60-70							1						1
90-100						1							1
N200 E85													
28-29	1												1
40-50	2				1	1	1	1					6
50-60				2		1							3
N200 E87													
30-40											1		1
40-50				1			1				1		3
60-70	1												1
64-65							1						1
N200 E95													
20-30	1												1
30-40	1												1
N200 E104													
10-20								1					1
70-80	1												1
80-90	1			1		1							3
90-100				1									1
110-120	1												1
N201 E104													
10-20	1							1					2
20-30	1						1						2
30-40	1					1							2
80-90	1 1					1							3
N218 E72													
21B	1												1
B10						1							1
TOTAL	0 1 2 12 1	1	1	9	2	1 8	1 1 4	1 1 2	12	2	1 2 1		59

MATERIAL KEY:

CH= chert QZ= quartz SH= shale
FL= felsite RH= rhyolite UN= unknown

Dennison Site

Table 2. Aboriginal Lithic Flakes and Fire-Cracked Rocks from the Dennison Site by Raw Material and Provenience. Table is continued on 3 subsequent pages.

PROVENIENCE UNIT LEVEL	LITHIC CATEGORY															
	LITHIC FLAKES														FIRE-CRACKED ROCK	
	CHERT		FELSITE		QUARTZ		QUARTZITE		RHYOLITE		OTHER		TOTAL FLAKES			
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
N199 E75																
86-97									3	6.35			3	6.35	11	74.25
90-102					1	0.30							1	0.30	17	243.50
Subtotal	0	0.00	0	0.00	1	0.30	0	0.00	3	6.35	0	0.00	4	6.65	28	317.75
N199 E85																
10-20									1	0.10			1	0.10	3	38.00
20-30									15	9.35	1	0.20	16	9.55	13	3287.90
30-40	2	0.20			3	3.30	1	0.10	47	23.90	1	0.60	54	28.10	51	7565.15
40-50	1	0.05							14	3.05			15	3.10	24	932.65
50-60	15	2.30	1	0.15	3	1.80			168	287.15	1	0.75	188	292.15	464	12908.10
60-70	3	0.40			1	0.30			119	189.00			123	189.70	575	11474.40
68-80									2	0.20			2	0.20	6	13.50
70-80									5	217.57			5	217.57	41	1539.30
77-86									1	0.50			1	0.50		
77-90															19	1387.30
80-90									4	8.85			4	8.85	34	4873.20
90-100									2	1.00			2	1.00	30	828.40
100-110									9	26.05			9	26.05	8	432.20
110-120									1	0.10			1	0.10	2	262.00
120-130									1	5.05			1	5.05	1	27.80
Subtotal	21	2.95	1	0.15	7	5.40	1	0.10	389	771.87	3	1.55	422	782.02	1271	45569.90
N200 E55																
20-30									4	3.85			4	3.85	2	89.45
30-40									62	93.95			62	93.95	47	2899.05
40-50									12	89.25			12	89.25	14	796.70
50-60									2	3.35			2	3.35	7	338.80
60-70									3	0.80	2	0.80	5	1.60	14	2767.20
70-80															3	151.55
90-100									1	0.35			1	0.35		
Subtotal	0	0.00	0	0.00	0	0.00	0	0.00	84	191.55	2	0.80	86	192.35	87	7042.75
N200 E65																
10-20															14	338.55
20-30															42	1818.40
30-40									10	4.30			10	4.30	17	1312.70
40-50									25	164.70			25	164.70	166	3353.75
50-60									19	56.55			19	56.55	105	5007.75
60-70									4	6.10			4	6.10	33	2110.90
70-80									40	22.00			40	22.00	57	3088.85
80-90									26	102.85			26	102.85	30	1036.90
90-100									4	13.75			4	13.75	3	145.20
100-110									1	0.55			1	0.55	4	79.85
110-120															1	257.00
120-130															1	35.20
Subtotal	0	0.00	0	0.00	0	0.00	0	0.00	129	370.80	0	0.00	129	370.80	473	18585.05
N200 E74																
91-106					1	0.45			15	26.55			16	27.00	66	1561.50
92-109									14	47.95			14	47.95	50	772.50
Subtotal	0	0.00	0	0.00	1	0.45	0	0.00	29	74.50	0	0.00	30	74.95	116	2334.00

Table 2 continued.

PROVENIENCE UNIT LEVEL	LITHIC CATEGORY															
	LITHIC FLAKES														FIRE-CRACKED ROCK	
	CHERT		FELSITE		QUARTZ		QUARTZITE		RHYOLITE		OTHER		TOTAL FLAKES			
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
N200 E75																
10-20	1	0.55							4	1.25			5	1.80	7	1413.00
20-30	1	0.05							5	2.20			6	2.25	1	56.75
30-40									2	5.55			2	5.55	4	193.30
40-50									4	1.60			4	1.60	4	241.40
50-60					2	14.15			36	128.45			38	142.60	25	1002.95
60-70									18	10.35			18	10.35	38	1741.95
70-80									17	69.60			17	69.60	17	737.30
80-90									15	63.00			15	63.00	61	1030.85
90-100					2	0.75			34	72.50			36	73.25	188	5123.85
100-110					1	0.40			4	1.45			5	1.85	45	1780.05
110-120									3	3.10			3	3.10		
Subtotal	2	0.60	0	0.00	5	15.30	0	0.00	142	359.05	0	0.00	149	374.95	390	13321.40
N200 E85																
10-20									4	1.40			4	1.40	6	139.15
20-30			1	42.70					25	43.25			26	85.95	21	705.00
30-40	1	0.10							16	5.85	1	0.25	18	6.20	78	1478.95
40-50	7	1.20							142	336.55			149	337.75	193	12467.10
49-53									1	17.70			1	17.70		
50-60	1	0.20					1	1.30	51	379.30	2	6.35	55	387.15	89	5213.75
60-70									8	13.15			8	13.15	29	2050.30
70-80			1	0.45					2	8.20			3	8.65	8	733.95
80-90									1	38.10			1	38.10	22	1457.35
90-100									3	210.05			3	210.05	22	1305.10
100-110															1	101.88
120-130															1	9.80
130-140															2	5.55
Subtotal	9	1.50	2	43.15	0	0.00	1	1.30	253	1053.55	3	6.60	268	1106.10	472	25667.88
N200 E87																
10-20									4	7.30	1	0.20	5	7.50	2	262.30
20-30					1	0.30			25	17.45			26	17.75	10	548.05
30-40	1	0.10							30	24.05			31	24.15	44	3010.95
40-50	2	0.60	1	4.20	1	0.05			90	254.15			94	259.00	110	7175.15
50-60									14	38.25			14	38.25	32	580.50
60-70			1	0.40					20	55.80			21	56.20	98	5757.80
70-80							1	1.65	2	1.15			3	2.80	12	561.40
80-90															18	1362.40
90-100									4	27.75			4	27.75	23	1001.50
100-110							1	0.15	2	0.85			3	1.00	7	60.35
Subtotal	3	0.70	2	4.60	2	0.35	2	1.80	191	426.75	1	0.20	201	434.40	356	20320.40
N200 E95																
0-10									3	8.95			3	8.95	6	373.55
10-20									64	60.25			64	60.25	46	1984.50
20-30					1	1.60			31	55.80			32	57.40	24	1944.75
30-40									3	1.80			3	1.80		
40-50									4	4.60	1	1.50	5	6.10	10	804.40

Table 2 continued.

PROVENIENCE UNIT LEVEL	LITHIC CATEGORY															
	LITHIC FLAKES														FIRE-CRACKED ROCK	
	CHERT		FELSITE		QUARTZ		QUARTZITE		RHYOLITE		OTHER		TOTAL FLAKES			
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
N200 E95 (cont.)																
50-60									5	27.95			5	27.95	5	224.25
60-70									20	15.95			20	15.95	7	260.85
70-80									10	9.75			10	9.75	5	70.50
80-90	1	0.15							8	6.15			9	6.30	24	225.35
90-100															1	206.50
100-110									1	33.40			1	33.40	3	59.55
110-120															4	144.40
120-130															9	906.35
130-140									1	4.65			1	4.65	6	493.70
140-150															5	124.40
150-160															1	4.80
160-170									3	12.95			3	12.95	4	289.45
170-180															1	229.00
190-200									2	5.00			2	5.00		
200-210									3	1.95			3	1.95		
210-220									3	2.50			3	2.50		
220-230									1	0.40			1	0.40		
Subtotal	1	0.15	0	0.00	1	1.60	0	0.00	162	252.05	1	1.50	165	255.30	161	8346.30
N200 E104																
0-10									2	1.35			2	1.35	1	1.95
10-20									12	44.40			12	44.40	16	1592.45
20-30					2	41.60			9	63.85			11	105.45	19	2857.55
30-40									3	2.65			3	2.65	28	1350.45
40-50									3	4.70			3	4.70	12	64.40
50-60									2	4.45			2	4.45		
60-70									17	17.15			17	17.15	13	232.55
70-80	6	3.35			2	0.35			116	261.65			124	265.35	34	293.80
80-90	6	5.45	2	5.35	4	4.80			321	470.90			333	486.50	504	5357.90
90-100	1	0.60							49	144.90			50	145.50	57	1752.10
100-110									2	4.20			2	4.20	13	329.85
110-120									2	459.50			2	459.50	6	408.45
120-130									4	3.55			4	3.55		
Subtotal	13	9.40	2	5.35	8	46.75	0	0.00	542	1483.25	0	0.00	565	1544.75	703	14241.45
N201 E75																
85-99									2	1.10			2	1.10	25	428.85
86-104									17	31.65			17	31.65	96	2793.20
Subtotal	0	0.00	0	0.00	0	0.00	0	0.00	19	32.75	0	0.00	19	32.75	121	3222.05
N201 E104																
0-10									2	7.10			2	7.10	1	47.20
10-20	1	1.70	1	7.20	4	2.55			7	4.40			13	15.85	7	302.55
20-30					3	1.15			16	18.11			19	19.26	13	1658.55
30-40	2	9.90			1	0.20			8	1.50			11	11.60	29	4063.80
40-50	2	0.60			1	0.55			3	6.60			6	7.75	18	824.70
50-60															10	561.20
60-70									1	17.45			1	17.45	2	20.75

Table 2 continued.

PROVENIENCE	LITHIC CATEGORY															
	LITHIC FLAKES														FIRE-CRACKED ROCK	
UNIT	CHERT		FELSITE		QUARTZ		QUARTZITE		RHYOLITE		OTHER		TOTAL FLAKES			
LEVEL	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
N201 E104 (cont.)																
70-80									2	9.60			2	9.60	11	435.35
80-90	16	5.45	25	28.05					366	854.20	1	0.25	408	887.95	420	12339.75
90-100			1	0.50					13	11.95			14	12.45	13	835.95
100-110									1	1.50			1	1.50	3	303.70
110-120			1	16.75	1	0.20			1	5.50			3	22.45	2	144.60
150-160									1	18.00			1	18.00		
160-170															2	104.40
Subtotal	21	17.65	28	52.50	10	4.65	0	0.00	421	955.91	1	0.25	481	1030.96	531	21642.50
N201 E113																
0-10															3	2778.70
10-20									1	0.45			1	0.45		
20-30															1	25.80
30-40									3	1.15			3	1.15	1	256.20
40-50															1	8.75
50-60									2	5.90			2	5.90		
70-80															1	11.70
100-110									1	0.35			1	0.35		
110-120									1	0.65			1	0.65		
130-140															8	145.80
Subtotal	0	0.00	0	0.00	0	0.00	0	0.00	8	8.50	0	0.00	8	8.50	15	3226.95
N217 E72																
0-40									1	0.20			1	0.20	4	18.30
0-73															3	67.85
13A															5	11.50
14A									2	0.25			2	0.25	12	160.65
15A/B									3	1.05			3	1.05	21	1070.10
16A/B									7	1.55			7	1.55	22	1533.40
16B															1	53.75
17B									1	0.10			1	0.10		
18B															1	0.45
19B															1	86.90
20B									10	12.50			10	12.50	17	113.95
21B			1	35.80					21	25.35			22	61.15	34	1557.20
Subtotal	0	0.00	1	35.80	0	0.00	0	0.00	45	41.00	0	0.00	46	76.80	121	4674.05
N218 E72																
0-73															1	5.35
15A/B									2	0.20	1	0.55	3	0.75	11	234.70
16A/B									2	13.07			2	13.07	52	2985.00
17A/B															28	1157.95
17B									3	0.55			3	0.55	16	53.10
18B															2	3.20
20B															6	97.85
21B	1	0.10							70	124.05			71	124.15	36	1368.15
Subtotal	1	0.10	0	0.00	0	0.00	0	0.00	77	137.87	1	0.55	79	138.52	152	5905.30
T5 P5 0-60															3	17.60
Subtotal	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	3	17.60
B10									6	89.65			6	89.65	118	4350.00
Subtotal	0	0.00	0	0.00	0	0.00	0	0.00	6	89.65	0	0.00	6	89.65	118	4350.00
TOTAL CT/WT	71	33.05	36	141.55	35	74.80	4	3.20	2500	6255.40	12	11.45	2658	6519.45	5118	198785.33

Dennison Site

PROVENIENCE UNIT LEVEL	LITHIC CATEGORY														TOTAL	
	Igneous (Dense)		Igneous (Even-Granular)		Igneous (Uneven-Granular)		Igneous (Glassy)		Metamorphic (Dense)		Metamorphic (Even-Granular)		Metamorphic (Uneven-Granular)			
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
N199 E85																
10-20					1	3.30					2	34.60			3	37.90
20-30			2	765.90	4	1118.30	1	129.60			4	36.50	2	1235.30	13	3285.60
30-40			5	5065.40	9	1265.50	6	81.80			28	404.60	3	747.60	51	7564.90
40-50			1	20.10	2	205.40	1	11.60			19	356.70	1	338.90	24	932.70
50-60	3	41.80	46	1035.60	22	703.40	2	17.60	3	37.90	380	11070.50	5	119.20	461	13026.00
60-70			144	3602.80	15	381.50	1	31.70			408	7432.90			568	11448.90
68-80			2	8.70							4	4.80			6	13.50
70-80			9	160.40	1	119.30					31	1255.50			41	1535.20
77-90											19	1384.50			19	1384.50
80-90			12	1823.60							21	3040.90			33	4864.50
90-100			5	12.50							25	815.20			30	827.70
100-110							2	32.20			6	400.10			8	432.30
110-120											2	261.50			2	261.50
120-130											1	27.80			1	27.80
Subtotal	3	41.80	226	12495.00	54	3796.70	13	304.50	3	37.90	950	26526.10	11	2441.00	1260	45643.00
N200 E95																
0-10			2	52.20	2	293.20					2	31.15			6	376.55
10-20			2	337.90	3	171.70	6	62.80			35	1402.50			46	1974.90
20-30					1	56.90					20	1737.10	2	149.10	23	1943.10
40-50			2	121.60							8	681.90			10	803.50
50-60			1	80.70							4	143.10			5	223.80
60-70			2	6.50					2	128.20	2	63.30	1	62.70	7	260.70
70-80							1	0.20			4	70.20			5	70.40
80-90									1	9.60	3	72.70	20	143.00	24	225.30
90-100											1	206.50			1	206.50
100-110									1	4.60	2	55.10			3	59.70
110-120							1	6.80	1	62.30	2	75.60			4	144.70
120-130									1	501.70	8	411.60			9	913.30
130-140											6	493.80			6	493.80
140-150											5	123.90			5	123.90
150-160			1	4.80											1	4.80
160-170			1	268.20							3	15.20			4	283.40
170-180											1	229.00			1	229.00
Subtotal	0	0	11	871.90	6	521.80	8	69.80	6	706.40	106	5812.65	23	354.80	160	8337.35
TOTAL CT/WT	3	41.80	237	13366.90	60	4318.50	21	374.30	9	744.30	1056	32338.75	34	2795.80	1420	53980.35

Table 3. Aboriginal Fire-Cracked Rocks from Excavation Units N199 E85 and N200 E85 at the Dennison Site by Raw Material and Provenience.

historical information, as well as for indication of some of the other issues which may ultimately be addressed through research at the Dennison site. For example, there seems to be some confirmation of a previously suspected diversification of raw material usage over time in the interior riverine portions of the region (e.g., Petersen 1990). This apparent trend specifically includes the notable utilization of chert only after the early portion of the Late Archaic period, that is, from the time of the Susquehanna tradition onward and even more so during the Woodland (Ceramic) period. Abundant green rhyolite was dominant over time, but was used in conjunction with this and other materials later on at the Dennison site as elsewhere (Table 2).

Relatively few unequivocally diagnostic lithic tools have been recovered from the

PROVENIENCE	CERAMIC CATEGORY																						TOTAL	
UNIT	1		2		3		4		5		6		7		8		9		10		11			
LEVEL	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
N200 E75																								
10-20																					1	0.8	1	0.8
Subtotal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.8	1	0.8
N200 E87																								
20-30			2	26.0			2	1.3															4	27.3
30-40					2	11.9			4	4.3													6	16.2
40-50																			4	1.9	1	0.4	5	2.3
Subtotal	0	0.0	2	26.0	2	11.9	2	1.3	4	4.3	0	0.0	0	0.0	0	0.0	0	0.0	4	1.9	1	0.4	15	45.8
N200 E95																								
20-30															2	3.8	2	9.1			2	0.3	6	13.2
Subtotal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	3.8	2	9.1	0	0.0	2	0.3	6	13.2
N200 E104																								
10-20											1	0.4					1	2.3					2	2.7
30-40													1	3.3									1	3.3
Subtotal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4	1	3.3	0	0.0	1	2.3	0	0.0	0	0.0	3	6.0
N201 E104																								
10-20																	1	0.6	1	0.2			2	0.8
40-50													1	1.1									1	1.1
50-60	2	3.1																					2	3.1
60-70	3	12.7																					3	12.7
Subtotal	5	15.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.1	0	0.0	1	0.6	1	0.2	0	0.0	8	17.7
TOTAL	5	15.8	2	26.0	2	11.9	2	1.3	4	4.3	1	0.4	2	4.4	2	3.8	4	12.0	5	2.1	4	1.5	33	83.5

CERAMIC CATEGORY KEY:

1=Grit-tempered, fabric-paddled interior and exterior, undecorated; ca. 1000-100 B.C.

2=Grit-tempered, smoothed, cord-wrapped stick decorated; ca. A.D. 1000-1750.

3=Grit-tempered, smoothed, undecorated; ca. 100 B.C.- A.D. 1750.

4=Grit-tempered, smoothed exterior/unknown interior, undecorated.

5=Grit-tempered, smoothed interior/unknown exterior, undecorated.

6=Grit-tempered, unknown surfaces, undecorated.

7=Grit-tempered irregular manufacture scrap.

8=Shell-tempered, smoothed, undecorated; ca. A.D. 1000-1750.

9=Shell-tempered, fabric-paddled exterior/smoothed interior; ca. A.D. 1000-1750.

10=Shell-tempered, fabric-paddled exterior/unknown interior; ca. A.D. 1000-1750.

11=Shell-tempered, smoothed, interior/unknown exterior; ca. A.D. 1000-1750.

Table 4. Aboriginal Ceramics from the Dennison Site by Ceramic Category and Provenience.

site to date. Only three or four projectile points are included in the tool inventory and only a few other tools may be comparably diagnostic. At least one projectile point has been dated; this specimen is an expanding stemmed form made on a thin, somewhat broad flake. It originated from a depth of about 40-50 cm in association with feature 19, dated to ca. 3320 B.P. (Figure 13). This point has local and regional analogues and seems clearly related to later developments of the Susquehanna tradition (e.g., Petersen and Putnam 1986). Another apparent projectile point base fragment associated with undated feature 21 at a depth of 70-80 cm in unit N200 E65 is quartz and resembles small-stemmed points attributable to an earlier portion of the Late Archaic period, ca. 4500-3900 B.P. (e.g., Bourque 1975; Ritchie 1969). A much larger, thicker projectile point tip seems attributable to the still earlier Laurentian tradition, ca. 6000-5000 B.P. (e.g. Petersen et al. 1986; Ritchie 1979; Sanger et al. 1977); it originated at a depth of 60-70 cm in unit N200 E75.

Various other lithic tools and cores can be attributed to the Archaic period as well on the basis of their relationship to dated features 18 and 19 (Figures 13-16), and/or their stratigraphic position within the deposits (Figure 17). In particular, some of the bifaces associated with features 18 and 19 seem to be classic examples of the Susquehanna tradition (e.g., Figures 13 and 14).

Dennison Site

Two small tool fragments of unequivocal Munsungan chert, one a biface fragment and the other a possible modified flake, were associated with feature 18, dated ca. 1710 B.C. Notably, one notched and highly fragmentary tool or other item is quite unusual with few specifiable correlates; it was associated with feature 15 at a depth of 80-90 cm in unit N200 E75 and thus may well predate the Laurentian tradition (Figure 17).

A smaller but equally recognizable number of Woodland (Ceramic) period lithic tools were also recovered from the Dennison site (Figure 18). These include a single whole projectile point which may be attributable to the Late Woodland (Ceramic) period on the basis of its general morphology and chert raw material (e.g., Sanger 1987), but this attribution is by no means certain. Other tools are likewise assignable to later prehistory given their raw materials and/or morphology, such as a small uniface scraper manufactured from Onondaga chert from New York.

One other category of aboriginal remains, ceramics, offers additional clues about the later occupations at the Dennison site. Although only a small sample (Figures 19 and 20; see Table 4), the ceramics document several significant pottery variants attributable to at least two distinctive temporal periods. The Early Woodland (Ceramic) period is clearly represented by the deepest recovered ceramics which are grit-tempered, fabric-paddled interior and exterior, undecorated body sherds; these can be generally dated after 3000 B.P. and before ca. 2100 B.P. Most, if not all of the rest of the ceramic sample may be attributed to the later Woodland (Ceramic) period, specifically to the Late Woodland (Ceramic) period after 950 B.P., on the basis of their relative thinness, a combination of shell and grit temper, the combination of fabric-paddled and smoothed exterior and interior surfaces, respectively, and scant cord-wrapped stick decoration in a few cases.

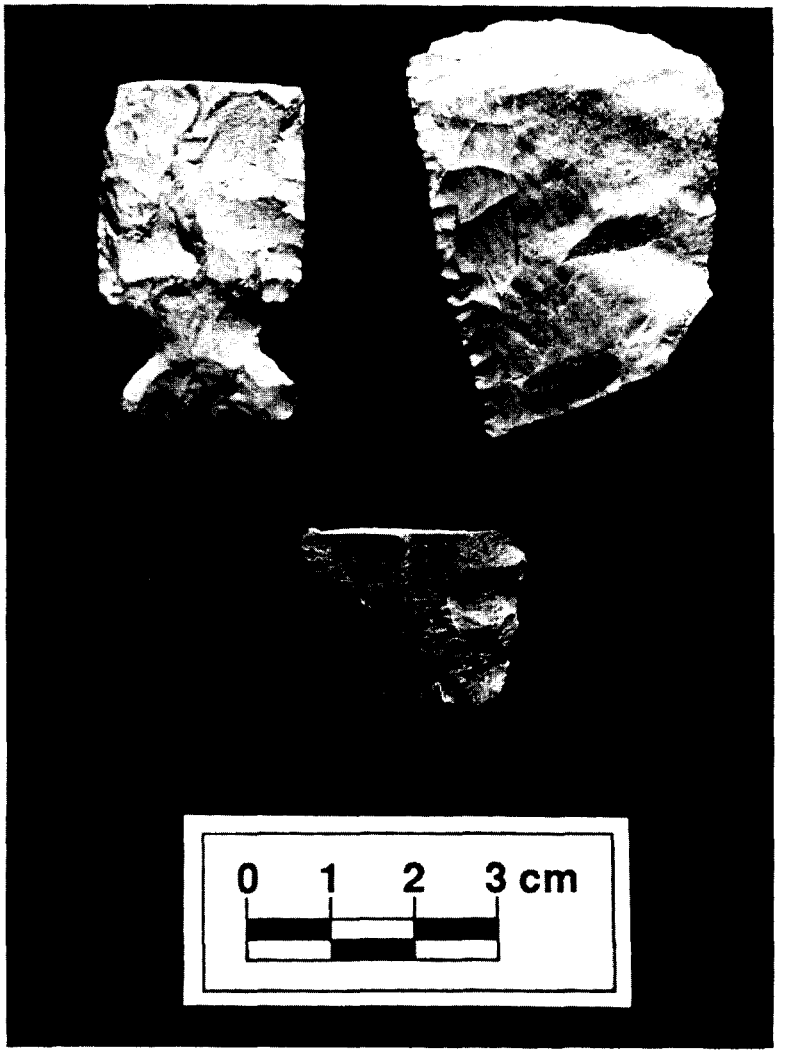

Figure 13. Late Archaic period artifacts from within and near feature 19 at the Dennison site. Upper left: gray argillite expanding stemmed projectile point from 40-50 cm level; upper right: gray-brown chert modified flake from 50-60 cm level; lower center: green rhyolite primary biface base from 60-70 cm level.

Although the sample is quite fragmentary and does not include any rim sherds, the ceramics provide other useful information in terms of the fiber perishables preserved

on a few specimens. Matching other interior noncoastal samples, the early specimens from the Early Woodland (Ceramic) period exhibit S-weft slant perishables, whereas as the Late Woodland shell-tempered specimens exhibit Z-weft slant specimens, where determinable (Petersen and Sanger 1991). Of comparable interest, the presence of at least two manufacture scraps in the small sample documents at least occasional manufacture of ceramic vessels on-site (Figure 19). This latter activity may be indicative of longer term occupations.

SITE SIGNIFICANCE AND CONCLUSIONS

As emphasized throughout this brief report, the Dennison site is highly significant in terms of the content and context of the apparently long cultural and environmental record preserved there. Other deeply stratified archaeological sites have been discovered in Maine and a few other areas in the far Northeast, but few have both the content and context found at the Dennison site. In other words, it is an unusual site in the context of Maine sites and other regional sites because it has not only relatively stratified deposits, but also relatively rich deposits. The combination of these circumstances should allow relatively complete and therefore a quite valuable reconstruction of the prehistoric past, especially for the earlier portions of the Holocene record which are not well preserved in most local and regional settings. In spite of the relatively low intensity testing conducted at the site thus far, nearly every excavation unit has produced comparably common artifacts and similarly deep, if somewhat variable stratigraphy. It is correspondingly appropriate to suggest that there is much left to learn from the Dennison site and that the construction-related disturbance, while regrettable in terms of the large area and volume lost with so little salvage, is overshadowed by the potential represented by the large remaining area, most or all of which probably also contains significant deposits.

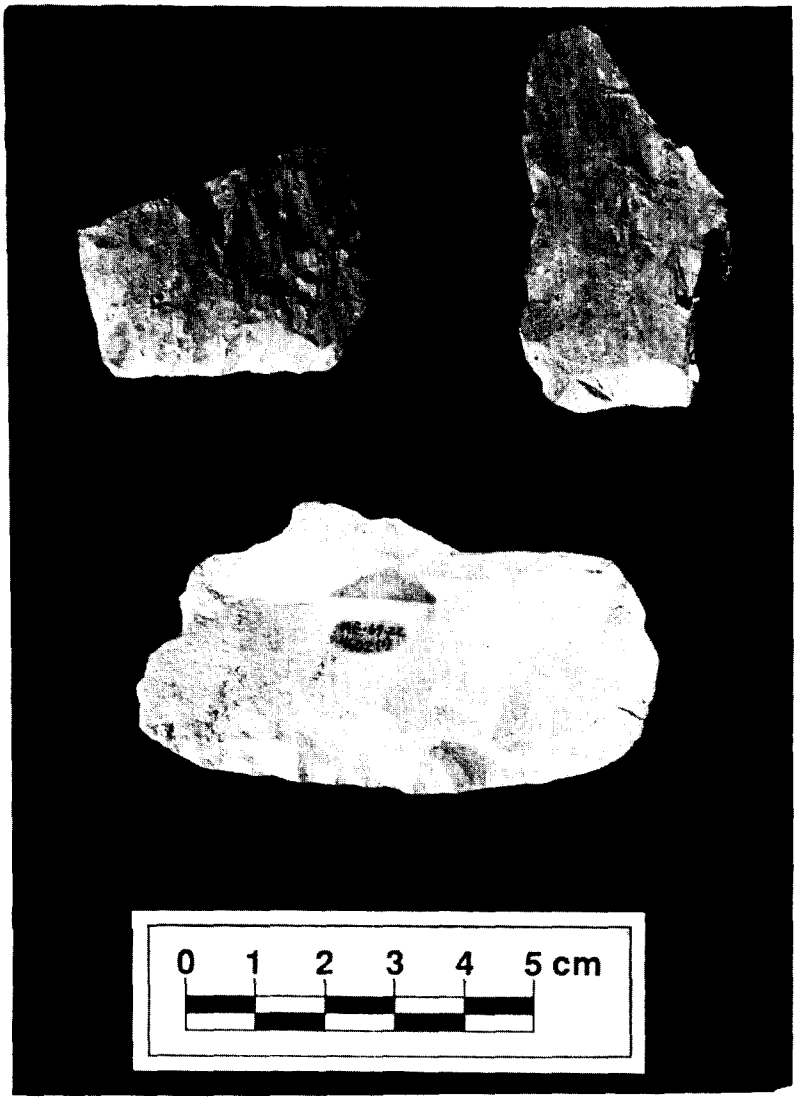

Figure 14. Green rhyolite and felsite lithic artifacts from feature 18 at the Dennison site. Upper left: primary biface base from 50-90 cm level; upper right: modified flake from 80-90 cm level; lower: modified flake from 80-90 cm level.

The full antiquity of the site remains incompletely understood given the presum-

ably erroneous date on the basal charcoal related to feature 27 and the fact that only the "deep hole" may have fully penetrated the entire sequence. However, even in the other units, the sequence seems to clearly predate the Late Archaic period on the basis of the relationship of various finds, primarily flakes and fire-cracked rocks, to the two reliably dated features and the apparent diagnostic artifacts. Assuming that a Laurentian projectile point tip and a small stemmed point base are indeed represented in the collection, the majority of the sequence below 80-100 cm may well predate 6000 B.P., and it is possible that the entire the earlier Archaic period sequence, ca. 9000-6000 B.P., is represented in the deep strata below more obvious later Archaic and Woodland period deposits.

The artifacts will provide more complete information about technology and social interaction in terms of raw materials and styles given further evaluation, thereby providing one of the rare nodes in the development of full cultural sequence anywhere in the broad region. The cultural features are perhaps of possibly even greater significance, however, because they represent potential capsules of human behavior, offering as they do the potential for specific dates associated with specific technological, subsistence and even seasonal evidence, among other evidence of diverse behaviors.

Figure 15. Late Archaic period rhyolite cores and core fragments from feature 18 at the Dennison site. All are from the 80-90 cm level, except lower left which is from 70-80 cm level.

When coupled with the stratigraphy, the cultural features provide a largely unparalleled opportunity to characterize various prehistoric temporal periods which remain poorly known throughout the region. Like the Sharrow site, other sites on the confluence of the Sebec and Piscataquis rivers (e.g., Petersen 1991) and just a few other sites in Maine (e.g., Cowie 1989; Cowie and Petersen 1989; Cox and Wilson 1991), the Dennison site is one of the rare sites which should allow reconstruction of single episodes of cultural behavior because of the largely pristine nature of its deposits. Moreover, the Dennison site and only a few others not only preserve relatively pristine evidence of past human behavior, but they also represent a long temporal span of regional prehistory;

they can be used as critical laboratories for assessment of long-term continuity and change in the prehistoric record with the environment held largely constant. Additional study of this site in both field and laboratory contexts seems imperative.

ACKNOWLEDGEMENTS

Many current and past employees of the UMF Archaeology Research Center are thanked for their individual contributions to the field and laboratory work related to the Dennison site, especially under trying weather conditions and the frustration related to destruction of significant site deposits. Robert Birnie, Pat Baker and Tom Baker are especially thanked for their particular contributions. Laurie Kidd ably managed all of the laboratory work, Ann Robinson provided invaluable editorial assistance, Bill Crandall supervised the data entry and table production work, Belinda Cox is responsible for all the drafted figures, and Tom Buchanan produced the accompanying photographs. These individuals and others too numerous to mention are responsible for the success of the Dennison site research, but the author is solely responsible for any errors or omissions herein.

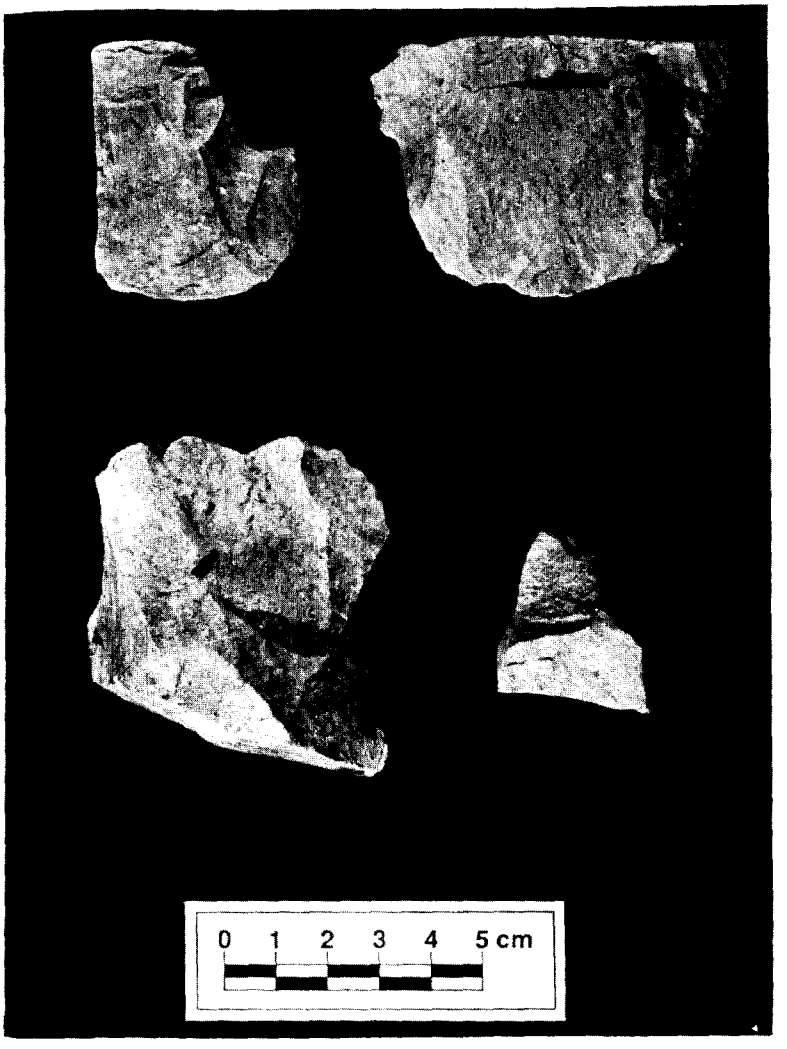

Figure 16. Late Archaic period rhyolite cores and core fragments from feature 19 at the Dennison site. Upper left: from 60-70 cm level; upper right: from 40-50 cm level; lower left: from 50-60 cm level; lower right: from 50-60 cm level.

REFERENCES CITED

Arno, John R., R.B. Willey, W. H. Farley, R. A. Bither, and Bruce A. Whitney
1972 *Soil Survey of Somerset County, Maine: Southern Part.* Soil Conservation Service, United States Department of Agriculture.

Baker, Patricia H., and Thomas R. Baker
1988 *Preliminary Report on Phase I Results at the Proposed Dennison Hatchery Facility below Williams Dam in Embden, Maine.* University of Maine at Farmington Archaeology Research Center. Submitted to Kennebec Aquaculture Company, Monmouth.

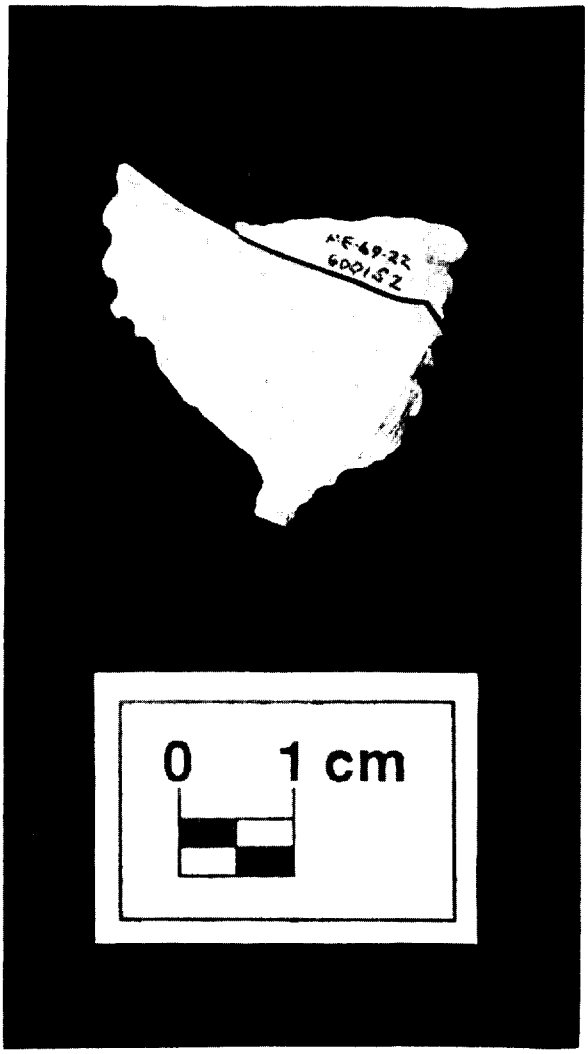

Figure 17. Notched phylite fragmentary artifact from the Dennison site, from 80-90 cm level from feature 15.

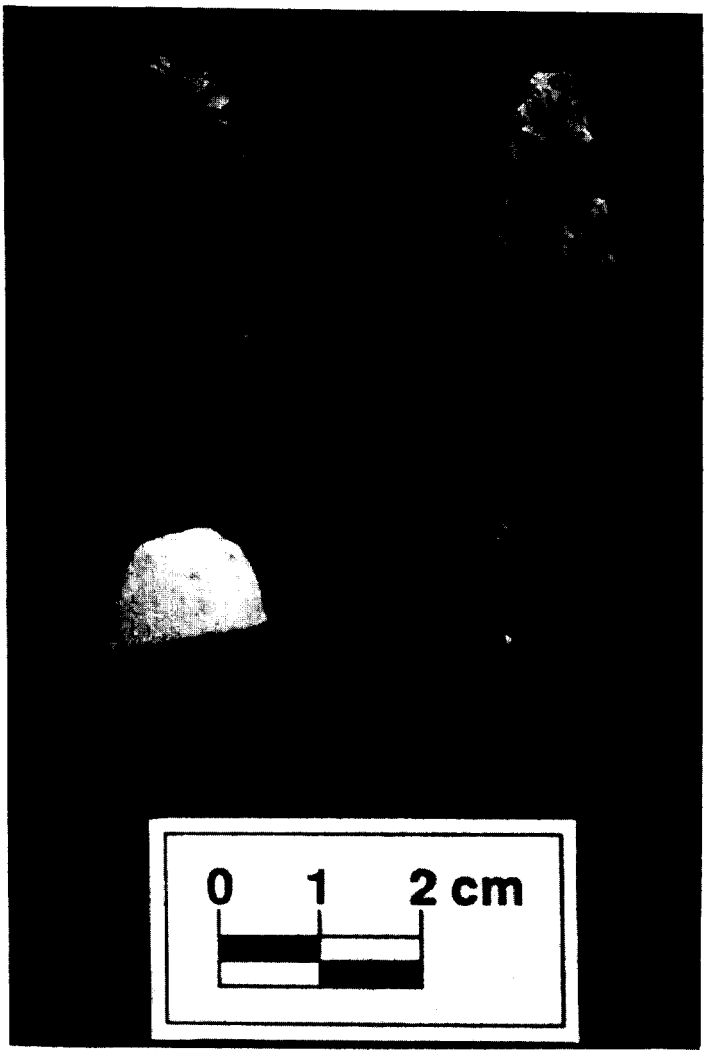

Figure 18. Woodland (Ceramic) period artifacts from the Dennison site. Upper left: gray-black chert corner-notched projectile point from 40-50 cm level; upper right: green rhyolite projectile point tip from 20-30 cm level; lower left: quartz uniface scraper fragment from 10-20 cm level; lower right: gray-brown modified (Onondaga) chert uniface scraper from 10-20 cm level.

Borstel, Christopher L.
1982 *Archaeological Investigations at the Young Site, Alton, Maine.* Occasional Publications in Maine Archaeology 2. Maine Historic Preservation Commission, Augusta.

Bourque, Bruce J.
1975 Comments on the Late Archaic Populations of Central Maine: The View from Turner Farm. *Arctic Anthropology* 12(2):35-45.

Cowie, Ellen R.
1990 Archaeological Investigations in the Southern Androscoggin River Valley, Maine. *Maine Archaeological Society Bulletin* 30(1):1-14.

Cowie, Ellen R., and James B. Petersen
1989 *Archaeological Phase II Survey and Testing of the Bonny Eagle Project (FERC No. 2529), Cumberland and York Counties, Maine.* University of Maine at Farmington Archaeology Research Center. Submitted to Central Maine Power Company, Augusta.

Cox, Steven L., and Deborah B. Wilson
1991 4500 Years on the Lower Androscoggin: Archaeological Investigation of the Rosie-Mugford Site Complex. *Maine Archaeological Society Bulletin* 31(1):15-40.

Hanson, Lindley S., and Dabney W. Caldwell
1989 The Lithological and Structural Controls on the Geomorphology of the Mountainous Areas of North-central Maine. *Maine Geological Survey Studies in Maine Geology* 5:147-167.

Petersen, James B.
1989 The Ongoing Challenge of Historic Preservation in Maine: The Story of the Dennison Hatchery Site. *Maine Archaeological Society Newsletter* 3(2):1-3.
1991 *Archaeological Testing at the Sharrow Site: A Deeply Stratified Early to Late Holocene Cultural Sequence in Central Maine.* Occasional Publications in Maine Archaeology 9. Maine Historic Preservation Commission and Maine Archaeological Society, Augusta.

Petersen, James B., Nathan D. Hamilton, David E. Putnam, Arthur E. Spiess, Robert Stuckenrath, Cynthia A. Thayer, and Jack A. Wolford
1986 The Piscataquis Archaeological Project: A Late Pleistocene and Holocene Occupational Sequence in Northern New England. *Archaeology of Eastern North America* 14:1-18.

Petersen, James B., and David E. Putnam
1986 *Archaeological Phase II Testing in the Williams Hydroelectric Dam Head Pond Area, Somerset County, Maine.* University of Maine at Farmington Archaeology Research Center. Submitted to Central Maine Power Company, Augusta.

Petersen, James B., and David Sanger
1991 An Aboriginal Ceramic Sequence for Maine and the Maritime Provinces. In *Prehistoric Archaeology in the Maritimes*, edited by Michael Deal, in press, Council of Maritime Premiers, Fredericton.

Ritchie, William A.
1969 *The Archaeology of Martha's Vineyard.* Natural History Press, Garden City, New York.
1979 The Otter Creek No. 2 Site in Rutland County, Vermont. *New York State Archaeological Association Bulletin* 76:1-21.

Sanger, David
1987 *The Carson Site and the Late Ceramic Period in Passamaquoddy Bay, New Brunswick.* Archaeological Survey of Canada Paper 135. Canadian National Museum of Civilization, Ottawa.

Sanger, David, Ronald B. Davis, Robert G. MacKay, and Harold W. Borns
1977 The Hirundo Archaeological Project: An Interdisciplinary Approach to Central Maine Prehistory. In *Amerinds and Their Paleoenvironments in Northeastern North America*, edited by W. Newman and B. Salwen:457-471. Annals of New York Academy of Sciences 288.

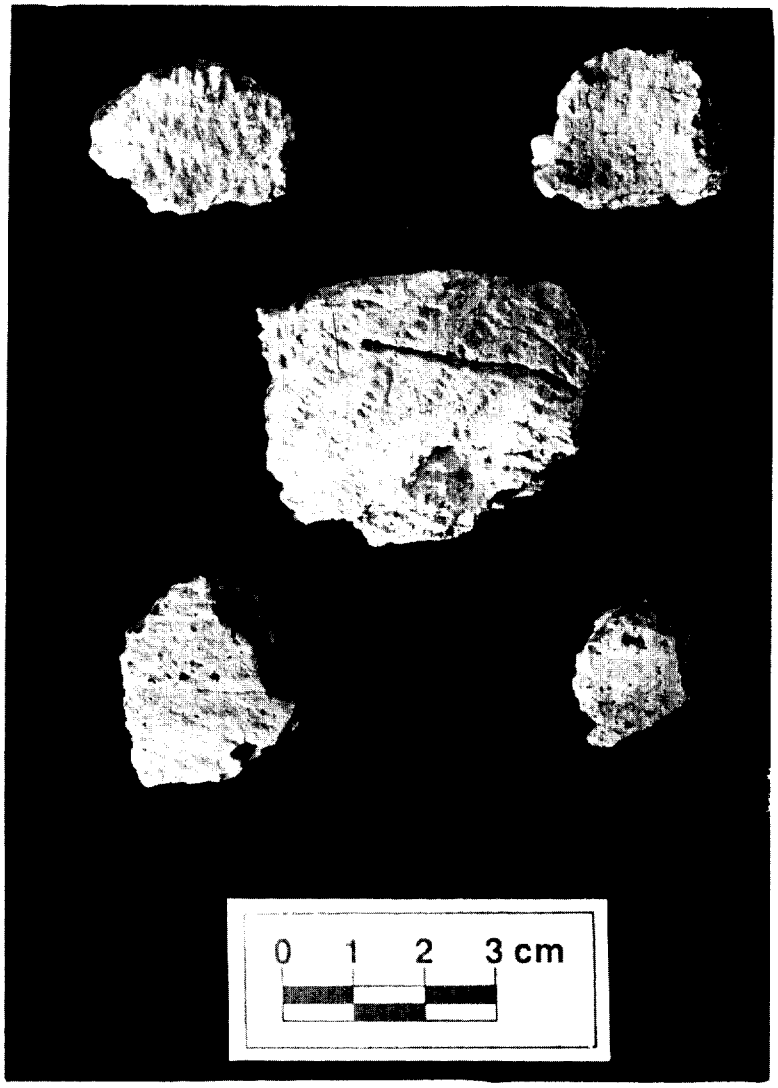

Figure 19. Aboriginal ceramic sherds from the Dennison site. Upper left: grit-tempered, fabric-paddled exterior and interior, undecorated body sherd from 60-70 cm level exterior surface visible; upper right: as above, from 60-70 cm level, interior surface visible; center: grit-tempered, smoothed, cord-wrapped stick decorated body sherd from 20-30 cm level; lower left: shell-tempered, fabric-paddled exterior, undecorated body sherd from 20-30 cm level; lower right: shell-tempered, smoothed, undecorated body sherd from 20-30 cm level in feature 7.

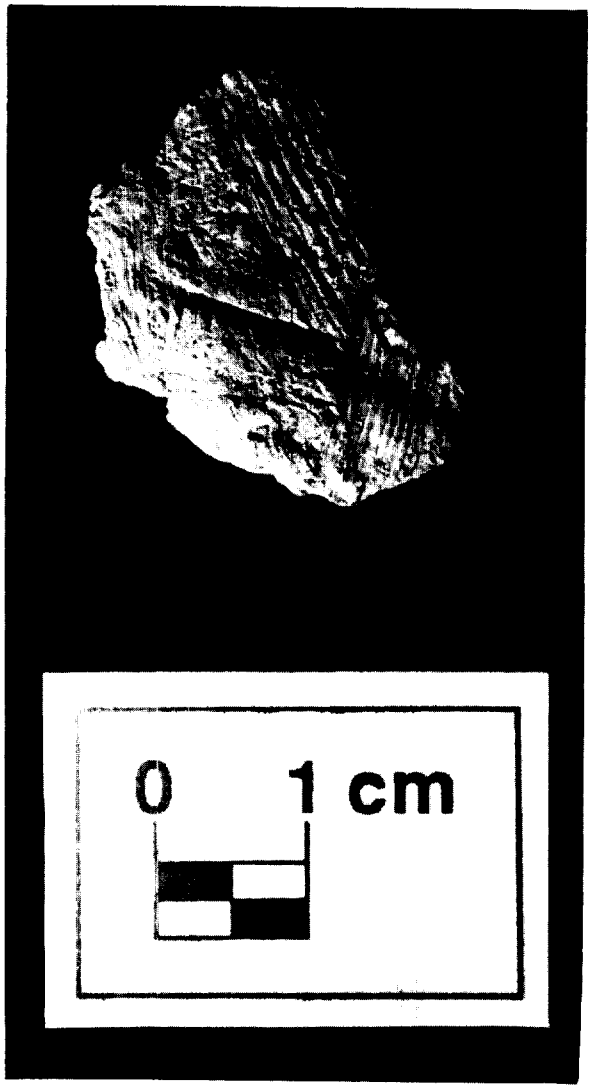

Figure 20. Aboriginal ceramic manufacture scrap from the Dennison site, from 30-40 cm level. Note plant fiber impressions on surface.

FIVE THOUSAND YEARS OF CONTACT BETWEEN MAINE AND NOVA SCOTIA

David Sanger

INTRODUCTION

The University of Maine has long had a program of coastal archaeology (for examples of recent published reports see Belcher 1989a,b; Sanger 1986,1987,1988; Sanger and Kellogg 1989). Our research has taken us from the Boothbay Harbor region to Passamaquoddy Bay, documenting sites and conducting excavations here and there to elucidate the nature of pre-European habitation on the coast. But can we really understand Maine prehistory by confining our research to the modern geo-political boundaries? Are there sites beyond the borders that can provide us with information critical to our understanding of finds in Maine? In this paper I explore some of the possible relationships between the people of southwestern Nova Scotia and the central Maine coast.

Pre-European cultural contacts with Nova Scotia are fairly widely accepted, and are recognized especially in the form of non-Maine, flint-like rocks, the various chalcedonies and jasperoids (often called "Scots Bay Agates") that derive from the basalt formations on the western shore of Nova Scotia. Well known are the numerous examples from the Goddard Site on Naskeag Point in Penobscot Bay (Bourque and Cox 1981). To the best of our knowledge, these rocks do not outcrop in Maine. Furthermore, since their presence cannot be explained by any glacial action, human transport is the most likely explanation. These rocks tend to be concentrated in and around Penobscot Bay, are progressively fewer east and west, and appear to be most common in the late prehistoric period, from about A.D. 1000 to A.D. 1200 and later. It should be stressed that the spatial and temporal distributions can only be estimated at this time due to the incompleteness of the archaeological record. Possibly, only certain types of sites, like the Goddard site, will have any amount of these distinctive lithics.

People rarely lug rocks around, even pretty ones, just for the fun of it. Archaeologists tend to explain such occurrences by reference to cultural contact, most often trade. Three scenarios are possible; Mainers could have traveled to Nova Scotia in order to procure the stones; or, Nova Scotians could have come to Maine; and third, the rocks were passed along, from hand to hand, from the Nova Scotian shores, around the north end of the Bay of Fundy, and then south and west to Maine. For reasons that will become apparent, the first two options are more likely. Whatever the explanation, the assumption is that prehistoric Maine and Nova Scotian peoples were in contact. But for how long, why, and with what consequences for the participating societies is unknown. If a straight line is drawn from Bar Harbor to Yarmouth, Nova Scotia, the distance is 160 km (100 miles) of open ocean with no intervening islands. Shorter distances from Maine to Nova Scotia can be accommodated by going to Grand Manan Island and then to Nova Scotia (about 40 miles of open water). And, by the choice of a land route, one could walk to the source of the Nova Scotia agates without the necessity of crossing the Bay of Fundy. A problem with

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the Grand Manan and land routes is the relative scarcity of the distinctive lithics in Washington County and Knox coastal sites, although there are exceptions, such as the Watson site on Frenchman Bay (Cox and Kopec 1988), and some scrapers at late sites in Passamaquoddy Bay. Based on our current state of knowledge, a direct route from the central Maine coast to southwestern Nova Scotia seems likely, and worthy of further examination. It is not my intention to state that this route is the only one. Even if the evidence supports the Bar Harbor to Yarmouth route hypothesis, the alternative explanations are definitely not ruled out.

In addition to problems outlined above, a second and broader issue is of interest. As linguists have reconstructed the distribution of languages at the first European contact, the people of Nova Scotia spoke an Eastern Algonquian language classified as Micmac, whereas the coastal peoples of Maine spoke a related language known as Eastern Abnaki (Goddard 1978). Goddard (1978) noted the difficulty in assigning early word lists to modern language groupings. However, both the Nova Scotian Micmac and the coastal Maine group(s) were described as having a coastal adaptation involving the resources of the same body of water, the Gulf of Maine and Bay of Fundy. Given the commonality of the marine environment, would we find that the two different linguistic groups had broadly similar adaptations? Or would we discover that the cultural separation as reflected in the language extended to such basic culture traits as subsistence and settlement patterns? The issue is clouded further by a general lack of agreement among ethnohistorians as to which group was where during the critical 16th and 17th centuries. The lack of conclusive evidence is especially important for resolution of the linguistic and ethnic issues in Maine (Bourque 1989).

The above questions were framed in terms of linguistics, adaptation, artifact style and ethnicity, and submitted in a funding proposal to the Canadian Consulate in Washington. D.C. In the document, I proposed to conduct a brief site survey in the Yarmouth area of southwestern Nova Scotia. Funds were awarded and in 1987, in company of Douglas Kellogg, then a PhD candidate at UM, we took the ferry *Bluenose* to Yarmouth. At Yarmouth we met Stephen A. Davis, of Saint Mary's University, Halifax, who negotiated a survey permit with the Nova Scotia Provincial Museum. In addition to site survey, we proposed to document collections and begin a systematic, computerized data bank, based on a dBASE III Plus protocol developed at UM.

THE SURVEY

We began our survey with a search for shell midden sites. On the basis of our surveys in Boothbay and Muscongus Bay areas, Maine, where we had documented nearly 400 shell middens, I expected the Yarmouth area to be "loaded". In this expectation we were dead wrong. We found only the remnants of a couple of shell middens, the rest either eroded away, or never existed in the first place. Further research indicated that currently there are very few clam flats in the Yarmouth area, the mudflats being composed of very fine, soft sediments that do not support extensive soft-shell clam populations.

Disappointed, we turned our attention to looking at the rivers and lakes in Yarmouth County. From Steve Davis' contacts we knew that there were some active collectors in the region, and almost without exception they agreed to show us their collections and their collecting places. Some of these areas, such as the Tusket Falls, were well known to us, but others were new. Unfortunately for scientific archaeology, nearly all of the rivers and lakes have been dammed so that many valuable contextual data have been lost. The collectors responded with enthusiasm to our suggestion that they make their collections available for documentation. Working with students and members of the Nova Scotia Archaeology Society, thousands of items have now been catalogued and stored in the computer database.

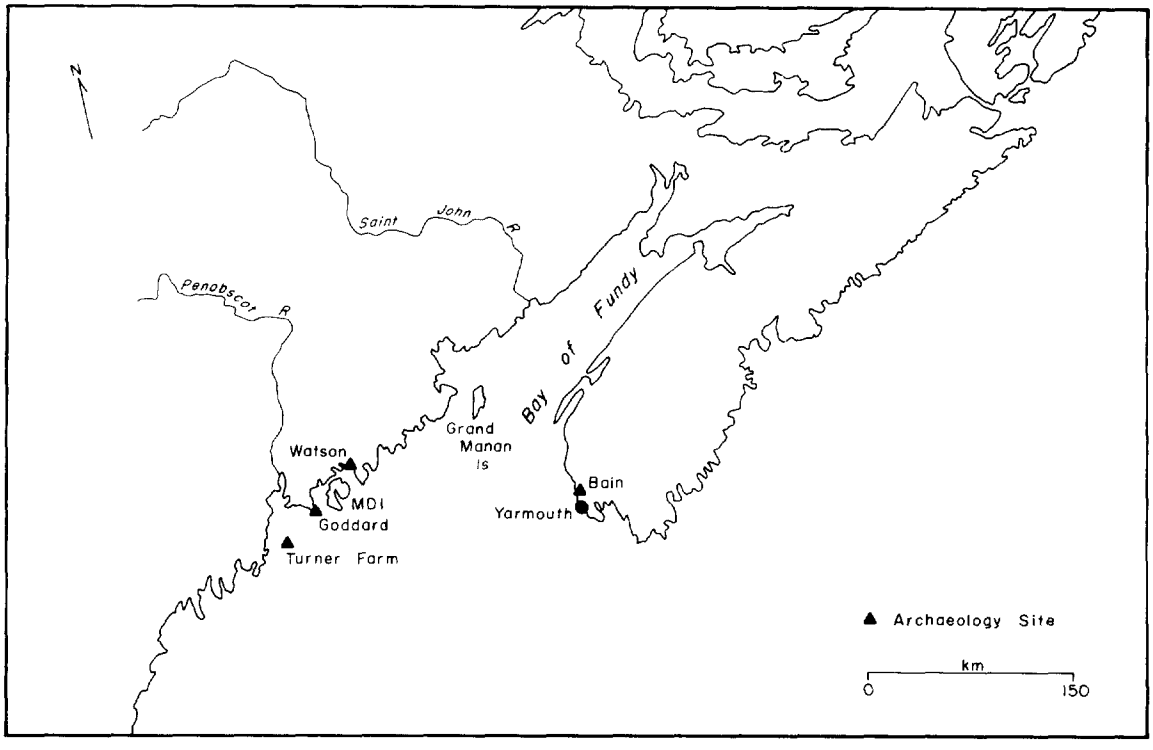

Figure 1. Map of Maine and the Maritimes Provinces showing the area discussed in this paper.

Our visit to Nate Bain of Brooklyn, Nova Scotia, paid handsome dividends. During the 1980's, Nate's attention had been drawn to artifacts that were turning up in a field draining operation in pastures along the Chegoggin River, just a few miles out of Yarmouth. Nate began a program of digging, working out from the drainage ditches. He worked slowly and carefully, making notes as he went, and jotting down the general locations of many of the pieces. On those artifacts that seemed important to him, mostly complete projectile points, Nate wrote the find date, and made reference to the specimen by way of an accurate sketch in his dated field notes.

We were amazed by the collection. In it were a large number of stemmed bifaces very similar to those found in the various Moorehead complex sites of coastal Maine, such as Occupation 2 at the Turner Farm site (Bourque 1983). Because of the ongoing discussions regarding the relationships between the Moorehead complex, or phase, and the Maritime Archaic Tradition, we felt the site was extremely important. In addition to the projectiles, there were only a few ground stone objects. No red ocher burials, so common in the central Maine coastal plain, have been reported from the region. Ceramic Period artifacts are also present in the Bain collection. With permission from the two landowners, we opened up some test pits, enough to determine that intact deposits still existed, and made plans for another season at the Bain site.

Preliminary results of the 1988 excavation, involving crews from UM and Saint Mary's University, have been published (Sanger and Davis 1991) and need not be repeated in detail. We were unable to locate any amount of undisturbed Late Archaic deposit, most of what remains dates from the middle Ceramic Period according to the

radiocarbon dates and the associated potsherds. For several thousands of years, people camped beside the Chegoggin River, and took advantage of the alewife run (locally known as "kiaks"). The site was sheltered by a large drumlin that also provided raw materials for artifacts. In the occupation floor we found quantities of shattered quartz and quartzite, incorporated into the till that forms the basis for the drumlins.

The remainder of this article will focus on the issues raised at the outset; that is, the degree of relationship across the Gulf of Maine and Bay of Fundy.

To begin at the early end of the chronology, our 1987 survey located the find spot of a Late Paleoindian parallel-flaked projectile point recently described by Davis and Christianson (1988). It is unclear if anything remains of the site. The Tusket Falls area contains many examples of projectile points that fit into the Late Archaic sequence and possibly some that date to Middle Archaic times. From elsewhere in the local drainages we saw a few large side-notched points, reminiscent of what are often called "Otter Creek points" in Maine and Vermont, as well as a few slate ulus. While scarce, these finds suggest links with parts of Washington County in the St. Croix drainage (Kopec 1985).

The stemmed bifaces from the Bain site on the Chegoggin River are strikingly like those found in Moorehead complex sites along the coast of Maine and the lower Penobscot River valley at sites such as Eddington Bend. They illustrate very close stylistic similarities, and therefore probable contacts between Maine and Nova Scotia. Their presence in Nova Scotia further fuels a long-standing debate. Those of us working in Maine have generally preferred to use the term Moorehead and its variants (phase, complex, tradition, etc.) instead of Maritime Archaic as defined by James Tuck (1971) for Newfoundland and Labrador. Until we found a Nova Scotian site with the stemmed bifaces similar to those from the Maine side of the Gulf of Maine, we had a convenient boundary. Now we have to rethink the issue, not only the boundary, but also what exactly it is we mean by Moorehead or Maritime Archaic. As so often happens, new finds bring little clarification. Clearly, we need to recover some dateable charcoal from Archaic levels of the Bain site as well as some other artifact classes that will allow us to refine our classification and chronology. Ground slates and pecked and ground tools are common enough in southern Nova Scotia; however, we know little about their contexts. That peoples with a maritime adaptation capable of hunting swordfish in Penobscot Bay could have traveled to Nova Scotia and back is not surprising. What did get our attention was the clear presence of Susquehanna points and drill forms in the Yarmouth collections.

From Tusket Falls, in now heavily eroded and dug-over deposits, collectors have amassed a number of Susquehanna bifaces and drills. When I first saw a complete specimen, I felt sure that someone had recently traded with a fellow collector from Maine. Not only was the form identical with burial specimens from sites like Turner Farm, but the material even looked like Maine felsite. Other pieces, including point fragments and drills, convinced me that this was not an isolated find and that Susquehanna peoples had indeed voyaged to Nova Scotia, but from what port of call? Susquehanna artifacts show up with reasonable frequency in downeast Maine sites, but drop off in collections beyond the city of Saint John in New Brunswick. All of the Susquehanna points Steve Davis and I have seen from Nova Scotia derive from sites in the southern part of the province. Given this distribution, it is most likely that the Susquehanna presence in the Yarmouth area results from oceanic voyages. The Susquehanna tradition in Maine is often characterized as less maritime in its adaptation than the preceding Moorehead complex. Perhaps in the past the differences between the two cultures have been overemphasized.

The Ceramic Period in southwestern Nova Scotia shows some rather interesting characteristics. The pottery decorative at-

tributes are remarkably similar to those from the central and downeast Maine coast. Based on our preliminary analysis, in many ways they look more like Maine ceramics than they do sherds from the northern part of Nova Scotia. However, the projectile points are different, featuring deeply corner-notched specimens, like some recovered from the Passamaquoddy Bay region, but more especially from the north shore of New Brunswick and the remainder of Nova Scotia. Clearly, on the basis of these two artifact classes alone, interpretations of ethnicity as reflected in artifact style require some caution. And finally, collectors in the Yarmouth area have recovered blocked-end tubes and large bifaces made of mid-continent chert and copper beads, all artifacts associated with the early Ceramic Period burial custom known as Middlesex. The finds extend the distribution of this burial practice from the St. Lawrence Valley and Champlain lowlands, into New Brunswick, and south to the Yarmouth area. Interestingly, the distinctive artifacts are rarely encountered in Maine.

The evidence for contacts across the Gulf of Maine suggests a level of seamanship and technology that may come as a surprise to some. We tend to think of small canoes, such as those that plied the rivers and lakes of Maine and the Maritimes. However, as Adney and Chappelle (1964) document, the coastal peoples made ocean-going canoes in the 24 foot plus range with reports of ocean canoes up to 28 feet in length. With this technology, and given a reasonably calm day, experienced seapeople could have made numerous safe crossings. For example, in 1605 Champlain (Biggar 1922) met a coastal voyager, said to be Micmac, traveling downeast from western Maine with a load of vegetables.

The Bain site has something to offer us in the Scots Bay agate inquiry. It would appear that the Nova Scotian peoples did not use these chalcedonies and jasperoids to any great extent during the Archaic Period. All the Bain site Archaic bifaces are made of quartz, quartzite and rhyolitic rocks. The jasperoid projectile points appear with the Ceramic Period. It explains then, why we are seeing these rocks in Maine only during the Ceramic Period, despite the evidence for earlier contacts. Why the flow of Scots Bay jasperoids to Maine should have intensified around A.D. 1000 and later is not immediately clear. It might be related to a late prehistoric reinforcement of culture contacts, with potentially interesting ramifications for the ethnic distribution of peoples when the first Europeans documented the tribes around A.D. 1600. In addition, the trade and exchange networks established during the late prehistoric period may have influenced rather profoundly the relationships between the earliest European traders and the aboriginal peoples (see Bourque In Press; Bourque and Whitehead 1985).

Recently, Bourque (1989) has reviewed the history of the controversy between those who assume that Champlain knew what he was talking about and those who feel he was mistaken in his ethnic identities. Basically, the argument revolves around who were the Etchemins and whether or not there was a coastal group in eastern Maine affiliated with the New Brunswick Maliseet. If this view of aboriginal ethnic groupings is correct, it calls into serious question the riverine orientation model fostered by Speck (1915, 1940) and reinforced by Snow (1980) (see Bourque 1989 for a detailed discussion of the merits of the case). The independent archaeological evidence currently supports the idea of a coastal group (Sanger 1986, 1988), while preliminary analysis of late prehistoric period suggests a certain downeast flavor to the archaeology. Together, the evidence weighs in favor of the "Etchemin hypothesis"; that is, a Kennebec River to Saint John River tide-water group with close relationships to Native Peoples of what is now New Brunswick. The research reported on in this paper suggests it might be useful also to consider the evidence of prehistoric relationships between Nova Scotian peoples and the coastal groups called Etchemin.

CONCLUSION

In conclusion, I envisage a maritime cultural region encompassing the central and downeast Maine coast and the southern end of Nova Scotia. The adaptive focus of this broadly defined culture is decidedly maritime. In Nova Scotia, where no part of the interior is far from the sea, the distinction between inland and coastal adaptation is blurred. In Maine, however, the notion of a late prehistoric, Penobscot River-oriented people migrating annually between the headwaters and the estuary cannot be sustained on the basis of the archaeological evidence. At this time I feel that it would be premature and unwise to christen this maritime cultural region a named "culture area" with all that term connotes. While the similarities in certain aspects of material culture and adaptation cannot be denied, their meaning is still unclear. I suggest, however, that any future considerations of socio-political aboriginal alignments in late prehistoric and early historic times should take into account these potential examples of prehistoric contacts across the Gulf of Maine. Finally, we must not fall into the trap of allowing modern geopolitical boundaries to dictate our perceptions of pre-European social relationships in the Maine-Maritimes region.

ACKNOWLEDGEMENTS

The Yarmouth County survey and the Chegoggin Archaeology Project was made possible by grants from the Canadian Government and the Nova Scotia Museum. Additional support was provided by the University of Maine and Saint Mary's University. Steve Davis and I very much appreciate the friendship and assistance provided by several collectors in the Yarmouth area, especially Nate Bain and the owners of the site. The map was drawn by Steve Bicknell.

REFERENCES

Adney, Edwin T. and H. I. Chapelle
1964 *The Bark Canoes and Skin Boats of North America.* Smithsonian Institution, Washington, D. C.

Belcher, William R.
1989a The Archaeology of the Knox Site, East Penobscot Bay, Maine. *Maine Archaeological Society, Bulletin* 29(1):33-46.
1989b Prehistoric Fish Exploitation in East Penobscot Bay, Maine: The Knox Site and Sea--Level Rise. *Archaeology of Eastern North America* 17:175-190.

Bourque, Bruce J.
1983 The Turner Farm Project. *National Geographic Society Research Reports* 15:59-65.
1989 Ethnicity on the Maritime Peninsula, 1600-1759. *Ethnohistory* 36(3):257-284.
In Press Evidence for Prehistoric Exchange on the Maritime Peninsula. In *Prehistoric Exchange Systems in North America,* Vol 2. Eds. J. Ericson and T. Baugh, Plenum Press.

Bourque, Bruce J. and Steven L. Cox
1981 Maine State Museum Investigations of the Goddard Site. *Man in the Northeast* 22:3-27.

Bourque, Bruce J. and Ruth Whitehead
1985 Tarrentines and the Introduction of European Trade Goods in the Gulf of Maine. *Ethnohistory* 32: 327-41.

Davis, Steve A. and D. Christianson
1988 Three Palaeo-Indian Specimens from Nova Scotia. *Canadian Journal of Archaeology* 12:190-196.

Goddard, Ives
1978 Eastern Algonquian Languages. In *Handbook of North American Indians--Northeast.* Edited by Bruce Trigger. Vol 15:70-77. Smithsonian Institution Press.

Kopec, Diane
1985 The Eddie Brown Collection of The West Grant Lake Area, Maine. *Maine Archaeological Society Bulletin* 25(2):3-27.

Sanger, David
1986 An Introduction to the Prehistory of the Passamaquoddy Bay Region. *American Review of Canadian Studies* 16(2):139-159.
1987 *The Carson Site and the Late Ceramic Period in Passamaquoddy Bay, New Brunswick.* Archaeological Survey of Canada Paper 195, Canadian Museum of Civilization, Ottawa.
1988 Maritime Adaptations in the Gulf of Maine, *Archaeology of Eastern North America* 16:81-99.

Sanger, David and Steve Davis
1991 Preliminary Report on the Bain Site and the Chegoggin Archaeological Project. In *Archaeology in the Maritimes,* Michael Deal, Editor. Maritime Council of Premiers, Fredericton, N.B. (Publication due summer of 1991).

Sanger, David and Douglas Kellogg
1989 Prehistoric Archaeology and Evidence of Coastal Subsidence on the Coast of Maine. In *Neotectonics of Maine.* W. Anderson and H. W. Borns, eds. Maine Geological Survey, Department of Conservation, Augusta, pp 107-126.

Snow, Dean R.
1980 *The Archaeology of New England.* Academic Press, NY.

Speck, Frank G.
1915 The Family Hunting Band as the Basis of Algonquian Social Organization. *American Anthropologist* 17(2):289-305.
1940 *Penobscot Man: The Life History of a Forest Tribe in Maine.* University of Pennsylvania Press, Philadelphia.

Tuck, James A.
1971 An Archaic Cemetery at Port au Choix, Newfoundland. *American Antiquity* 36(3):343-358.