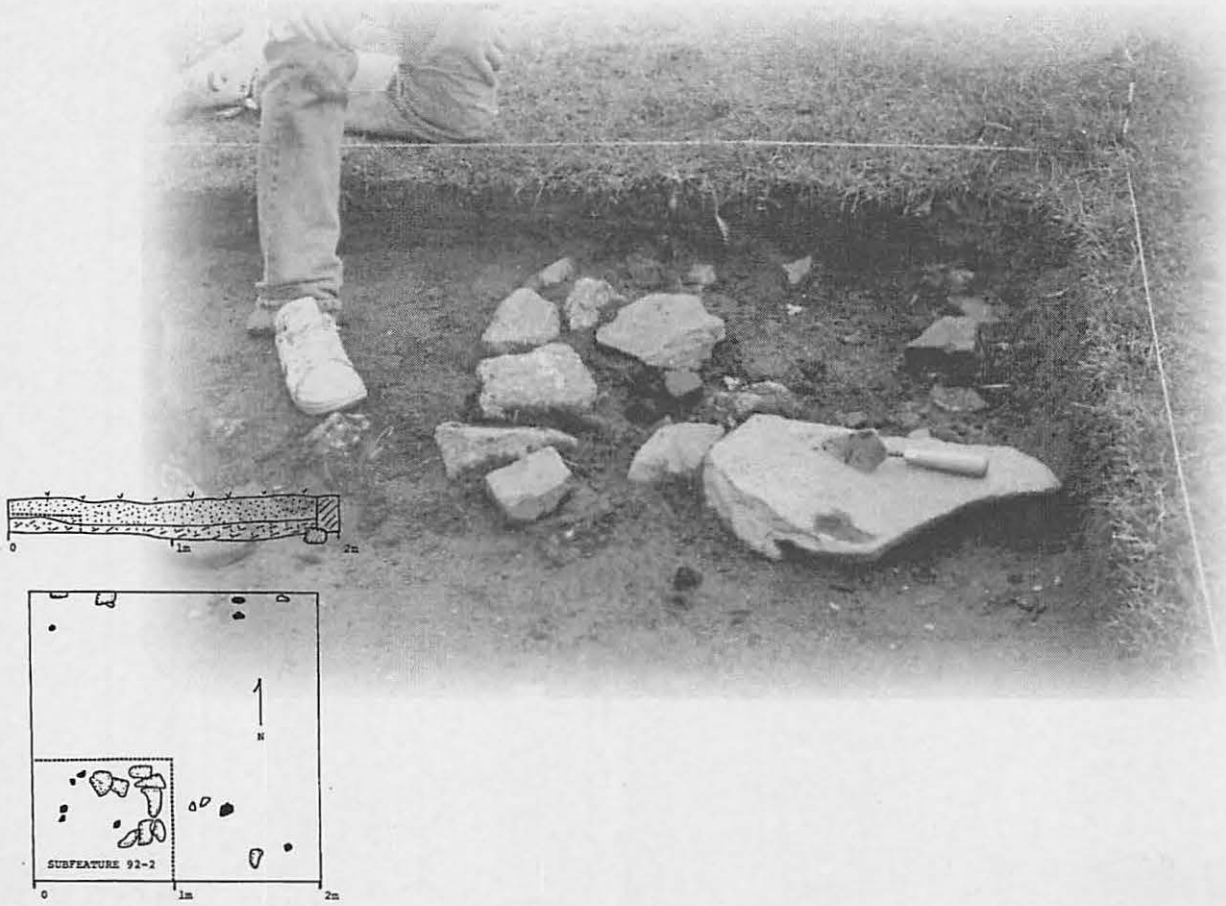
NOVA SCOTIA
MUSEUM

CURATORIAL REPORT 95

Archaeology in Nova Scotia 1992, 1993 and 1994

Edited by Stephen Powell



A FAMILY *of* 25 MUSEUMS

NOVA SCOTIA
Tourism and Culture

CURATORIAL REPORT 95

Archaeology in Nova Scotia 1992, 1993 and 1994

Edited By Stephen Powell

History Section
Nova Scotia Museum
Nova Scotia Department of Tourism and Culture

Nova Scotia Museum *Curatorial Reports*

The Curatorial Reports of the Nova Scotia Museum make technical information on museum collections, programs, procedures and research, accessible to interested readers.

The reports may be cited in publications, but their manuscript status should be clearly indicated.

TABLE OF CONTENTS

INTRODUCTION

This is the fifth edition of our Archaeology in Nova Scotia series. Included are archaeological reports that the Nova Scotia Museum received digitally on disk for the years 1992, 1993 and 1994. Reports not submitted on disk were excluded from this edition. All of the reports, with the exception of the last one by Deal and Rutherford, were submitted as partial fulfilment of Heritage Research Permit requirements. Several of the reports have been edited for publication purposes.

The remaining Heritage Research Permit reports for the years covered by this edition that were not available on disk are listed below.

A1992NS01 DWYER T. N.S. Shipwrecks
A1992NS02 STEWART B. Birchtown Landfill
A1992NS04 THOMSON C. Sewage Line, Herring Cove-Purcells Cove
A1992NS05 SKANES R. Purcells Cove, HHCI
A1992NS06 STEWART B. Hwy. 104, Ft. Lawrence Ridge
A1992NS07 DAVIS S. Hwy. 104, Saltsprings Interchange
A1992NS08 DAVIS S. Hwy.104, Great Village/Moose River
A1992NS09 DAVIS S. Stellarton Pit Mine, Wimpey Seam
A1992NS10 THOMSON C. Ile Haute
A1992NS11 DAVIS S. Truro 102/104 Interchange to Masstown
A1992NS12 STEWART B. Highway 104 at River Phillip
A1992NS13 STEWART B. Nictaux Sand & Gravel Extraction
A1992NS14 STEWART B. Proposed East Lake Landfill Site
A1992NS15 STEWART B. The Fox Ridges Site, Shelburne County
A1992NS16 NIVEN L. Uniacke Estate (Published as Curatorial Report #74)
A1992NS17 CHUTE J. Big Indian Lake, Halifax County
A1992NS18 HISELER G. Fort Saint Louis Site
A1992NS19 DAVIS S. Summerville Beach
A1992NS21 DAVIS S. Sullivans Creek Surface Mine
A1992NS23 COCHKAN G. Bristers Salvage Yard, NW Arm
A1992NS24 POWELL S. Upper Northfield
A1992NS26 LOCKHART B Waverley Quarry Lands
A1992NS27 POWELL S. Souriquois-Barrington Passage Transmission Line
A1992NS28 THOMSON C. New Glasgow-Sutherlands River
A1992NS29 DAVIS S. Halifax Harbour Cleanup,Park Avenue
A1992NS30 DAVIS S. Morris Lake-CFB Shearwater
A1992NS31 DAVIS S. Hwy 125, Coxheath to Hwy 105
A1992NS32 DAVIS S. Hwy 101, Middle Sackville to Ellershouse
A1992NS33 STEWART B. Tidewater Construction Property, South of Waverly

A1993NS01 DWYER T. Operation Wreckfind
A1993NS02 NASH R. DeCoste Farm, Delorey Island, Antigonish Co
A1993NS04 DAVIS S. Morris Lake-CFB Shearwater
A1993NS05 SNOW H. Millar Site-Kerr Point
A1993NS06 THOMSON C. Junction Hwy107-Akerley Bvd

A1993NS07 POWELL S. Maccan Generating Station
A1993NS08 DAVIS S. East Lake Landfill Site
A1993NS10 O'NEILL C. Fox Ridge landfill, Shelburne County
A1993NS11 THOMSON C. Ship Point Incineration Plant, Port Hawkesbury
A1993NS12 SANDERS M. Bain Site, Chegoggin, Yarmouth County
A1993NS13 DEAL M. St. Croix (BfDa-1)
A1993NS14 DAVIS S. Wallace
A1993NS15 HISELER G. Wallace Museum
A1993NS17 LATTA P. Shubie Canal, Lock 4
A1993NS18 NIVEN L. Birchtown Archaeological Survey
A1993NS19 FINLAY W. Cape Breton Portuguese Settlements
A1993NS20 SKANES R. Chameau
A1993NS21 O'NEILL C. Birchtown Transmission Line
A1993NS22 SKANES R. Ives Cove Diffuser Site, Halifax Harbour
A1993NS23 FINLEY S. Victoria Park Armoury, Sydney

A1994NS01 THOMSON C. Diffuser Site, Halifax Harbour
A1994NS02 DWYER T. Operation Wreckfind
A1994NS03 DAVIS S. Shubenacadie Canal
A1994NS04 BLANKENSHIP D. Mahone Bay
A1994NS05 DAVIS S. Highway 107, Musquodoboit Hbr to Head of Jeddore
A1994NS06 DAVIS S. Chegoggin
A1994NS07 THOMSON C. Hwy 103 Barrington By-pass
A1994NS09 THOMSON C. Kingsburg Beach
A1994NS11 WATSON F. Western Shore
A1994NS12 DAVIS S. Truro, Hwy 102/104 Interchange
A1994NS14 DAVIS S. Birchtown
A1994NS15 THOMSON C. Boat Harbour
A1994NS16 DAVIS S. Bicentennial Highway/Hammonds Plains
A1994NS17 DAVIS J. Shipwreck Search Program
A1994NS18 THOMSON C. Glenbourne Development
A1994NS19 MACKINNON R. East Coast Cape Breton
A1994NS20 DAVIS S. North outfall, Lake Charles
A1994NS21 THOMSON C. Pleasant Bay
A1994NS22 DAVIS S. Ragged Lake Business Park
A1994NS24 WILLIAMS P. Old Rockingham Inn
A1994NS25 SANDERS M. Birch Cove Lakes
A1994NS26 THOMSON C. Eskasoni
A1994NS27 THOMSON C. NSHCC, Preston
A1994NS28 FINLEY S. Victoria Park Armoury, Sydney
A1994NS29 DAVIS S. Shubenacadie Canal Lock 1

A SHELL MIDDEN IN HALIFAX HARBOUR

Heritage Research Permit A1992NS03

by Helen Sheldon

Introduction

While information abounds of the historic period occupation of Halifax Harbour, little is known of Native occupation of the area before the arrival of Europeans. Most of the prehistoric finds within the Halifax-Dartmouth Metropolitan area are isolated occurrences such as the scraper from Hartlen Point, the celt from Lake Charles (Nova Scotia Museum site files) and the Chambers fluted point (Christianson 1991). One site is known from the north end of Lake Micmac, BeCv-7, but it is submerged and has not been closely investigated. The closest prehistoric site to Halifax-Dartmouth excavated in good condition is Whites Lake (Davis 1991).

Although the existence of a shell midden on McNabs Island has been known since at least the turn of the century, little information has been recorded about the site. Even its location was uncertain until it was rediscovered by the author in 1991. The author received the 1992 Nova Scotia Museum Research Grant in Archaeology to gather more data on the site through test excavations. The main objectives of the testing program were to determine approximate age (cultural affiliation), horizontal and vertical limits of the deposits and general condition of the site.

Previous Work

The earliest known reference to BdCv-4 is by H.W. Hewitt, who, in a lecture given before the Nova Scotia Historical Society in 1912, stated that "Some years ago a strip of land on the north shore of Back Cove was exposed. Clam shells were found to the depth of about four feet for a distance of about 30 yards" (Hewitt 1912: n.p.). Several decades later, in 1969, John Erskine officially reported the site to the Nova Scotia Museum; but no information was retained regarding its age, extent or location, and no artifacts from the site are known to exist in the Museum collections.

The site was located by the author in 1991 as part of a survey of the north end of McNabs Island conducted under heritage research permit A1991NS08 (Jacques Whitford Environment Limited 1991). At the start of the survey it was not apparent whether the site was located on Back Cove or on Indian Point. Because sites on Indian Point were of considerable interest to the goals of the 1991 survey, it was deemed advisable to confirm the precise location of BdCv-4. As the site did indeed lie outside the 1991 study area it received only cursory examination at that time. In 1991 three flakes and some fragments of shell (*Mya arenaria*) (Derek Davis, personal communication) were recovered when the sod was gently lifted to confirm the presence of the site. No test pits were excavated. Shell was not found throughout the entire 30 m stretch of the site; rather, there appeared to be two concentrations, one at the east end and one at the west end. It appeared that the site was relatively

undisturbed, in no danger from either cultural or natural forces.

Methodology

The majority of the background research was conducted for the 1991 survey on McNabs Island. This included reviewing files and other documentation at the Nova Scotia Museum and the Public Archives of Nova Scotia, and interviewing local and professional informants. Permission for the 1992 excavation was received from the landowner, the Nova Scotia Department of Natural Resources.

Initially, the site appeared to be in good condition, relatively undisturbed by either natural or human activity. Although it lies close to the shore, it is in an area of depositional rather than erosional beach, and thus has been effectively protected from shoreline erosion. Because no artifacts, shell fragments or other cultural indicators are visible on the surface, the site is rather difficult to detect and thus probably has escaped relatively unscathed from the amateur artifact collector. This anonymity has served to protect the site, thus every effort was made not to advertise its location during testing. It was felt that local pot hunters would severely disturb the deposits should their location become known (as is the case in several historic middens on the island). Excavation began on a Monday and ended on a Friday so the site would not be open and visible on a weekend. Work also took place as early in the spring as ground conditions would permit in order to be present on McNabs Island during a time of low visitation.

Over a five day period from May 11 - 15, 1992, the author, assisted by Laird Niven, conducted test excavations at BdCv-4. Excavation was conducted in the following manner:

> A baseline was established with the datum point at the eastern extreme of the site. The baseline ran at a compass bearing of 115°, approximately along the east-west axis of the site. All pits were measured off the baseline (Figure 1).
>
> The four 1 x 1 m test pits were excavated by trowel in arbitrary levels of 5 cm except where natural stratigraphy was encountered. Artifact locations were measured in three coordinates except for flakes and bone fragments which were given level designations only. The test pits were excavated to sterile soil, or to depths where water or boulders impeded further progress.
>
> Soil profiles were drawn of distinctive pit walls and a site map was made showing the spatial relationship of all pits and major natural features.

Results

BdCv-4 is not conspicuous; no artifacts or features are visible on the surface. The site lies within a band of mature spruce trees, with some birch to the north and east. Further inland, up the sloping bank, is an open birch forest with bracken and grass undergrowth. A depositional cobble beach is located 5 m south of the site.

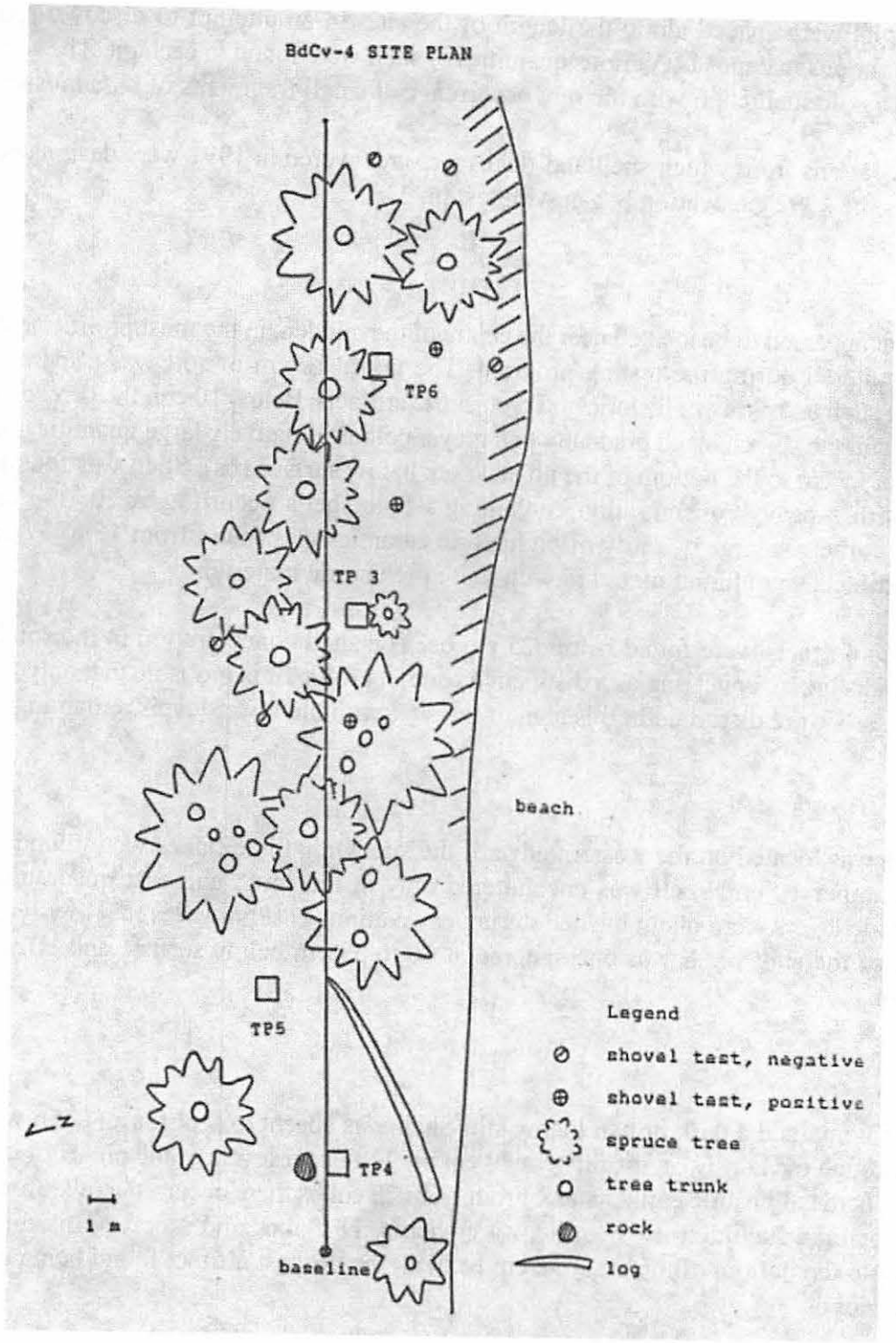

BdCv-4 SITE PLAN
TP6
TP 3
TP5
TP4
beach
baseline
1 m
N
Legend
shoval test, negative
shoval test, positive
spruce tree
tree trunk
rock
log

Figure 1

Test pits

Four test pits were spaced along the length of the site in an attempt to discover spatial and/or cultural variations in deposits. Various quantities of shell were found in each pit. The shell consisted primarily of soft-shell clam with the rare occurrence of small fragments of blue mussel.

The two locations from which shell and flakes were recovered in 1991 were designated test pits 1 and 2, thus the 1992 excavation began with test pit 3.

Test Pit 3

This test pit appeared to be located near the centre of the midden, in the most prolific artifact-bearing area encountered during the testing program. The upper 10 cm of soil was a loamy black sand containing shell and a mix of historic and prehistoric artifacts. Below 10 cm, the percentage of gravel increased and the soil changed gradually to a greyer colour. Relatively large quantities of bone were found from 15 cm to the bottom of the pit at 41 cm below surface (bs). Shell was found throughout the pit, with a heavy concentration containing whole shells occurring at 20 - 30 cm bs in the southeast corner. A large quantity of prehistoric ceramics was found from 15 to 37 cm bs; a few historic artifacts were found mixed in with these prehistoric materials.

No historic artifacts were found below 25 cm bs. The shell concentration in the southeast corner seemed undisturbed, appearing as a distinctive band in profile. It is probable that only the upper 20 - 25 cm of soils were disturbed in this area of the site, with the lower levels remaining intact.

Test Pit 4

Test pit 4 was located on the western edge of the site. Only three flakes were found in the pit, all from the upper 10 cm; shell was encountered only in the south and east quadrants. No natural stratigraphic layers were distinguished during excavation. Test pit 4 was in a low-lying, relatively wet area of the site; water was encountered at 30 to 33 cm below surface and effectively halted excavation.

Test Pit 5

Test pit 5 contained a dark brown loamy silt. Shell was absent except for a 30 cm wide band that curved through the northwest quadrant at 20 cm bs. The upper levels of the pit, to 14 cm bs, yielded only two sherds of historic earthenware. From 14 to 20 cm bs there occurred a mix of prehistoric and historic material including two earthenware sherds, 18 flakes and a core. This mix of artifacts continued to the bottom of the pit at 32 cm bs, with the deepest artifact found being a machine cut nail at 27 cm bs.

Test Pit 6

Test pit 6 contained a mixture of historic and prehistoric material to 23 cm bs; below this depth only prehistoric material was found. A biface tip at 10.5 cm bs and a celt fragment at 24 cm bs were the most distinctive lithics recovered from the pit and from the entire excavation. Prehistoric ceramics occurred throughout the pit from 9 to 35 cm bs. Only two pieces of calcined bone were recovered from the pit, with none of the quantities of bone that were found in test pit 3.

Artifacts

A total of 277 prehistoric and historic artifacts were recovered during the 1992 excavations.

Prehistoric Lithics

Relatively few lithic artifacts were recovered during the testing. The most notable was a celt, broken along its length with the working edge missing. It is a finely ground specimen with bevelled edges. The solitary scraper found at the site was an elongated chalcedony tool, crudely retouched along its distal margin. The only biface was a tip fragment, 17 mm long, of chalcedony. The remaining lithics consisted of two cores, one bipolar core, two utilized flakes and one retouched flake. A round cobble was found that bore no signs of modification, but is of the appropriate size and shape to have been suitable for a bolas stone.

Of the 57 flakes recovered, 43 were quartz, 11 chalcedony and one quartzite.

Prehistoric Ceramics

The 82 ceramic sherds were all recovered from test pits 3 and 6. They represent an undetermined number of vessels. Eighteen sherds display no decoration, however, because many of the undecorated sherds are badly worn or missing one face, their presence cannot be taken as an indication of undecorated vessels in the artifact sample. Most of the sherds are grit tempered with only three having shell temper.

The majority of the decorated sherds are dentate stamped, mostly with rocker stamping, and are grit tempered. Two sherds, including the only rim, have alternate notched stamping (Allen 1981:73), with grit temper. One sherd displays cord-wrapped-stick decoration and has shell temper.

A concentration of 27 sherds was found in test pit 6. These sherds appear to represent one vessel. It has grit temper and is decorated with a combination of techniques. Dentate stamping is apparent, as is a trailed diamond pattern. The vessel also exhibits an applied collar decorated along its length with alternating punctates.

The only rim sherd has a flat lip with a slightly out-flaring rim. The lip surface is decorated with alternate notched stamping, aligned perpendicular to the vessel walls (Figure 2).

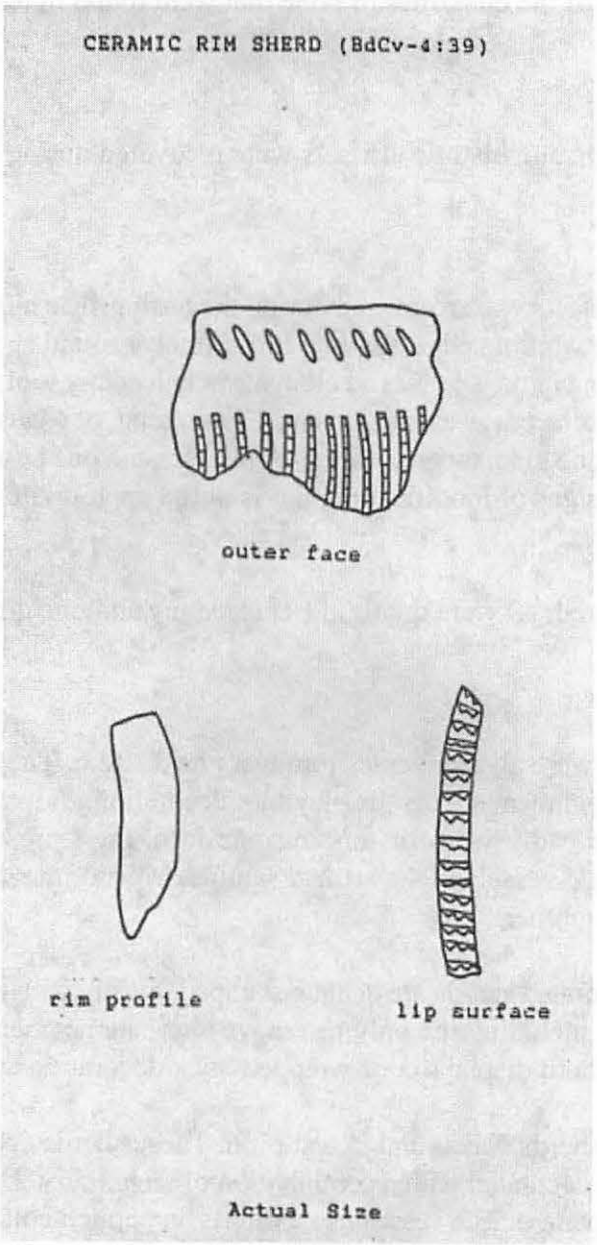

CERAMIC RIM SHERD (BdCv-4:39)
outer face
rim profile
lip surface
Actual Size

Figure 2

Bone

Unfortunately, due to budgetary constraints, the bone could not be sent for analysis and identification. The author was able to classify the 106 bone fragments as follows:

6 teeth, including one with a section of jaw attached
4 claws
7 fish vertebrae of various sizes
2 fragments of calcined bone
87 miscellaneous bone fragments

Historic Artifacts

Twenty-two historic artifacts were found scattered throughout the levels of the four test pits. These were identified as follows:

metal: 3 square shank, machine cut nails
1 nail with a large quantity of adhering corrosion
1 segment of ferrous wire, 4 mm in diameter

glass: 1 fragment brown bottle glass
1 fragment aqua pane glass

ceramics: 2 sherds stoneware, cream body, clear glaze, jar/crock
1 sherd stoneware, mottled brown exterior glaze, utilitarian
1 sherd porcelain, rim, transfer-printed blue decoration, teacup
1 sherd earthenware, red body, white interior slip with glaze, Maritime ware
10 sherds white earthenware, 3 with blue transfer-print decoration, 1 rim sherd, 1 footring fragment, tableware

All the historic artifacts date from the mid nineteenth century to the early twentieth century. The earthenwares are primarily of the blue transfer-printed type popular during this time. A single sherd of Maritime ware dates to the latter half of the nineteenth century.

Discussion

BdCv-4 is a prehistoric site that has been extensively disturbed. Historic artifacts occur throughout all levels of the site except for the very deepest pockets such as the lowest levels of test pit 3 where undisturbed bands of shell still existed. This disturbance appears to have been exceedingly thorough and even. It bears a strong similarity to a plow zone, although such activity is improbable in this boulder-strewn landscape. The disturbance is thought to have originated from one of two possible sources:

(1) A search of archival maps revealed the presence of a building and associated wharf on the north shore of Back Cove, near the site, in 1853 (PANS 1853-2320). Earlier maps from 1808, 1826 and 1827 (PANS Y.26 239-1808, PANS 1826-345, PANS R/239-1827) show buildings on the island but none within the vicinity of Back Cove. Later maps of 1886/88 and 1917 (PANS N.32 239-1886/88, PANS CHS 311) also show no buildings in the area. It is possible that the resident of the 1853 building discovered and disturbed the site, thus accounting for both the disturbance and the presence of nineteenth century artifacts.

(2) When the site became exposed at the turn of the century, as noted by Hewitt (1912), it may have been the subject of extensive excavation, by either amateurs or professionals. No record of such work has been found to date.

Given the artifact assemblage recovered from the site, the most reliable method of assigning cultural affiliation to the prehistoric occupants of BdCv-4 is through study of the ceramics. The vast majority of ceramics are decorated with the dentate stamping technique, combined with grit temper. This style of vessel is earlier than cord-wrapped stick vessels, which were tempered with either shell or a combination of grit and shell. In the Maritimes dentate vessels have been found at several sites and are commonly attributed to the Middle Ceramic Period. At the Oxbow site in New Brunswick grit-tempered dentate-stamped vessels are found before c 1600 BP, after which cord-wrapped stick vessels appear (Allen 1981). Dentate vessels also occur in the early occupations from Melanson, with a median date of 1760 +/- 60 BP. They were replaced by cord-wrapped stick vessels by 790 +/- 80 BP (Nash and Stewart 1990). Sites in Nova Scotia dating to the Late Ceramic Period show a marked preference for cord-wrapped stick decorated vessels. Such was the case at Delorey Island, with an early date of 1595 +/- 80 BP (Nash 1986), at the Brown site, 1230 +/- 70 BP (Sheldon 1988) and at Eel Weir, 910 +/- 80 BP (MacIntyre 1983). Both Delorey Island and the Brown site had one dentate vessel, suggesting that the early dates from these sites may be during the transition period between decorative styles.

Conclusions

BdCv-4 has been extensively disturbed at some time in the past. The disturbance appears to date from the nineteenth or early twentieth century. Certainly no signs of recent potting are visible.

The site is long and narrow, spread along 36 metres of shoreline, but only approximately six metres wide. The predominance of grit-tempered dentate-stamp decorated ceramic vessels dates the site to the Middle Ceramic Period, prior to c 1600 BP.

Further intensive archaeological investigations at BdCv-4 would serve little purpose, other than the possibility of recovering diagnostic lithic artifacts. With so much of the site apparently disturbed, excavation of the few remaining pockets of pristine deposit probably would yield little conclusive data. Because relatively little damage could be done through inexperienced excavation and because of its proximity to Halifax and Dartmouth, the site would be a good location for an archaeological field school for either high school or university students.

Conservation and preservation from natural destruction is not a problem at the moment as the site is in no danger from erosion, submergence or other destructive factors. Human disturbance is not occurring at present, although with the possible future development of McNabs Island either as a park or for other purposes, the situation could change rapidly. The Nova Scotia Museum and the Nova Scotia Department of Natural Resources should be aware of the existence of the site and be prepared to prevent future infringement upon it.

References

Allen, Patricia M.

1981 The Oxbow Site: Chronology and Prehistory in Northeastern New Brunswick. Archaeology Branch Historical Resources Administration. Fredericton.

Christianson, David J.

1991 Report on the Chambers Fluted Point Preform. In Archaeology in Nova Scotia 1987 and 1988. S. Davis et al (eds): 7-12. Curatorial Report No. 69. Nova Scotia Museum. Halifax.

Davis, Stephen A.

1991 Excavations at Whites Lake, 1987. In Archaeology in Nova Scotia 1987 and 1988. S. Davis et al (eds): 57-68. Curatorial Report No. 69. Nova Scotia Museum. Halifax.

Hewitt, H.W.

1912 Lecture on McNabs Island. Paper read before the Nova Scotia Historical Society 1 December 1912. PANS MG100/184 no 32.

Jacques Whitford Environment Limited

1991 Final Report to Halifax Harbour Cleanup Inc. on Heritage Resources Survey of McNabs Island. Unpublished report on file Jacques Whitford Environment Limited, Dartmouth.

MacIntyre, Judith A.

1983 A Chronology for Eight Prehistoric Nova Scotian Sites. Unpublished Honours thesis. Department of Anthropology, Saint Mary's University. Halifax.

Nash, Ronald J.

1986 MI'KMAQ: Economics and Evolution. Curatorial Report No 57. Nova Scotia Museum. Halifax.

Nash, Ronald J. And Frances L. Stewart

1990 Melanson: A Large Micmac Village in Kings County, Nova Scotia. Curatorial Report No 67. Nova Scotia Museum. Halifax.

Nova Scotia Museum

1991 Archaeological site files. History Section, Nova Scotia Museum. Halifax.

Sheldon, Helen

1988 The Late Prehistory of Nova Scotia as Viewed from the Brown Site. Curatorial Report No 61. Nova Scotia Museum. Halifax.

Public Archives of Nova Scotia (PANS)

1808 Plan of the Peninsula and Harbour of Halifax. PANS Y.26 239-1808.

1826 Chart of Part of the Coast of Nova Scotia. 1826. Sheet VII. PANS H.O. 345.

1827 Plan of the Peninsula and Harbour of Halifax. PANS R/239-1827.

1853 Nautical Charts: published by the Hydrographic Office of the Admiralty 20 Oct., 1854. PANS 1853-2320.

1886-1888 Halifax and Area. Sheet No. 7. PANS N.32 239-1886/88.

1917 Halifax. Canadian Hydrographic Service. No. 311. PANS CHS 311.

A STUDENT EXCAVATION AT THE ALBION IRON FOUNDRY

Heritage Research Permit A1992NS20

by Helen Sheldon

Introduction

On July 31, 1992 the iron foundry site at the Museum of Industry in Stellarton was the scene of a training/orientation dig by 30 junior high school students. The students were completing the final day of a week-long Summer Academy at St. Francis Xavier University. As part of the last day, it had been arranged through the Museum of Industry that they be introduced to industrial archaeology.

It was decided to use a hands-on approach in which the students would spend two to three hours actually excavating part of BjCp-5, the iron foundry. The objective of the exercise was to teach about archaeology in general and about industrial archaeology in the Pictou area in particular.

Site History

BjCp-5 was first discovered in 1987 during a survey designed to locate the site (Sheldon 1991a). The site was known to exist from historical documentation and local information but its exact position and condition were not known until 1987. Further excavation in 1988 (Sheldon 1991b) revealed a greater portion of the foundry and exposed some interesting areas for further exploration. One such area was a vent-like feature that disappeared intact into the sides of the excavation. Unfortunately, excavation since 1988 has been limited to a few one-day volunteer efforts which have not revealed much additional information about the foundry.

The iron foundry was constructed by the General Mining Association in 1829. Known as the Albion Foundry, it operated for an unknown number of years, producing 45 tonnes of iron (Andrea n.d.). It is generally believed that the foundry was no longer operational by the turn of the century, with the last building remnant having collapsed around 1920.

Methodology

On July 29, 1992, the author, with four members of the Museum of Industry staff cleared sod from the areas to be excavated, strung off the pits and otherwise prepared the site for excavation. Three pits, K, L and M, originally opened in 1989 for a one-day volunteer session, were included in the 1992 excavation. The backdirt which had been replaced in 1989 was removed to the depth of a plastic sheet which marked the 1989 closing levels. An additional four 2 x 2 m pits were opened west of the 1989 pits. These new pits were labelled N, P, Q and R.

Upon arrival, each student was given a trowel, dustpan and bucket, and told to take a position in a pit. They were given information on the history of the site and on archaeological excavation techniques. All backdirt was screened through one of two 1/4 inch mesh screens wielded by the museum staff. All artifacts were bagged according to pit and level. At the end of excavation a layer of plastic was laid at the closing levels and the pits were backfilled.

The artifacts were cleaned and catalogued by the author.

Results

Due to the short amount of time available excavation did not proceed very far. Most pits closed upon the level at which they began.

A large number of artifacts was recovered, 829 in total. Both the large number and the type of artifact was consistent with earlier findings at the site. Most of the artifacts were ferrous and foundry-related in nature. 666 of the artifacts were metal, with 441 of these being nails. All except for 11 of the nails were the square-shaft ferrous variety so prevalent in the earlier excavations. The 11 exceptions included 7 wire nails and 4 non-ferrous types. Other artifacts included 112 risers, 9 mould clamps, 8 wedges and several pieces of a cast iron stove.

A concentration of roofing slate was found in pit N, level 2, with 57 of the 77 pieces recovered occurring in this level. The remaining 20 pieces were found either in N-1 or P-2, with none occurring in other areas of the excavation.

Pit K was the most interesting in terms of features. The pit closed upon a level where the top of the vent-like feature, what is thought to be the original floor level of the foundry, and the top of the exterior brick wall all were exposed. Due to the increased intricacy required for excavation in the pit, the lack of time for excavation and for correct recording, the pit was closed upon the surface of these features, leaving them untouched until a more controlled excavation is possible.

Conclusions

The large number of ferrous foundry-related artifacts discovered in previous excavations continued to be found at the site. Features revealed in Pit K suggest the continuation of features already discovered and recorded in 1988, and suggest that much of the original foundation may be intact. The concentration of roof slate in two pits may indicate location of roof collapse, although it has yet to be confirmed that the foundry was slate-roofed; the slate may have come from one of several nearby buildings.

It is strongly recommended that the half and one day excavations not continue until a concentrated effort can be made to excavate the area already opened. Proper excavation and, in particular, recording, is extremely difficult to do in one day bursts, where the continuity of each pit is threatened. Excavation can be done by volunteers, but should be carried out over several weeks, until

each pit can be excavated entirely and continuously.

References

Andrea, Christopher

n.d. Nineteenth-century Nova Scotia Iron Works. Early Ironmaking. *CIM Historical Metallurgy Notes.*

Sheldon, Helen

1991a Preliminary Excavations at a Nineteenth Century Iron Foundry. In *Archaeology in Nova Scotia 1987 and 1988.* S. Davis et al (eds): 23-42. Curatorial Report No. 69. Nova Scotia Museum. Halifax.

1991b Preliminary Excavation of the Albion Iron Foundry. In *Archaeology in Nova Scotia 1987 and 1988.* S. Davis et al (eds): 129-164. Curatorial Report No. 69. Nova Scotia Museum. Halifax.

ARCHAEOLOGICAL INVESTIGATIONS AT CASTLE FREDERICK, UPPER FALMOUTH, 1992

Heritage Research Permit A1992NS22

Michael Deal, Shauna Baillie, Michael Bent, Christy Cullingworth, Aileen Gallant, Jo-Anne Goodwin-Bell, Carina Gjerdrum, Craig Hartlen, Cathrine Hostad, Hilde Johannessen, Gerald Lewis, Jeff Mosher, Suzanne Muise, Madeleine Rawlence, Debra Richardson, Jason Quinn and Trish Turliuk

Department of Geology
Acadia University

Introduction

by Michael Deal

The following report was prepared by members of the Fall 1992 Archaeological Field Methods course, Department of Geology, Acadia University. It presents the results of one week of fieldwork and subsequent laboratory analyses of materials from two historic sites at Castle Frederick, Hants County (Plate 1). The fieldwork was directed by Michael Deal (Memorial University) and Steve Powell (Nova Scotia Museum). The students were required to write term papers concerning specific aspects of the fieldwork or laboratory analyses. This report consists of excerpts from these papers that were compiled and revised by the senior author, along with his own contributions concerning aspects of the work not addressed in the term papers.

Previous research

Castle Frederick is the location of the former estate of Joseph Frederick Wallet DesBarres, at Upper Falmouth in Hants County (see map in Figure 1). Archaeological research began at Castle Frederick with a preliminary reconnaissance of the area in 1987 by Brian Preston of the Nova Scotia Museum. At that time, 30 cultural features were recorded that were believed to date from about the early eighteenth century to about 1950 (Preston 1991a). In 1988, reconnaissance continued and in the fall of that year Stephen Davis (Saint Mary's University) conducted two days of test excavation with his SMU method and theory class and volunteers from the Nova Scotia Archaeological Society (Preston 1991b). The three features tested included one Acadian and two post-Expulsion house sites (i.e., cellar features 1, 3 and 4 on Figure 1). The materials collected from two of these features were

Plate 1: 1992 Excavation at the Manor House site (BfDb-4), Castle Frederick. View is toward the East.

analysed by Steve Powell (1988).

During July and August of 1989, members of the Minas Basin Survey crew continued testing and mapping at the four features indicated on the feature distribution map in Figure 2. Marc Lavoie (personal communication, 1992) has identified feature 1 (BfDb-5) as a pre-Expulsion Acadian housesite, based on the recovery of one sherd of Saintonge ware, a few sherds of Rhenish stoneware and the general proportions of the feature in comparison with those at Belleisle and Melanson (Christianson 1984; Crépeau and Dunn 1986; see Nova Scotia map in Figure 2 for these site locations). At feature 4, the Manor House site (BfDb-4), Marc Lavoie, George Heisler and Valarie Monahan uncovered part of a flat, semi-circular feature, constructed from cut siltstone blocks. The raw material for the blocks probably came from a siltstone formation on the South Mountain, just above the property (Stuart Ferguson, personal communication, 1992). Michael Deal and Valarie Monahan also spent two weeks taking elevation measurements for contour maps of BfDb-4, BfDb-5 and the feature distribution map in Figure 2.

In 1990, Michael Deal and Steve Powell returned to Castle Frederick with a group of field school students from Memorial University. In six weeks of excavation at the Manor House, most of the prepared surface was uncovered, as well as part of the base of the central chimney, a portion of the south wall of the basement footing and a well to the north of the structure. Three two by two metre units along the east wall indicated that extensive filling and levelling had taken place in this area. This may indicate surface preparation for a building extension. Thousands of artifacts were recovered, including a Spanish coin with a portrait and name "Carolus III" and a date of 1783.

Historical background

by Christy Cullingworth and Madeleine Rawlence

Castle Frederick is the name that Joseph Frederick Wallet DesBarres gave to his Manor House and estate in what is now Upper Falmouth, Hants County. This estate, located near the head of tide on the Avon River, included the pre-Expulsion Acadian settlement of Pierre Landry (Preston 1991a. A series of pre-Expulsion and post-Expulsion archaeological features at Castle Frederick provides us with a unique glimpse into 18th century Eurocanadian life.

J.F.W. DesBarres was born in either France or Switzerland, in 1721 (see Duncanson 1965:24-29; J. C. Webster 1933). He then emigrated to England and was educated as an engineer. DesBarres came to North America with the British army at the beginning of the Seven Years War between France and England. At the end of the war in 1763, he was given the grant in Falmouth. That same year, he was commissioned to do a nautical survey of the coasts and harbours of North America. These surveys were done between the years 1763 and 1765 and later published under the title The

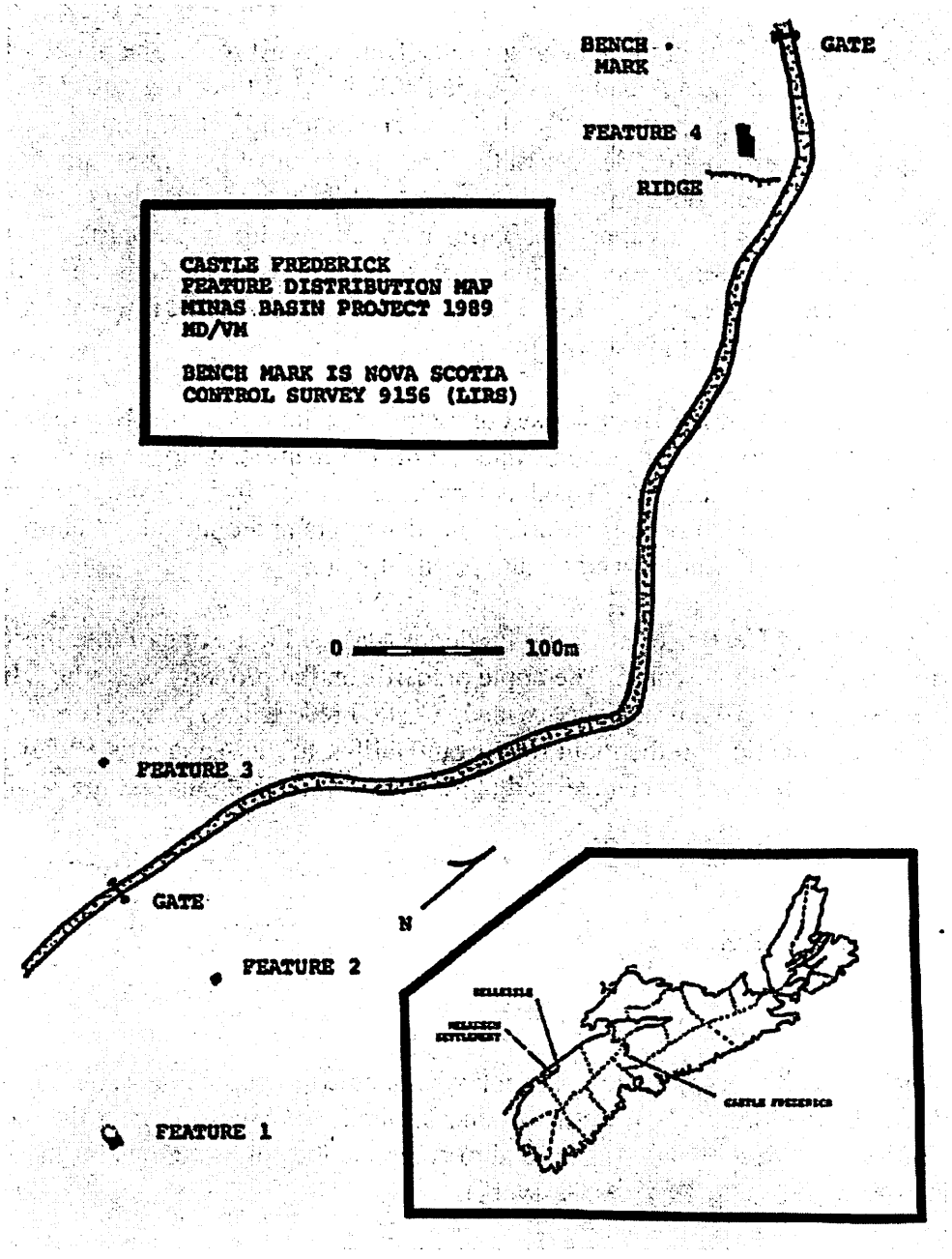


Figure 1: Castle Frederick feature distribution map, based on 1989 survey data. Feature 1 is the Acadian housesite (BfDb-5) and feature 4 is the DesBarres manor house (BfDb-4). A map of Nova Scotia (lower right) indicates the locations of Castle Frederick and the Acadian archaeological excavations at Belleisle and Melanson.

Atlantic Neptune and were some of the best works of this time. DesBarres continued on to become Lieutenant Governor of Cape Breton and later of Prince Edward Island.

The Manor House was built in the mid 1760s (Duncanson 1965). The house was large even by today's standards. One special feature of Castle Frederick was the observatory that was built in 1763 and is considered one of the first in North America (Bishop 1977). It was equipped with some of the most up to date astronomical devices of the time, and many of DesBarres' preparations for the Venus Transit in 1769 were done in this observatory. He was known to have some of the most current information in his profession. DesBarres claimed that his main purpose for wanting an observatory was for the ascertainment of the respective longitudes and latitudes of harbours and places being included in the survey, yet Bishop (1977:436) suggests that it was more important as a location for the calibration of his survey instruments.

Castle Frederick was DesBarres' base during the years he was conducting the coastal survey. He would be away for long periods of time and left his companion, Mary Cannon, in charge. She made Castle Frederick her home and acted as DesBarres' agent. In 1776 she received DesBarres' Power of Attorney. She also bore DesBarres four daughters and one son. When DesBarres left Castle Frederick for good, Mary stayed on and ran the Estate.

The property of DesBarres at Castle Frederick was said to be one of the finest grazing and fruit growing farms in Nova Scotia. The apple orchards on the property were thought to be some of the orchards that the Acadians had once owned. Castle Frederick was also a popular place to stay because of its ideal location on the main road from Halifax to the Annapolis Valley. Among the more famous people believed to have stayed there were Prince William and the famous explorer, Captain Cook.

Summary of 1992 Fieldwork

by Michael Deal

The 1992 fieldwork at Castle Frederick was planned to supplement the previous work of 1988 to 1990. Our initial goals were to conduct limited test excavations at the Acadian house (BfDb-5) and Manor House (BfDb-4) sites and to complete the contour maps for these sites (i.e., a continuation of the 1988 and 1990 survey work).

At the Acadian housesite, two one by two metre test units were excavated (see Figure 2). Unit 92-1 was laid in one metre to the south of the southeast corner of the cellar feature, while Unit 92-2 was situated one metre to the east of the northeast corner of the feature. Three stratigraphic layers were noted in these units (see profile in Figure 3), including a sod layer, a cultural layer consisting of dark brown, sandy clay loam and an underlying layer of small pebbles. The only non-intrusive artifact found in these units came from the level 2 loam in Unit 92-1. The pebble layer may have been added as part of the original house construction phase at the site or even stone infill from

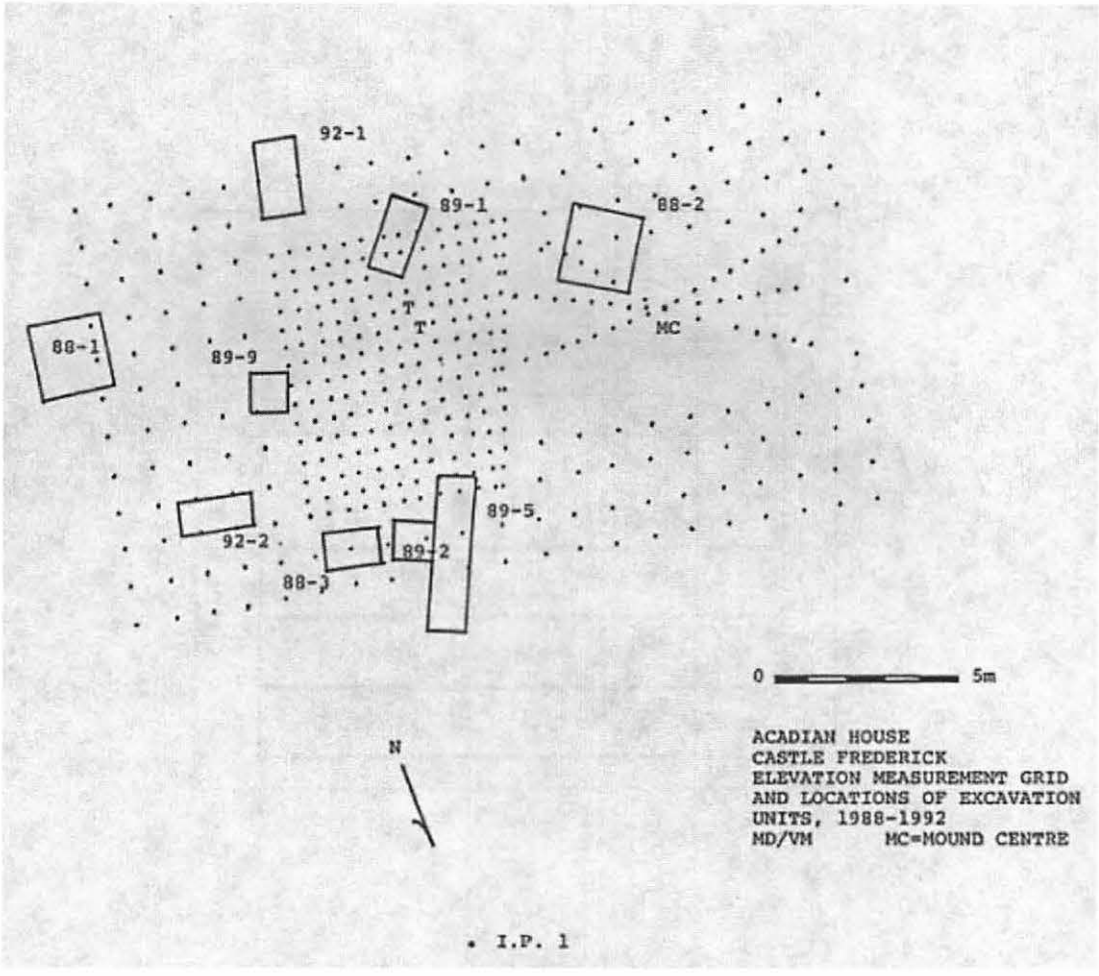


Figure 2: Excavation plan for a Acadian House (BfDb-5), at Castle Frederick. Dots represent points at which elevation measurements were taken in 1989. Closed figures are test excavations units from 1988 to 1992.

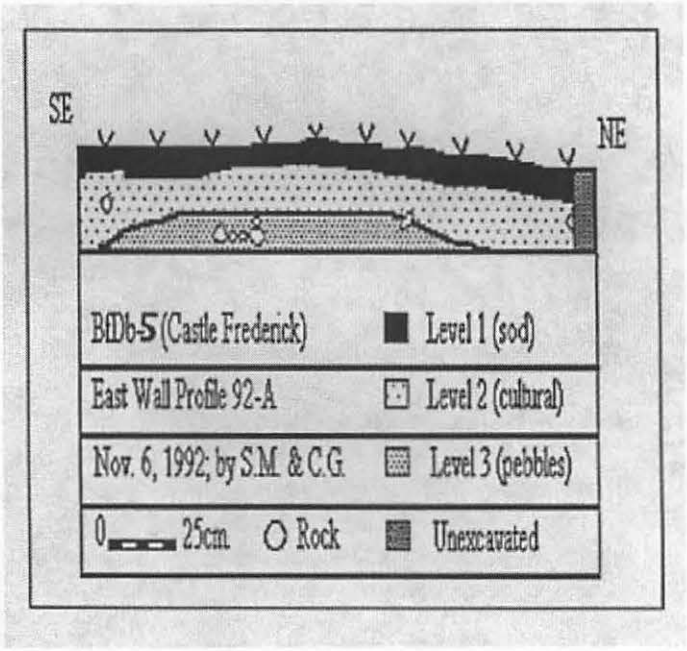


Figure 3: East wall profile, Unit 92-A, at Acadian House site (BfDb-5), Castle Frederick.

wall construction (see Penney 1989:51). The remainder of the work at this site consisted of the mapping of the field stone wall footing (see next section).

At the Manor House site, four 2 by 2 metre excavation units were opened (see Figure 4) and designated Units K, L, M and N to follow the unit sequence established in 1990. Since our time in the field was limited to eight Fridays between September and November, none of these excavation units could be completed to sterile soil. Sheets of plastic were laid over the final floors in Units K, L and M before they were backfilled, so that these units could be reopened and completed during future excavations. Unit K was along the site baseline, one metre east of Unit E of 1990, in order to further expose the sheet refuse associated with the prepared surface feature in Unit E and Unit F of 1989. Units L, M and N were placed in areas not previously tested. Unit M was placed at the northwest end of the cellar feature, in order to expose a portion of the wall footing at that location and to examine the possibility that a cellar door had been located along that wall. Unit L was situated to expose the intersection of the main cellar with the small cellar extension to the west. Unit N was placed along the north wall of the structure, which faces the Coach Road.

The excavation of these units consisted of removing the sod layer and about 10 cm from the top of an underlying destruction layer. The latter can be described as a dark brown, loamy sand mixed with materials from the destruction of the house, including flecks of charcoal, bricks and brick fragments, fragments of window glass and numerous sherds of ceramic, and other artifacts. Subfeatures were identified in units M and L. Subfeature 92-1 is a linear section of field stones that are believed to be the top of the footings of the westernmost wall of the cellar (see Figure 5, Plate 2). This subfeature is about 80 cm in width. Subfeature 92-2 is an angular arrangement of small cobbles and bricks, approximately 80 cm by 1 m in size, located in the southwest corner of Unit L (see Figure 6, Plate 3). Based on its location, relative to the cellar wall to the south, this subfeature may be part of the footing for a doorstep. Large amounts of window glass were also associated with Units M and L, suggesting that there had been windows in the house near these locations. Examples of the distribution of materials within Units K and M are illustrated in Figures 7 and 8. Most of the destruction debris in Unit M was found outside of the house wall footing (i.e., subfeature 92-1). There appears to be two distinct refuse areas in Unit K, although the diversity of materials is similar for the two areas. The western area seems to be an extension of the refuse associated with the prepared surface that was uncovered in 1989-1990.

Topographic Mapping at Castle Frederick

by Jason Quinn and Catherine Hostad

Topographic surveys are made to determine the shape of a site's surface and the location of both natural and cultural features. The topographic map of the Acadian house site at Castle Frederick (BfDb-5) was based on over 350 points of elevation taken by Michael Deal and Valarie Monahan in 1989. At that time, surveying pins were placed at the four corners of the cellar feature. The northwest corner pin was designated as the site datum. The site baseline was established as a

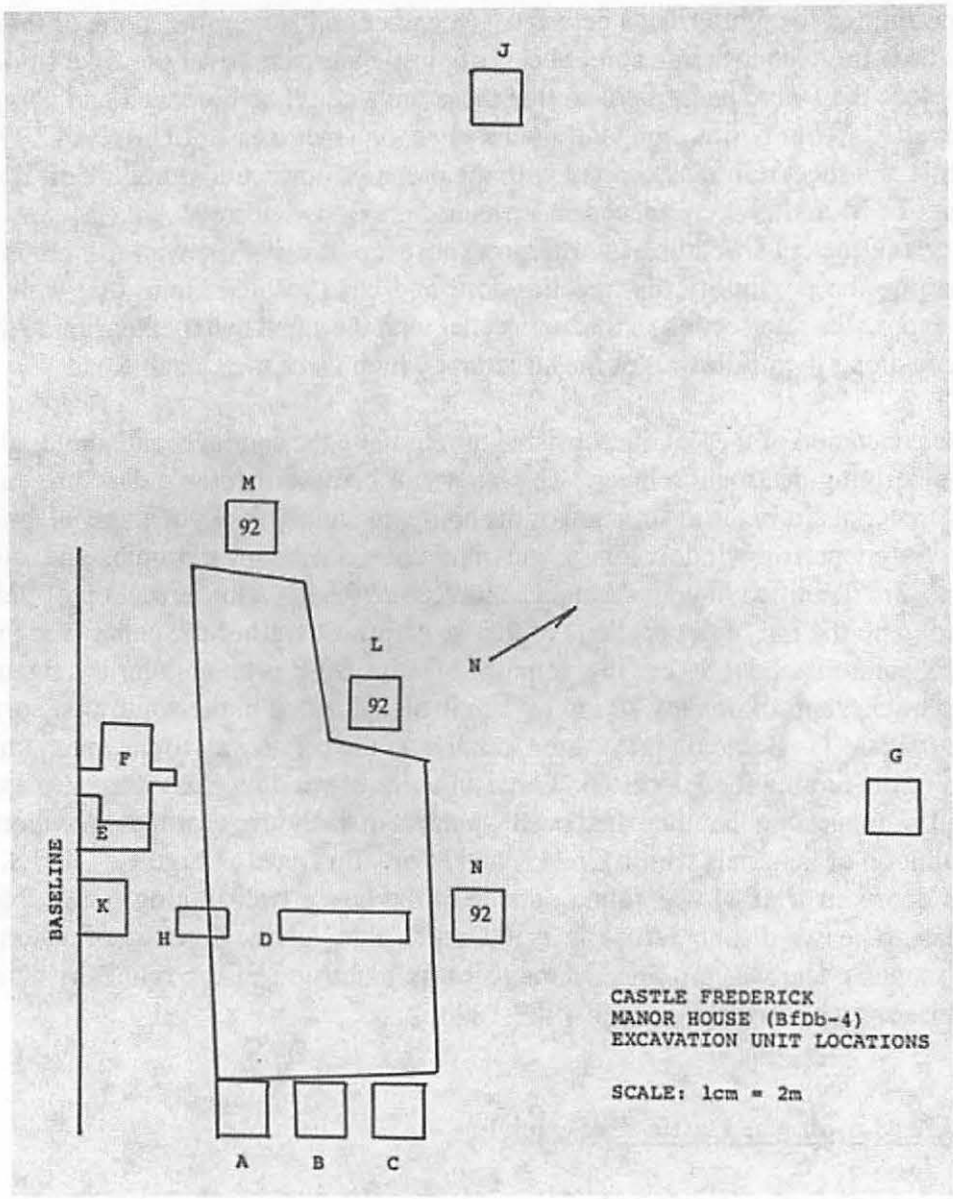


Figure 4: Excavation plan of Manor House site (BfDb-4), Castle Frederick. Based on a 1990 map by Steve Powell.

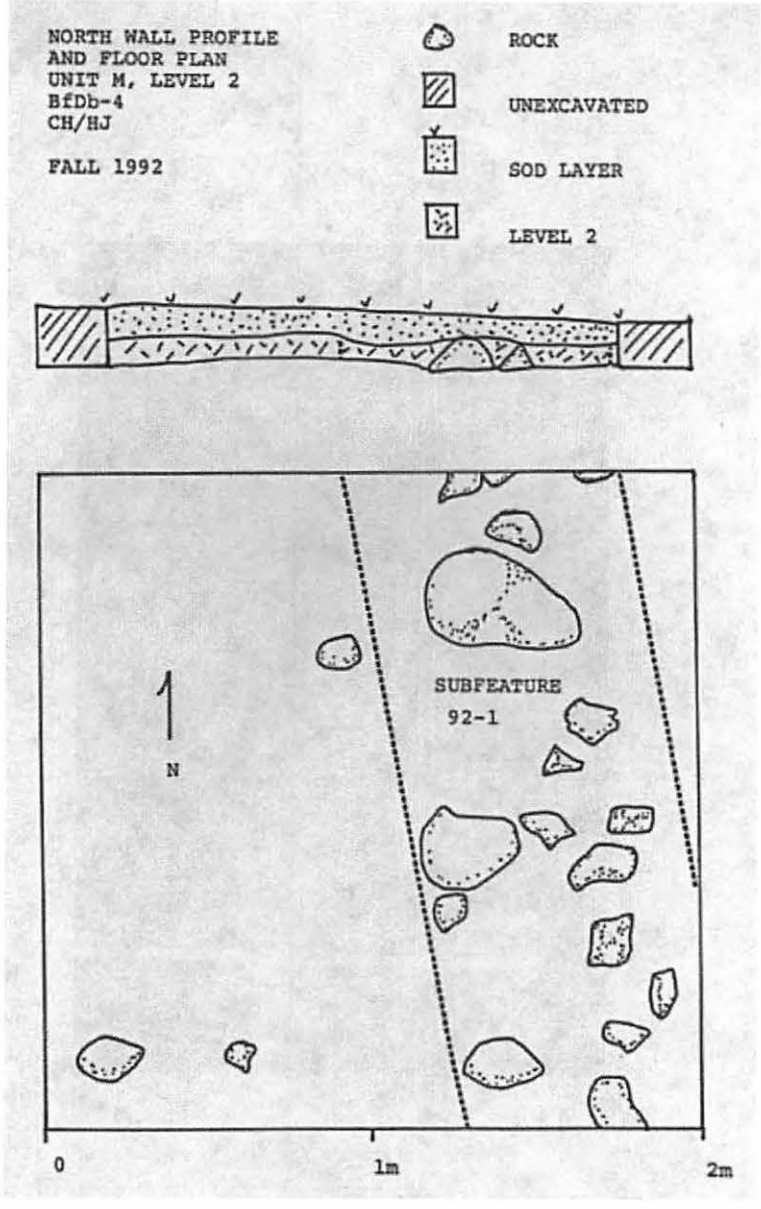


Figure 5: North wall profile and floor plan of level 2, Unit M, Manor House site (BfDb-4), Castle Frederick.

Plate 2: Subfeature 92-1, Unit M, Manor House site (looking south).

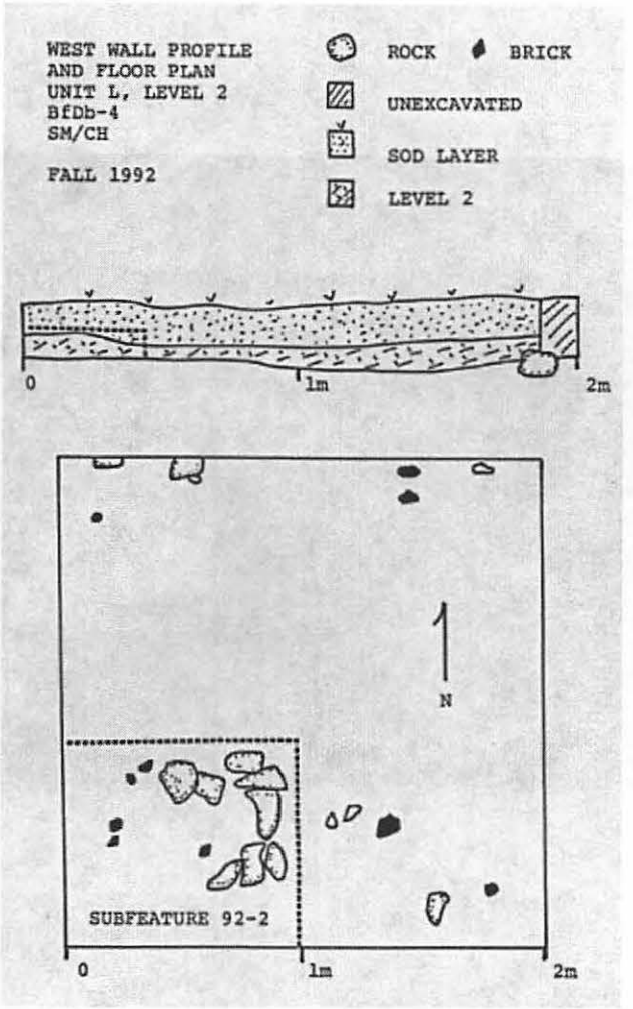


Figure 6: West wall profile and floor plan of level 2, Unit L, Manor House site (BfDb-4), Castle Frederick.

Plate 3: Subfeature 92-2, Unit L, Manor House site (looking south).

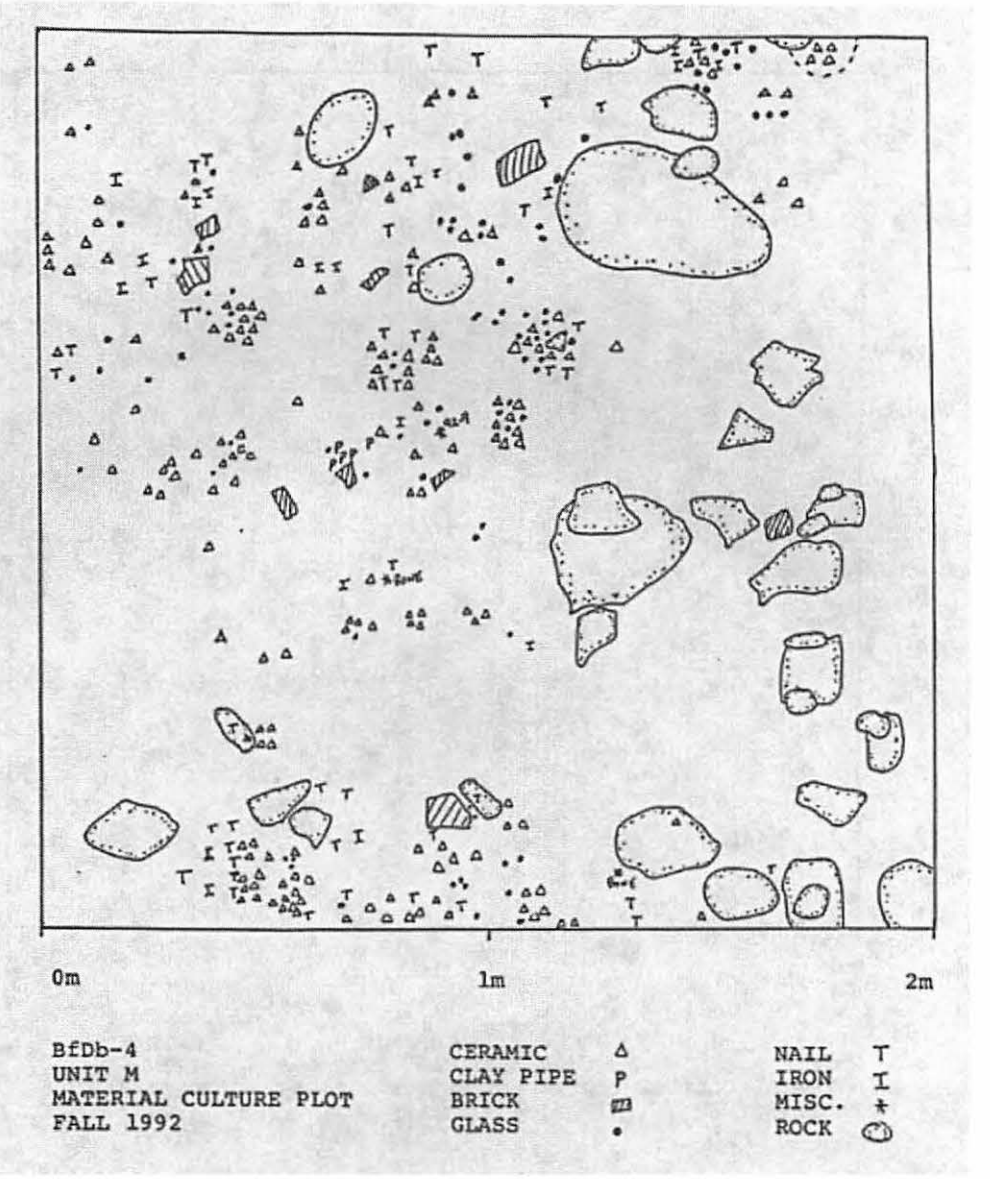


Figure 7: Plot of material culture recovered from Unit M, level 2, Manor House site, Castle Frederick.

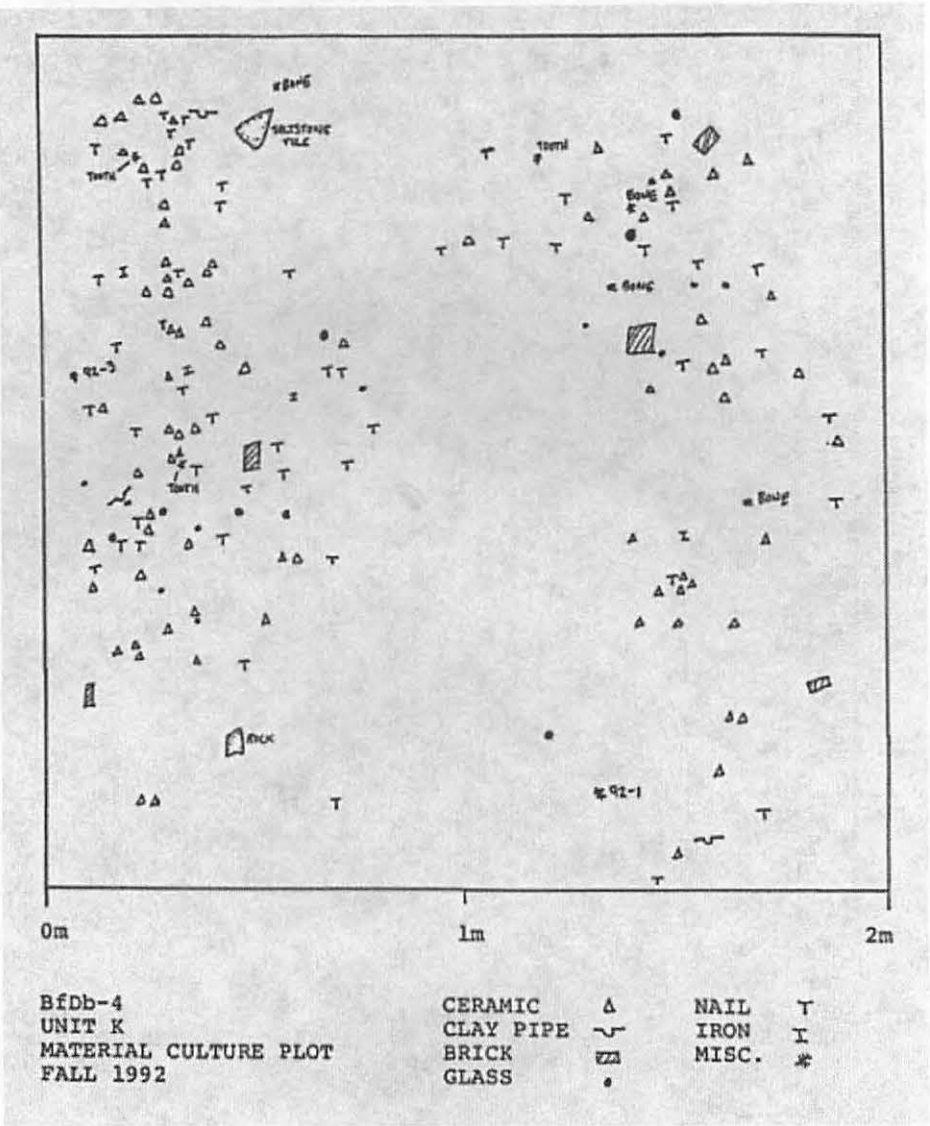


Figure 8: Plot of material culture recovered from Unit K, level 2, Manor House site, Castle Frederick.

line running north-south (magnetic) through the datum pin and all elevations were taken using a theodolite positioned over a point (I.P. 1) 12 m north of the datum point along the baseline (see Figure 2). Elevation measurements were taken at 50 cm intervals within the cellar feature, at 5 m intervals beyond the stone wall footings and at 50 cm intervals along four rows that crossed at right angles over the collapsed bake oven mound.

To produce a contour map of the site, the pin at instrument position (I.P.) 1 was designated elevation 0.0 and all other elevations were recalculated relative to it. This was done by subtracting the elevation reading from the instrument height. In cases where the scope of the theodolite had to be raised, the elevation reading was added to the instrument height. The recalculated elevation measurements were plotted on a grid map of the site and contour lines were drawn by connecting all points of the same elevation (see Figure 9). A profile of the cellar and collapsed bake oven was produced from the contour map and appears below the map in Figure 9. The cellar itself is marked off with dashed lines in this figure to indicate its basic outline. The bake oven can be seen to the immediate right of the cellar as contour lines that rise to 2.4 m above the datum point, while the lowest point is in the cellar, at .5 m above the datum point (see Figure 10).

Work was also done to carefully map out the rocks around the Acadian cellar that are believed to be remnants of the original wall. Lines were strung from the corner stakes that marked the general outline of the cellar. Measurements were taken from this reference line and the shape and position of each rock was drawn to scale on graph paper (see Figure 11). Trees growing in the cellar and boulders dumped into the cellar from land clearing were not included. The position of the rocks in the wall footing relative to the surface contours is illustrated in Figure 10. The approximate length of the cellar was 7 m and the approximate width was 6.5 m, giving it an area of roughly 45.5 m^2.

The remnants of J. F. W. DesBarres' manor house (BfDb-4) can be seen as a deep depression in a pasture below the present Ross farmhouse. The depression has been used as a dumping place for boulders from land clearing, but the cellar outline is still visible. The contour map of the Castle Frederick Manor House was based on 130 elevation measurements taken from instrument position (I.P.) 14 of the 1989 survey. The datum point for the site is Nova Scotia Control Survey Bench Mark 9156 (LIRS). I. P. 14 is located 61 m below the datum point. It was used as the control point for laying in the baseline of the excavation grid in 1990, and again in 1992, as well as the central point for elevation measurements. To produce the contour map, the survey bench mark was designated elevation 0.0 m and all other elevations were recalculated relative to it. The resulting elevation measurements, which ranged from .5 to 14.0 m below the bench mark, were plotted over the site grid map and contour lines were made by connecting points of equal elevation. The depression appears quite clearly on the contour map (Figure 12), as does a former cistern to the south of the depression. A small rise in the contours within the depression indicate a pile of brick from the collapsed chimney.

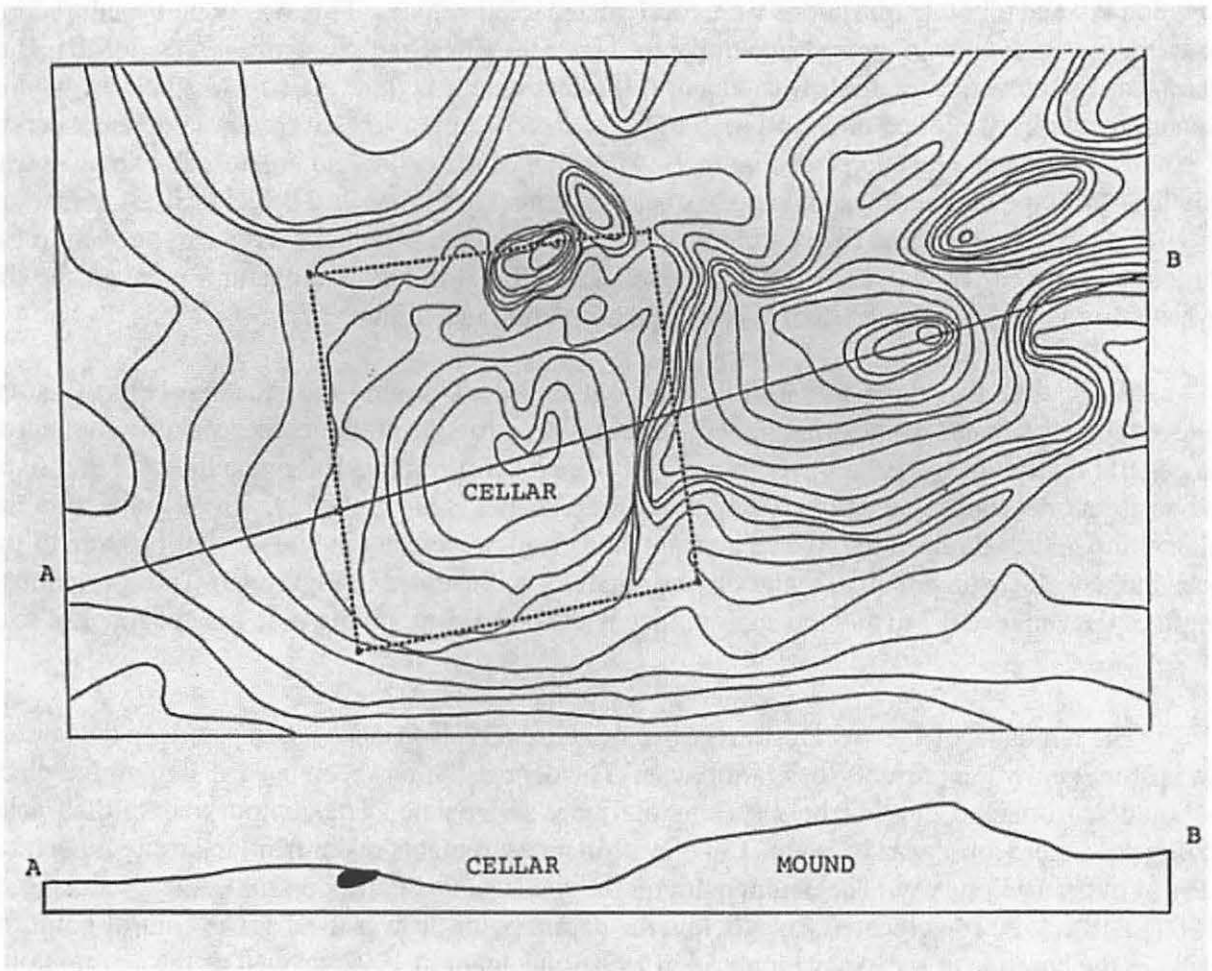


Figure 9: Contour map and profile of Acadian house site (BfDb-5), Castle Frederick. Dashed line represents approximate boundaries of cellar feature. Contour intervals are 10 cm.

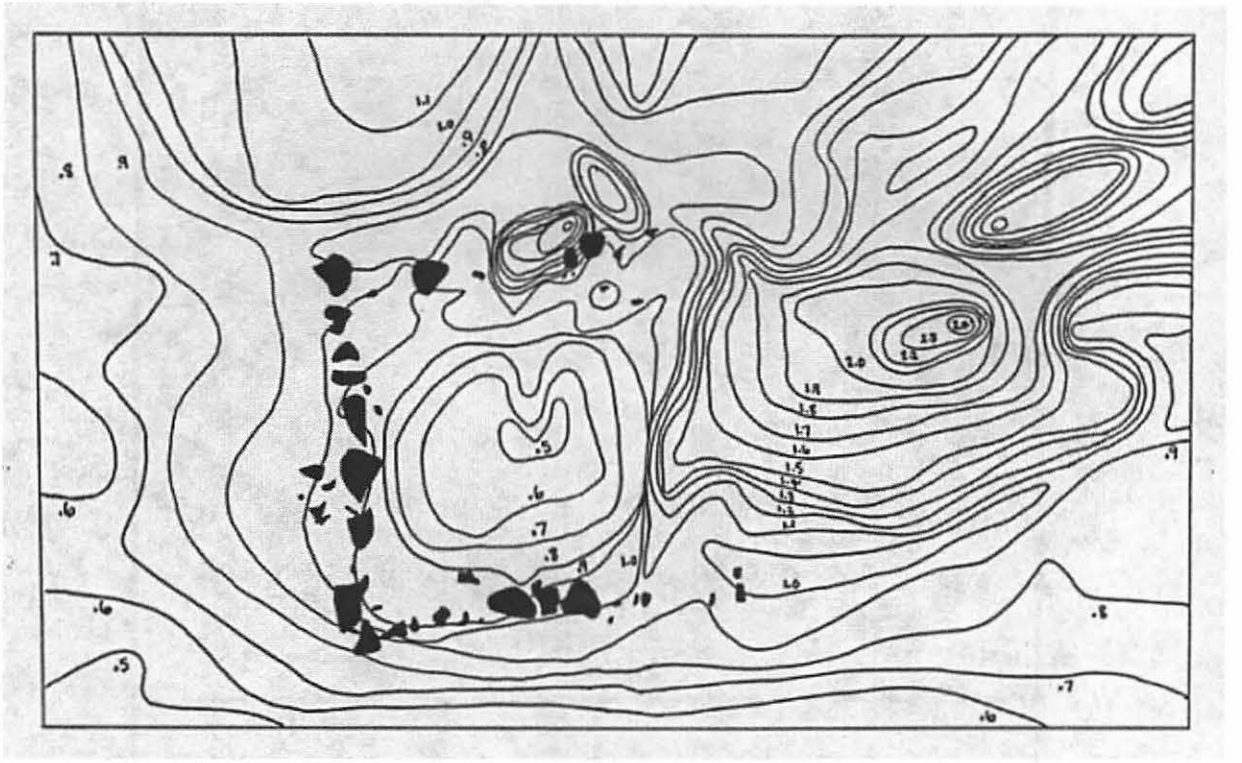


Figure 10: Contour map of Acadian housesite (BfDb-5), Castle Frederick. Exposed field stones from wall footing are blackened. Contour intervals are 10 cm.

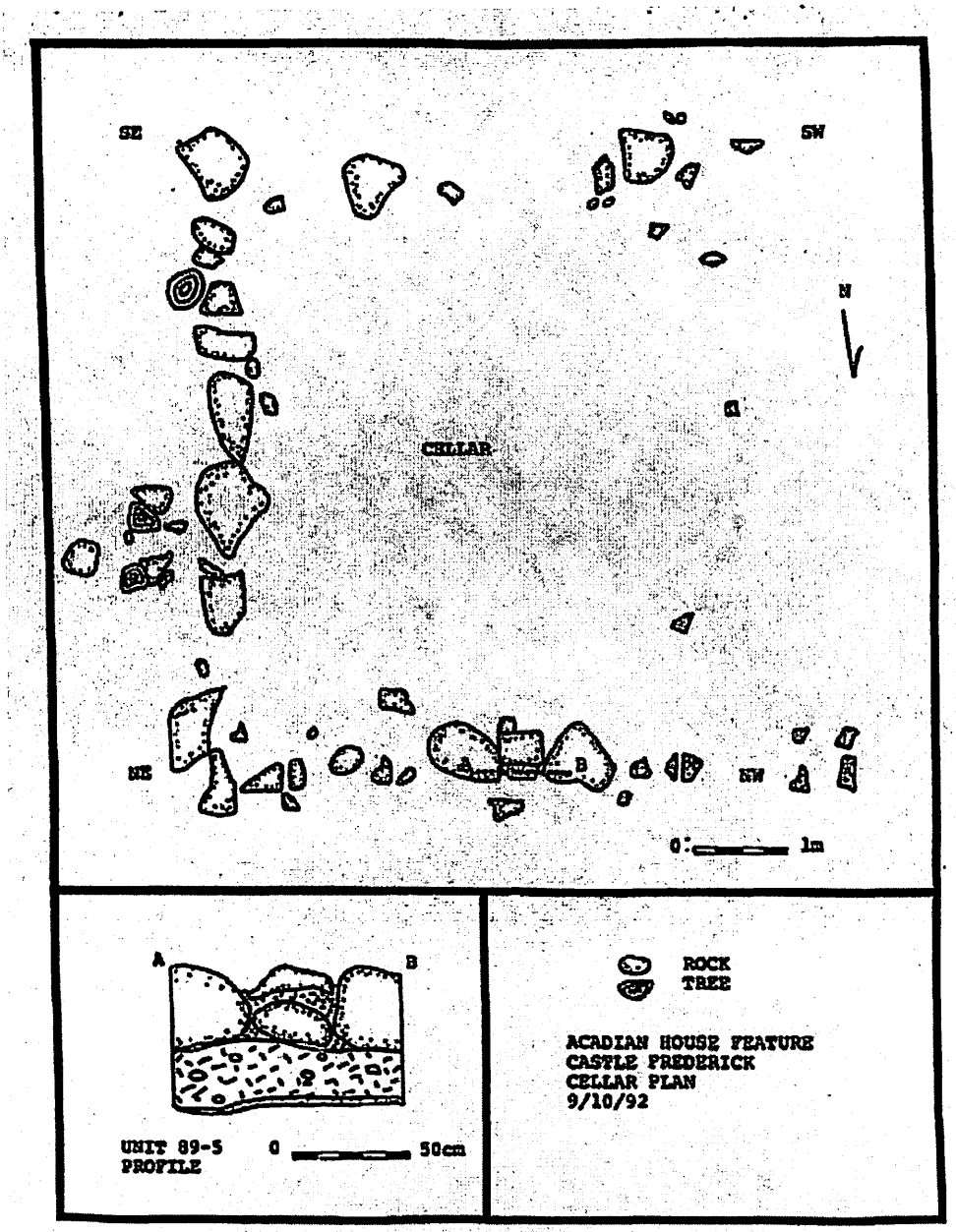


Figure 11: Cellar feature plan, Acadian house site (BfDb-5), Castle Frederick, and south wall profile of Unit 1989-5. The latter is based on a 1990 drawing by Marc Lavoie.

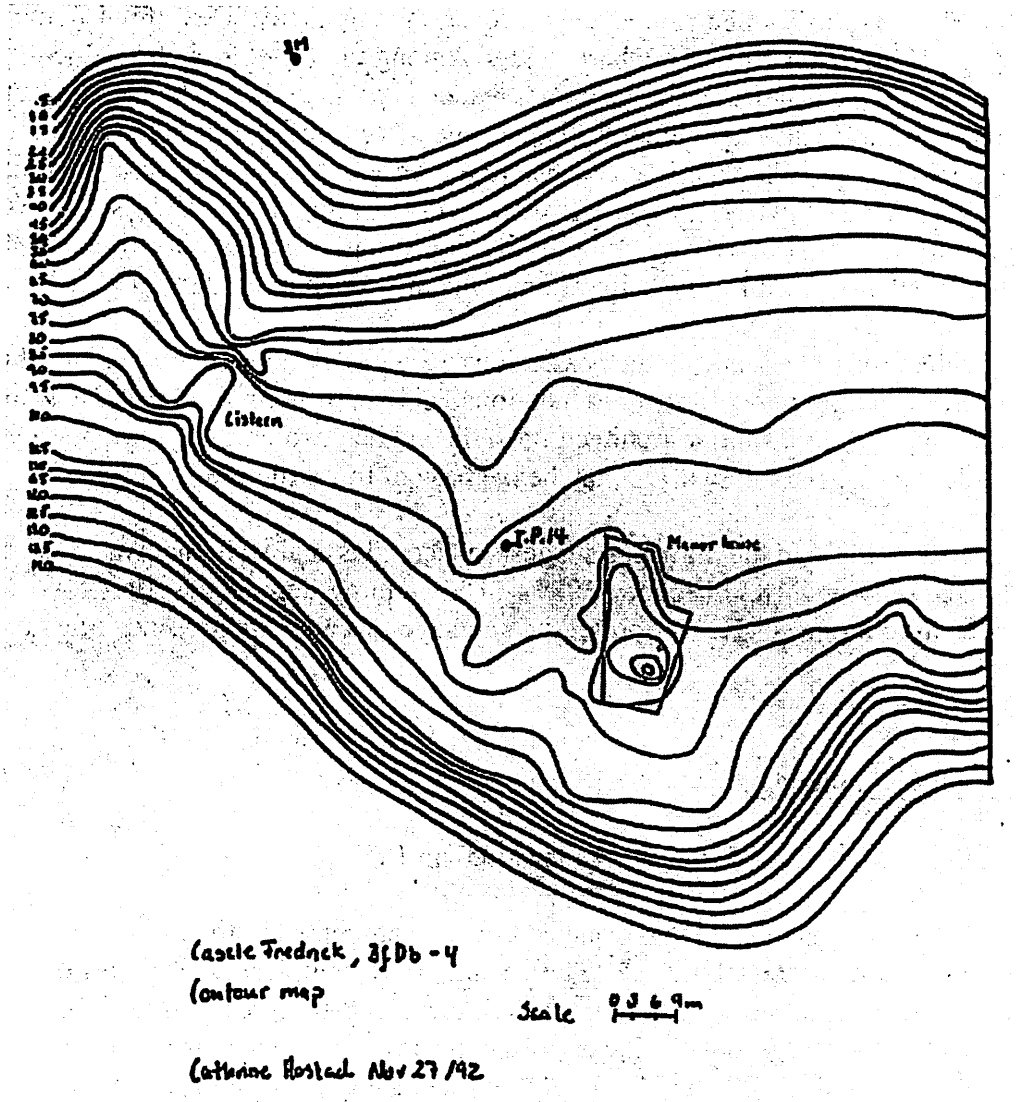


Figure 12: Contour map of Manor House site (BfDb-4), Castle Frederick. Contour intervals are 50 cm.

The Manor House

by Craig Hartlen and Jeff Mosher

There is very little documented evidence pertaining to the DesBarres home at Castle Frederick (e.g., Duncanson 1965; Lockhart 1911). Among the DesBarres papers acquired by the Public Archives of Canada is a small water colour, which is presumed to be by DesBarres and which probably depicts his residence in Falmouth. This is one of very few surviving illustrations of what Castle Frederick may have looked like and where the observatory may have been situated. The painting shows a small structure on the left with a curved roof. It has been suggested that this building is more than just a woodshed and quite possibly the observatory that DesBarres was supposed to have constructed for the calibration of his instruments (Bishop 1977).

A sketch of the same scene, in the possession of Sara Micklem Langliys, Chelmsford, Essex, includes a third structure, between the two mentioned above. It is smaller than the Manor House, but appears to be built in a similar architectural style and has two chimneys. A small rectangular feature recorded during the fall of 1992 may be the base of this structure.

The Manor House in the drawings suggests a Neo-Classical style that was popular in Nova Scotia between 1749 and 1830 (Penney 1989). The painting depicts the Manor as single story building with two chimneys. Excavations at the site have revealed the presence of a central, brick chimney base.

Soils and botanical materials

by Aileen Gallant, Michael Bent and Jo-Anne Goodwin-Bell

While descriptions of soil texture and colour were attempted in the field, more accurate soil descriptions were done in the laboratory. To this end, pinch samples were taken from the cultural levels of each unit at the Manor House site, while similar samples were taken from both the sod and cultural levels at the Acadian house site. Control samples were also taken from the marsh below the latter site, from depths of 10, 20 and 30 cm. All of these samples were described in the laboratory and portions of each were floated to remove organic remains.

The first step in the laboratory was to recheck the soil colours. The colour of sediments can be primary (i.e., from the source material) and/or diagenetic (i.e., altered through oxidation reduction, biochemical alteration, erosion or cultural activities). To determine colour, we used the Munsell soil colour chart. A wet sample was compared to the colour chips until the closest match was found.

The soil texture descriptions began with sieving the soil samples. Seven sieves from the Canadian Standard Sieve Series were used, including numbers 10 (2 mm), 18 (1 mm), 35 (.5 mm),

60 (.25 mm), 720 (.125 mm), 230 (.063 mm) and the base pan (i.e., less than .063 mm). Sieving the material divided the samples into three major fractions, namely gravel, sand and silt. Soil texture descriptions were established using the resulting proportions and the texture triangle from the Field Manual for Describing Soils (Bates et al. 1985). Samples representing level 2 from the Manor House (BfDb-4), levels 1 and 2 from the Acadian site (BfDb-5) and level 1 from the marsh were examined under a binocular microscope in order to further classify the soils according to grain shape, roundness and sphericity. The former was achieved with reference to Shakley's (1982) particle shape table and the latter two with reference to Bates and others (1985).

According to the Soil Survey of Hants County (Cann et al. 1954), the soils of the Castle Frederick area are classified as Queens catena. This is a slightly stony soil with irregular or rough surfaces that are gently sloping (i.e., 2-5%). The surface and sub-soil of this catena are light reddish brown loam over reddish brown clay loam. The parent material (source rock) is principally derived from red shales and mudstone. Although the broad description does not correspond with our finding, the sub-class of the Falmouth series is more representative. Horizon A of the Falmouth series consists of a turf and organic layer of roots and sandy loam. Horizon B is the reddish brown sandy loam/clay loam.

The Manor House samples were found to be dark brown loamy sand with a low percentage of gravel (see Table 1). The Acadian site is dark brown and dark reddish brown loamy sands and sandy clay loam. Unit 92-1, level 2, and 92-2, level 1 had a higher percentage of gravel. The marsh samples were reddish brown loamy sand and silty sand. In the first sample (i.e., the surface to 10 cm), the percentage of gravel was high. These findings are consistent with the Falmouth series. However, there is alteration due to cultural activity. At the Manor House site, copious amounts of brick and ceramic fragments were found mixed in with the level 2 soil layer. The Acadian site's large amount of gravel may be a result of their foundation and construction work. The surface has also been disturbed by cattle. The marsh area showed little sign of disturbance. The sample contained some organic material which has been identified by seed analysis. As a result of this, it appears that soil mixing has not greatly altered the soil profile described by the soil survey.

Botanical remains

A small sample, measuring 150 ml, was taken from each of the pinch samples and a simple flotation procedure was used to extract organic materials. Each sample was placed in a shallow aluminum container and 400 ml of water was added. This mixture was agitated so that the lighter organic material would float to the surface. After 24 hours, the flotate was skimmed off using a .5 mm mesh strainer and laid out to dry on paper towelling. The dried materials were sorted under a binocular microscope and seeds were put aside for identification. The remainder of the floated materials were placed in plastic bags and labelled for future reference.

Seed identification for all samples was made using a limited seed reference collection and Mongomery's (1978) guide. Most of the specimens could only be identified to genus (see Table 2).

The following is a brief discussion of the habitat of the identified plants, including what they may have been used for at the time of occupation. Information of habitat is derived from Roland and Smith's (1969) The Flora of Nova Scotia.

Table 1: Description of Castle Frederick soil samples.

Acadian House:				
Unit:	92-1/1	92-1/2	92-2/1	92-2/2
Colour:	dark brown	dark reddish brown	dark brown	dark reddish brown
Munsell:	7.5YR 3/2	7.5YR 3/4	5YR 3/2	5YR 2.5/2
Texture:	loamy sand sand	sandy clay loam	sandy loam	sand
Grain shape:	E-F	E	E-F	E
Grain roundness:	5	4	5	4
Grain sphericity:	87	87	87	87
Percentage gravel:	7.85	30.83	23.1	4.0
Percentage sand:	88.37	67.49	74.9	92.1
Percentage silt:	3.78	1.67	2.0	4.0
Wet weight:	402.28 g.	558.74 g.	518.82 g.	257.98 g.
Dry weight:	303.11 g.	437.63 g.	418.91 g.	243.88 g.
Volume:	500 ml.	490 ml.	450 ml.	300 ml.

Marsh:				
Unit:	1 (0-10 cm)	2 (10-20 cm)		3(20-30 cm)
Colour:	reddish brown	reddish brown		reddish brown
Munsell:	5YR 3/4	5YR 4/3		5YR 3/4
Texture:	silty sand	loamy clay sand	loamy sand	
Grain shape:	E or G	E or G		E or G
Grain roundness:	3	3		3
Grain sphericity:	81	81		81
Percentage gravel:	58.51	9.0		7.19
Percentage sand:	40.10	85.4		88.32
Percentage silt:	1.39	5.8		4.59
Wet weight:	311.75 g.	305.16 g.	321.92 g.	
Dry weight:	233.86 g.	245.47 g.	262.27 g.	
Volume:	325 ml.	350 ml.		340 ml.

Manor House:				
Unit:	92-K	92-L	92-M	92-N
Colour:	dark brown	dark brown	dark brown	dark brown
Munsell:	10YR 4/3	10YR 4/3	10YR 4/3	10YR 4/3
Texture:	loamy sand	loamy sand	loamy sand	sand
Grain shape:	E-G	E-G	E-G	E-G
Grain roundness:	4	4	4	4
Grain sphericity:	83-85	83-85	83-85	83-85
Percentage gravel:	13.6	12.1	13.8	11.4
Percentage sand:	83.4	87.8	82.8	87.4
Percentage silt:	3.0	4.1	3.4	1.2
Dry weight:	464.08 g.	401.23 g.	418.22 g.	444.19 g.
Volume:	450 ml.	400 ml.	400 ml.	475 ml.

Table 2: Materials identified from Botanical samples.

Sample #	NISP*	Taxonomic name	Common name
Acadian House:			
BfDb-5, 92-A1	26	Prunus pennsylvanicus	Pin cherry
	4	Rubus sp.	Raspberry/blackberry
	1	Cretaegus sp.	Native hawthorn

Table 2: continued

BfDb-5, 92-A2	4	Rubus sp.	Raspberry/blackberry
	1	-	Fungal sclerotia
BfDb-5, 92-B1	25	Cretaegus sp.	Native hawthorn**
	17	Prunus pennsylvanicus	Pin cherry
	4	-	Unidentified
	1	-	Insect fragment
BfDb-5, 92-B2	1	Rubus sp.	Raspberry/blackberry
	1	Sambucus canadensis	Elderberry
Marsh:			
BfDb-5, 92-1	1	-	Insect fragment
BfDb-5, 92-2	1	Polygonum sp.	Smartweed
	1	-	Insect fragment
BfDb-5, 92-3	1	Scirpus sp.	Rush
Manor House:			
BfDb-4, 92-K	1	Rubus sp.	Raspberry/blackberry
BfDb-4, 92-L	1	-	Grass seed fragment
BfDb-4, 92-M	-	-	-
BfDb-4, 92-N	1	Scirpus sp.	Rush
	1	-	Grass seed, charred
		1 -	Fungal sclerotia

* Number of Individual Specimens (NISP) includes complete specimens and fragments.
** possibly Cretaegus phoenica, based on the numerous long curving thorns (see Roland and Smith 1969:440).

Seventy-nine seed specimens were identified from the Acadian house site (BfDb-5). Four species were present, including Prunus pennsylvanicus (pin cherry), Cretaegus sp. (native hawthorn), Rubus sp. (raspberry or blackberry) and Sambucus canadensis (elderberry). Pin cherries are common throughout Nova Scotia. Elderberry is common in rich soil, open woods, around old fields and areas of high moisture. Rubus includes a large number of species, both introduced and native to the province. They are very common around old houses, ditches and fences. The fruits of the pin cherry, elderberry and raspberry or blackberry are all edible and may have been utilized by the Acadians. Native hawthorn is a thorny shrub that is common along river valleys, at the edge of wooded areas, sea shores and around lakes. Hawthorns are presently growing at BfDb-5 and it is not surprising that their seeds are found in the upper most stratums. Erskine (1975:49) suggests that European hawthorn was commonly used by the Acadians as an ornamental tree.

Only two seeds were recovered from the marsh control samples, including one smartweed seed (Polygonum sp.) and one common rush seed (Scirpus sp.). Common rushes are tall plants which grow in swales, the shallow water of ponds and lakes or around salt marshes. Smartweeds are common along river banks.

Only four seeds were recovered from the Manor House soil samples, including one rush seed (Scirpus sp.), one blackberry or raspberry seed (Rubus sp.) and two unidentified grass seeds. One of the latter was badly charred. The rush seed was recovered from Unit N, which is closest to the original roadway. There may once have been rushes growing in the ditches along the nearby road.

Materials collected at Castle Frederick, 1992

by Michael Deal

Test excavations at the Acadian house site (BfDb-5) produced only two artifacts and 13 faunal specimens. The first specimen is a short strand of barbed wire recovered from level 1 of Unit 92-B. This is obviously from a fence that recently bordered the site and is believed to be intrusive. The second artifact is a clay tobacco pipe stem fragment found in level 2 of Unit 92-A. There are no decorative designs or manufacturing marks on this specimen, yet the large bore diameter (i.e., .23 cm) does not conflict with the proposed pre-Expulsion date for the site. The faunal specimens included a single tooth and 12 small fragments that were recovered from level 1 of Unit 92-B. Based on a comparison with domestic animal teeth illustrated by Frandson (1967:257), this is a large cow molar (M3). Since the present site is often used as a grazing and resting place for cows, this specimen is very likely intrusive.

The materials recovered from the Manor House site (BfDb-4) in 1992 consisted of 31 faunal specimens and 1899 cultural items (see table 3). The faunal specimens and a few miscellaneous artifacts will be treated in this section, while the larger categories of earthenwares, tablewares, clay pipes, bricks, window and bottle glass and iron are discussed below in more detail.

Faunal specimens were recovered from three units at the Manor House. This included 13 calcined bone fragments from Unit M, one tooth fragment from Unit L, two long bone segments, six bone fragments and five tooth and four tooth fragments from Unit K. The five tooth fragments are tentatively identified (after Frandson 1967:257-258) as one cow premolar, two pig premolars and two pig molars (M2 and M3). The latter two teeth are still in their jaw socket and all of the pig teeth appear to be from a single animal.

The miscellaneous artifacts include three clothing items. Artifact 92-9 is a soft metal button, measuring about 1.7 cm in diameter (Figures 13:2). Artifact 92-14 is a cast brass button with a drilled eye and domed face (Figure 13:3). Finished buttons used during the later eighteenth and early nineteenth centuries were generally imported from England (Noël Hume 1970:90). Metal buttons were commonly used on the waistcoats and breeches of both upper class and working class men during the late eighteenth century (Archibald et al. 1982:in passim). The third item is a small brass tine which may be from a buckle, such as those found on breeches and shoes of the same period (Archibald et al. 1982:7, 12, 45).

The remaining miscellaneous artifacts include a collection of three worked bone fragments (92-115) and a small segment of brass plating (92-15). The bone fragments are believed to be from bone cutlery handles, and they were found in Unit K along with a segment of knife blade and a fork shank and tang. The brass plate recovered from Unit L has yet to be identified with any certainty, although it may be a gun part.

Table 3: Archaeological Materials collected from the Manor House site (BfDb-4), Castle Frederick*

Unit:	K	L	M	N	OFF-SITE	TOTAL
Earthenwares:						
Brown stoneware	3	-	-	-	-	3
Stoneware bottle	5	-	-	-	-	5
French buffware	1	-	-	-	-	1
Dry-bodied red	-	-	-	-	1	1
Redwares	12	11	66	-	2	91
Tablewares:						
Saltglazed	4	-	-	-	1	5
Creamware	50	57	145	-	-	252
Pearlware	52	19	118	-	4	193
Porcelain	8	-	7	-	3	18
Glass:						
Case bottle	-	-	1	-	-	1
Wine bottle (green)	6	2	10	-	4	22
Bottle (clear)	1	1	2	1	-	5
Bottle (pale green)	-	3	-	-	-	3
Pharmaceutical	3	-	3	-	-	6
Stemware	1	-	-	-	-	1
Lamp globe	6	17	4	-	-	27
Window pane	23	65	130	6	-	224
Unidentified	1	2	1	-	-	4
Iron:						
Knife blade	1	-	-	-	-	1
Fork	1	-	-	-	-	1
Tongs	1	-	-	-	-	1
Scissors	-	-	1	-	-	1
Pitchfork tine	-	-	-	1	-	1
Clasp	-	-	-	1	-	1
Nails	81	120	93	6	-	300
Cast fragments	7	-	9	-	-	16
Miscellaneous:						
Clay pipe frags	9	3	1	-	-	13
Brick fragments	13	438	243	-	-	694
Siltstone block	1	-	-	-	-	1
Bone handle frags	3	-	-	-	-	3
Buttons	-	1	1	-	-	2
Copper tine	-	1	-	-	-	1
Copper plate	-	1	-	-	-	1
Totals:	293	741	825	15	15	1899

* Number of Individual Specimens and/or complete items.

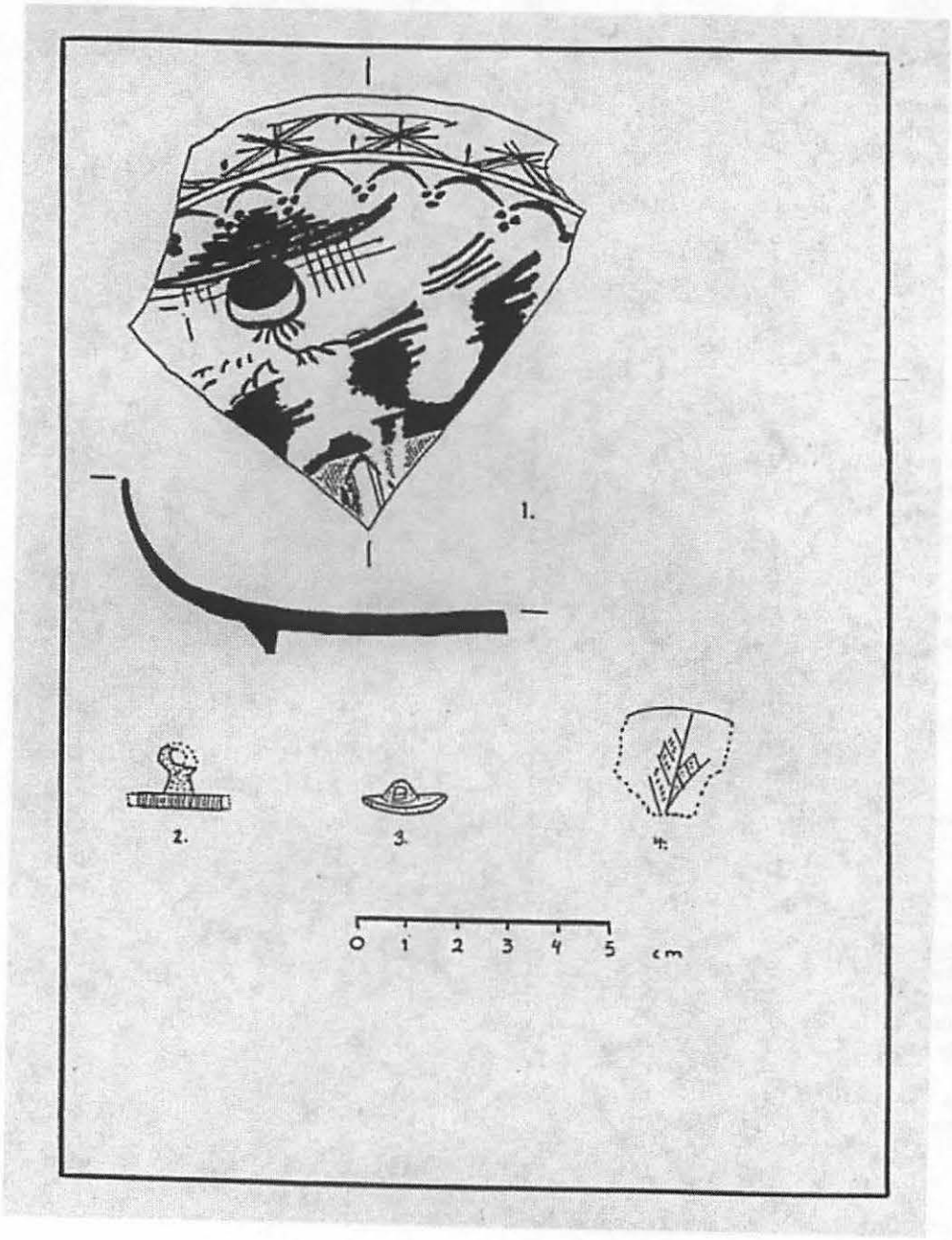


Figure 13: Line drawings of selected artifacts from the Manor House site (BfDb-4), Castle Frederick. These include (1) a partially reconstructed pearlware bowl, (2) a soft metal button, (3) a brass button and (4) a fragment of a decorated tobacco pipe bowl.

Bricks and Tobacco Pipes

by Shauna Baillie

Bricks

Six hundred and ninety-four brick fragments were recovered from the four excavation units at the Manor House. The bricks were used to construct at least one chimney. No whole bricks were collected, but two whole bricks were exposed in level 2 of Unit L. These bricks, along with recovered fragments, have a range of 24 cm (9 ½") to 28 cm (11") in length, a maximum width of 8.31 cm (3.8") and a range of 4.2 cm (1.7") to 4.65 cm (1.8") in thickness. Brick fragments 92-46 (A) and (B) from Unit L differ substantially in colour (i.e., maroon-red and red-orange respectively). They may have been manufactured at different locations. Size differences among the bricks maybe due to different stylistic or functional purposes, or again due to different trickeries. The problem exhibited here seems to be a common one, and demonstrates the 'fallacy of trying to date a building by its brick sizes ... one measures numerous examples from one foundation and finds half a dozen different sizes ...' (Noel Hume 1970:82).

It is likely that the bricks recovered from the Manor House site were made locally. In recent history, fine-grained clay at Avonport was used to make good quality dry press bricklets with only 6.43% water absorption potential (Reis 1911). Further, clay of brick-making quality can be found in the silty-clay to silty-sand lenses in the Cornwallis River Estuary and in a thick clay-rich substratum, underlying the Annapolis Valley outwash west of Wilmot Station (Hickox 1962:29-30, 34). The latter was utilized in the manufacture of bricks in the Middleton area in the last century.

Clay Tobacco Pipes

In the second half of the eighteenth century it appears that clay pipes from Liverpool, Glasgow, and Ireland were popular in North America (Noel-Hume 1970:305). Taking into consideration the lack of appropriate raw materials, it can be deduced that supply of clay tobacco pipes in Nova Scotia was dependent on European trade imports.

As pipe stems got longer, through the seventeenth to late eighteen hundreds, hole diameters decreased because the holes were made with thinner wire to prevent puncturing the wall of the pipe (Noel Hume 1970:297). The pipe stem diameters from the Manor House range from .20 cm to .25 cm. (or 5/64" to 6/64").

No complete bowls were recovered and the largest fragment is roughly 1.25 squared centimetres. The only decorated specimen (Figure 13:4) exhibits a ribbed and cross-hatched pattern.

Ceramic Tablewares:

by Carina Gjerdrum and Hilde Johannessen

A total of 468 sherds of tableware were recovered from the 1992 excavations at the Castle Frederick, Manor House site. The 42 vessels represented are assumed to have originated in England. These included salt-glazed ware, creamware, pearlware. Salt-glazed wares were used early in the seventeenth century and eventually were replaced in popularity by Josiah Wedgwood's creamware during the latter half of the eighteenth century. Pearlware was a contemporary of creamware that was used well into the nineteenth century.

Salt-glaze wares

Only five sherds of salt-glazed ceramics were recovered from the Manor House site. One sherd was surfaced collected along the bank to the south of the house cellar, while the other four came from Unit K. The former seems to be the base of a plate while the latter were clearly recognizable as plate rims. One exhibited the "bead and reel" pattern and the other a "barley" pattern.

Creamware

By the late eighteenth century, creamware was replacing salt-glazed ware as the most popular tableware. It was a cream-coloured, lead-glazed ware that was first produced in the late 1750s.

The 246 undecorated creamware sherds recovered from the Manor House site represented at least five different vessels (i.e., 144 specimens for Unit M from at least two vessels; 57 specimens for Unit L from at least two vessels and 45 specimens for Unit K from at least one vessel).

Pearlware

From about 1765 to the early 1770s, Wedgwood experimented with the production of a whiter ware which he termed "Pearl White" in 1779 (Noel Hume 1970:128). By about 1810, pearlware became the dominate tableware.

Pearlware can be distinguished from creamware by the way the glaze appears blue in the crevices of base rings and around handles. Pearlware was used for many different vessel types, with the most common form being the shell-edged patterned plate with blue or green colouring. Pearlware was on the decline by about 1820, giving way to hard white wares and semiporcelain. (Noel Hume 1970:130).

The pearlware collection for the Manor House included 118 decorated and 75 undecorated specimens. The undecorated specimens included 43 from Unit M, 19 from Unit K and 11 in Unit L, representing at least four vessels. Two specimens that were surface collected were from the rim of a cup or bowl. At least 20 vessels of patterned pearlware were also identified. There were 113 decorated pearlware sherds, including 70 specimens from Unit M, 33 from Unit K and eight from Unit L.

A shallow bowl was reconstructed from 30 conjoinable sherds recovered from Unit M (see Figures 13:1, Plate 4). The remaining 40 sherds represent at least five other vessels, with 30 specimens exhibiting different blue and white patterns. There were five sherds from a green shell-edged plate, a sherd with a black transfer print design, two sherds with an unidentified green and brown pattern and two sherds with hand-painted blue, brown, green, yellow and orange stripes. The latter were conjoinable.

Twelve of the decorated sherds from Unit K exhibited a blue and white decoration, while 12 others had an unidentified brown, blue and orange pattern. Four sherds were from two different blue shell-edged plates. One sherd was decorated with a single brown stripe. Four sherds with a blue and white pattern were fire damaged. In all, six vessels were identified in this unit. The eight sherds of decorated pearlware found in Unit L included four from a blue shell-edged plate, three from a green shell-edged plate and one with an annular ware design of blue and yellow stripes. At least three vessels were represented.

Porcelain

Units K and M at the Manor House site produced 15 porcelain sherds. The eight sherds from Unit K represented at least two vessels. Four sherds had a blue under glaze hand-painted pattern, while four others were undecorated. The seven sherds from Unit M included only one with a blue pattern and six undecorated sherds. Three sherds were surface collected, and two of these were from different vessels, both with blue patterns. In all, at least five vessels were identified.

Plate 4: Partially reconstructed pearlware bowl recovered from Unit M, Manor House site, Castle Frederick.

Glass artifacts

by Debra Richardson and Trish Turliuk

During the archaeological fieldwork at the Manor House, a small quantity of glass was recovered. Each of the four units (K, L, M, and N) produced glass, but no complete objects were recovered. The identifiable sherds included objects such as as wine-bottles, pharmaceutical bottles, lamp-glass, window panes, a stemware glass, and a case-bottle. Most of the glass sherds recovered were window glass

The following description of selected bottle glass is divided according to the temporary artifact numbers and the unit in which they were found:

Unit K:

Specimen 92-78 includes two sherds from the mouth of a wine-bottle and four body sherds. They are made from dark olive-green glass. The bottle walls are fairly thick, measuring 3-4 mm. The outside mouth diameter is 33 mm and the inside mouth diameter is 25 mm. The lip is V-shape.

Specimen 92-106 is a sherd from the heel of a colourless bottle. The sherd is 7 mm thick at the base and 4 mm at the wall.

Specimen 92-93 is a sherd from what appears to be the foot of a stemmed glass. It is colourless except for a very slight amber tint. It appears to be hand-made, not moulded. It ranges from 5 mm thick to 3 mm thick at the edge.

Unit M:

Specimen 92-4 is 3/4 of the base of a 'case-bottle' made from dark green-black glass. The glass is thick, measuring 12 mm thick at centre, yet is as thin as 2-3 mm at bottom corners. Walls that are apparent are 3-5 mm thick. A fairly obvious pontil mark exists on the base with a diameter of approximately 50 mm.

Specimen 92-11 includes two sherds of bottle glass, which are dark green in colour. One piece looks as if it is from the inside of a wine bottle push-up. The glass measures 10 mm in thickness. There is an obvious pontil mark on the base. The second piece is much thinner, measuring only 4 mm in thickness. This sherd has a slight 'S' curve when examined from the edge, indicating that it could be part of the bottle shoulder.

South bank, below Manor House:

Specimen 92-98 is a wine-bottle consisting of four pieces of dark olive-green glass. Small bubbles are apparent in the glass. The largest sherd includes a large part of the bottle wall and heel, which shows an obvious bulge at the base. The wall is 2-4 mm thick and the heel is 6 mm thick.

Medicine bottles:

Six sherds of pharmaceutical glass were recovered at the Manor House. Three pieces (92-99) were found in Unit K, and they were probably from three different bottles. Three other sherds of clear, transparent bottle glass were recovered from Unit M (92-95).

Lamp globes:

Twenty-four sherds of extremely thin, clear, light-green or blue tinted glass was found on the site. They are believed to be from glass lamp globes.

Window glass:

Window glass was found in all four excavation units at BfDb-4, totalling 224 specimens. The window glass sherds ranged from 1 - 3 mm thick, and were mainly tinted a faint blue-green.

Iron artifacts

by Suzanne Muise and Gerald Lewis

According to Harris (1988:51), England was the major source of pig iron and finished iron goods to the North American colonies. For example, records of trade between the Acadians and the French and British included axes, hoes, scissors and knives from England (Ross 1992:39-43). Therefore, it is likely that the finished iron artifacts recovered from the Manor House at Castle Frederick were imported from England although some could have been produced locally. These included a knife blade, a fork handle, a pitch fork prong, a clasp, scissor blades and part of a tong set. In the following section, we will describe some of these artifacts and discuss their possible origins and uses.

Artifact 92-3 was recovered from Unit K. It is believed to be part of a knife blade that originally had a rounded tip and parallel sides. The existing portion is 6.3 cm in length and 2.1 cm wide. Knife blades with straight, parallel sides and a rounded point, like specimen 92-3, probably

date to the late eighteenth century. An example of this type of knife illustrated by Noel Hume (1970:182) has a bone handle.

Artifact 92-1, recovered from Unit K, is believed to be the shank and rat tail tang of a fork. The earliest forks were two-tined, until 1667, when three-tined forks were made (Howard 1903:80). However, two, three and four tined forks co-existed for much of the same period (Kidd 1972). Throughout the eighteenth and nineteenth centuries the proportions of the tines to the handles changed constantly (Wade 1982:29). According to Kidd (1972), the shoulder did not appear until about 1770. Since artifact 92-1 does not show this feature it probably dates to before 1770. The shanks were somewhat balustroid in shape, and sometimes transformed into a mid-section bulge during the third quarter of the eighteenth century (Noel Hume 1970:180). Since 92-1 also exhibits this mid-section bulge, it should date between 1750 to 1770.

Artifact 92-6 is believed to be a farming fork prong. This artifact was recovered from Unit N. It is 27.3 cm long and is wider at the proximal end, tapering towards the distal end. A comparison with various fork styles illustrated and described by Partridge (1973:139-143), indicates that this specimen may be from either a potato fork or a pitchfork. One common style, the pulse fork, has four slender iron prongs, each about two feet (60 cm) long and is used to move peas, beans and other materials that were bulky but light in weight. By contrast, the caving fork has three prongs, each about three times the width of those of the pulse fork and is used for taking up short straw left over after harvesting. The potato fork has more slender prongs. The common pitchfork has prongs of varying length and is used to toss hay during harvest, build hay stacks and load hay wagons (Partridge 1973:139).

Artifact 92-83 is believed to be a portion of a set of tongs. This artifact was also recovered from Unit K. It may have been used as a kitchen implement or fireplace tool.

Artifact 92-16 is the fused blade portion of a pair of scissors, which was recovered in Unit M. The blade's outer edges are rounded gently and come to rounded ends. Each blade is approximately 1.5 cm wide. Of the scissor styles illustrated by Noel Hume (1970:268), the style dating to c.1780 is a likely match with 92-16.

Artifact 92-84 is a type of clasp, recovered from Unit N. It measures 8.7 cm long and 5.2 cm wide. It may be part of a horse's bridle. This specimen seems out of place with the eighteenth century artifacts from Units K, L and M. It was found just below the sod layer and may be intrusive.

Sixteen specimens from Units M and K (i.e., 92-86 and 92-87) are unidentified fragments of cast iron that may be from stoves, iron kettles or pots.

The most common type of iron artifact found were nails (including tacks and spikes). A total of 74 nails and tacks were recovered from Unit K, as well as one of only two bolts recovered from the site. A total of 120 nails and fragments were found in Unit L, including 30 spikes. Unit M had a total of 59 nails and the second iron bolt. The former can be further divided into 25 nails and 34

tacks. Only six nails were recovered from Unit N. A summary of information gathered on nails appears in Table 4. The majority of nails were in very poor condition. This accounted for the relatively large number that could not be classified according to head type. The most abundant type of nail head was the rosehead. It has three faces that form oblique angles to the horizontal and are distributed around a central point. The second most abundant type of nail was the "T" head. A third style recognized is the "L" head. Finally, the flathead has a central horizontal plane surface with a relatively thin head.

Table 4: Description of nails recovered from the Manor House site.

Unit (level):	Styles:						
	Rosehead	L	T	Tack	Headless	Flathead	Unknown
K:1	-	1	2	1	-	-	3
K:2	9	-	12	23	4	-	25
L:2	18	-	-	-	12	-	90
M:1	-	2	-	-	4	5	13
M:2	6	-	10	34	-	-	18
N:2	1	-	-	4	1	-	-
Totals:	34	3	24	62	21	5	149

Concluding remarks

by Michael Deal

This report represents the first compilation of archaeological information collected since work began at Castle Frederick in 1987. While only a small portion of each of the two sites discussed here have been excavated, a tremendous amount of information has been amassed. This information is crucial for clarifying the true physical proportions and layout of Joseph Debarre manor house, as well as the Acadian house at Castle Frederick. The wide variety and quantity of material culture thus far collected speak of the high quality of life at the Manor House, while the relative lack of materials recovered at the Acadian house suggests a frugal, rural lifestyle. The artifacts recovered from each site are generally consistent with the proposed pre-Expulsion date for the Acadian site and the documented late eighteenth to early nineteenth century occupation of the Manor House.

Acknowledgements:

The authors would like to thank Cathy and Cal Ross for giving us permission to work on their property. We are grateful for their continuing interest in the archaeological activity at Castle Frederick. We would also like to thank Steve Powell (Nova Scotia Museum) for assisting with the

supervision of the 1992 fieldwork at the Manor House site and Brian Preston (Nova Scotia Museum) for his support and assistance with artifact identifications. Field and laboratory equipment was provided by the Nova Scotia Museum and the Department of Geology, Acadia University.

References

Archibald, M., E. defoliator, and C. Holmes
1982 Loyalist Dress in Nova Scotia 1775-1800. Shelburne County Museum and Nova Scotia Museum, Halifax.

Arthur, E., and T. Ritchie
1982 Iron: Cast and Wrought Iron in Canada from the 17th Century to the Present. University of Toronto Press, Toronto.

Bates, D., et al.
1985 Field Manual for Describing Soils. Ontario Institute of Penology, Guelph Agriculture Centre and University of Guelph, Guelph.

Bishop, R. L.
1977 An eighteenth-century Nova Scotia observatory. The Journal of the Royal Astronomical Society of Canada 71(6):425-441.

Cann, D. B., J. D. Hilchey, and G. R. Smith
1954 Soil Survey of Hants County Nova Scotia. Nova Scotia Soil survey, Report 15, Canada Department of Agriculture and Nova Scotia Department of Agriculture. Ottawa.

Christianson, D. J.
1984 Belleisle (1983): Excavations at a Pre-expulsion Acadian Site. Nova Scotia Museum, Curatorial Report 48. Halifax.

Clark, A. H.
1968 Acadia: the Geography of Early Nova Scotia to 1700. University of Wisconsin Press, Madison.

Crépeau, A., and B. Dunn
1986 The Melanson Settlement: an Acadian Farming Community (ca. 1664-1755). Environment Canada, Parks, Research Bulletin 250. Ottawa.

Cullen, M.
1983 Pre-1755 Acadian building techniques. Historic Sites and Monuments Board of Canada, Agenda Paper 2-A:491-516.

Daigle, J.
1982 Acadia, 1604-1763, an historical synthesis. In The Acadians of the Maritimes: Thematic Studies, edited by J. Daigle, pp. 17-46. Centre d'études acadiennes, Université de Moncton, Moncton.

Davis, D. C., and K. Middlemas
1968 Coloured Glass. Herbert Jenkins, London.

Deal, M.
1993 Collected Papers of the Western Minas Basin Project:1988-1990. Ms in preparation for the Nova Scotia Museum, Halifax.

Duncanson, J. V.
1965 Falmouth: a New England Township in Northwestern Nova Scotia, 1760-1965. Mika, Belleville.

Dunn, B.
1985 The Acadians of Minas. National Historic Parks and Sites Branch, Ottawa.

Erskine, J. S.
1975 The French Period in Nova Scotia A.D. 1500-1758 and Present Remains: a Historical, Archaeological and Botanical Survey. Mount Saint Vincent Press, Halifax.

Ferguson, S.
1992 Personal communication concerning the source of cut siltstone blocks found at the Manor House site, Castle Frederick.

Fladmark, K.
1978 Introduction to Field Archaeology. Department of Archaeology, Simon Fraser University, Burnaby.

Frandson, R. O.
1965 Anatomy and Physiology of Farm Animals. Lea and Febiger, Philadelphia.

Griffiths, N. E. S.
1992 The Contexts of Acadian History 1686-1784. Centre for Canadian Studies, Mount Allison University Press, McGill-Queen's University Press, Montreal.

Grover, P. E.
1972 The Development of English Porcelain. Winnipeg Art Gallery, Winnipeg.

Harris, J. R.
1988 The British Iron Industry 1700-1850. MacMillan Education Limited, Hampshire.

Hickox, C. F., Jr.
1962 Pleistocene Geology of Central Annapolis Valley, Nova Scotia. Department of Mines, Province of Nova Scotia, Memoir 5.

Howard, M.
1903 Old London Silver, its History, its Makers and its Marks. Charles Scribner's Sons, London.

Jones, L. F.
1966 Canada: the Story of the Maritime Provinces. McGraw-Hill, Toronto.

Jones, O. R.,
1986 Cylindrical English Wine and Beer Bottles 1735-1850.

Kidd, R. S.
1970 Fort George and the Early Fur Trade in Alberta. Provincial Museum and Archives of Alberta, Publication 2.

Lavoie, M.
1992 Personal communication concerning the 1989 test excavations at Castle Frederick.

LeBreton, C.
1982 Material culture in Acadia. In The Acadians of the Maritimes: Thematic Studies, edited by J. Daigle, pp. 429-476. Centre d'études acadiennes, Université de Moncton, Moncton.

Lockhart, E. B.
1911 The history of Castle Frederick. On file, Public Archives of Nova Scotia, Halifax.

Lunn, J.
1973 Colonial Louisbourg and its developing ceramics collections. In Ceramics in America, edited by I. M. G. Quimby, pp. 175-190. University of Virginia Press, Charlottesville.

MacLaren, G.
1968 Nova Scotia Glass. Nova Scotia Museum, Occasional Paper 4, Historical Series 1. Halifax.
1972 Antique Potteries of Nova Scotia. Petheric Press, Halifax.

Montgomery, F. H.
1977 Seeds and Fruits of Plants of Eastern Canada and Northeastern United States. University of Toronto Press, Toronto.

Moogk, P. N.
1977 Building a House in New France. McClelland and Stewart, Toronto.

Noel Hume, I.
1970 A Guide to Artifacts of Colonial America. Alfred A. Knopf, New York.

Partridge, M.
1973 Farm Tools Through the Ages. Osprey Publishing, London.

Penney, A.
1989 Houses of Nova Scotia: an Illustrated Guide. Formal Publishing Company and the Nova Scotia Museum, Halifax.

Phillips, C. J.
1941 Glass: the Miracle Maker. Pitman, Chicago.

Pope, W.
1965 Portrait of Windsor. Windsor Bicentennial Committee, Windsor.

Preston, B.
1971 An archaeological survey of reported Acadian habitation sites in the Annapolis Valley and Minas Basin areas of Nova Scotia. Ms on file, Nova Scotia Museum, Halifax.
1975 An Archaeological Survey of Reported Acadian Sites in the Annapolis Valley and Minas Basin Areas 1971. Curatorial Report 20. Nova Scotia Museum, Halifax.
1991a Heritage Research Permit A1987NS3: Summary Report. In Archaeology in Nova Scotia 1987 and 1988, edited by S. A. Davis, C. Lindsay, R. Ogilvie and B. Preston, pp. 43-47. Curatorial Report 69. Nova Scotia Museum, Halifax.
1991b Heritage Rsearch Permit A1988NS03: Summary Report. In Archaeology in Nova Scotia 1987 and 1988, edited by S. A. Davis, C. Lindsay, R. Ogilvie and B. Preston, pp. 113-127. Curatorial Report 69. Nova Scotia Museum, Halifax.

Powell, S. T.
1988 Artifact analysis: text excavations, BfDb-5 and BfDb-6 Castle Frederick Nova Scotia. Ms. on file, Nova Scotia Museum Complex, Halifax.

Reis, H.
1911 The Clay and Shale Deposits of Nova Scotia and Portions of New Brunswick. Department of Mines, Mines Branch, Ottawa.

Roland, A. E., and E. C. Smith
1969 Flora of Nova Scotia. Nova Scotia Museum, Halifax.

Sequin, L. R.
1968 La Maison en Nouvelle France. National Museum of Canada, Bulletin 226. Ottawa.

Shackley, M.
1981 Environmental Archeology. George Allen and Unwin, London.

Sullivan, C.
1986 Legacy of the Machault: a Collection of 18th-Century Artifacts. Studies in Archaeology, Architecture and History. Parks Canada, Ottawa.

Unitt, P., and A. Worrall
1990 Unitt's Bottles and Values and More. Fitzhenry and Whiteside, Markham, Ontario.

Wade, B. J.
1982 Cutlery from the Fort at Coteau-du-Lac, Quebec. National Historic Parks and Sites Branch, Ottawa.

Watkins, M. C.
1972 Creamware to Pearlware. In Ceramics in America, edited by J. Quimby, pp. 217-250. University Press, Charlottesville, Virginia.

Webster, D. B.
1971 Early Canadian Pottery. McClelland and Stewart, Toronto.

Webster, J. C.
1933 The life of Joseph Frederick Wallet Debarred. Privately Printed, Shediac, New Brunswick.

Wilson, K. M.
1972 New England Glass and Glassmaking. Thomas Y. Crowell, New York.

EXCAVATION OF THE SEAVIEW AFRICAN UNITED BAPTIST CHURCH, AFRICVILLE

Heritage Research Permit A1992NS25

By Catherine M.A. Cottreau-Robins

Acknowledgements

There are several people and agencies to thank for the success of this project. I am grateful to the Department of Economic Development for complete financial support. My thanks to the Technical University of Nova Scotia and the Canadian Parks Service for the loan of equipment, lab space, photography and conservation services. Special thanks to Frank Eppell of the Faculty of Architecture at TUNS, for providing me the opportunity to participate in this exciting project.

Thanks to the Africville Genealogy Society, particularly Irvine Carvery, for his support and helpful historical input. I am very grateful to Dave Williamson and the student volunteers from the Halifax West archaeology classes, and from Saint Mary's University Anthropology Department, whose efforts contributed greatly to the excavation of the trenches. Finally, tremendous thanks to crew members Ken Lee and Euan Mathieson for their steady enthusiasm, hard work and useful suggestions.

Introduction

In 1991, Economic Development Minister, the Honourable Mr. Tom McInnis announced the realignment of the planned roadway to Richmond Terminal and Canadian National Railway's proposed Intermodal Yard, known as the Pier 9 Access Road. Mr. McInnis stated that the roadway would be moved onto CN property in the area of Seaview Park, formerly the community of Africville. The road as it will be constructed, including its landscape buffer, will encroach on the site of the Seaview African United Baptist Church.

In an effort to preserve the memory of Africville, as well as protect the integrity of Seaview Park, the provincial government agreed to fund the research, design, and construction of a church replica to be built close to the original site. A consultation committee was formed consisting of various government representatives and individuals from the Africville Genealogy Society and the Technical University of Nova Scotia. The committee decided that the first item to be addressed in the Seaview Church Project was the archaeological excavation of the church site.

The following is a report of the findings as a result of a 4-week excavation of the site in October and November 1992.

Historical Background

Africville was a black community settled around 1848 (Clairmont: 37). It was located in the north end of Halifax not far from the shore of the Bedford Basin. An active community, a church congregation was officially established in Africville in 1849 and it remained the primary and central institution in the community. Social life revolved around the church. Church events such as baptisms, weddings, and funerals drew together all members of the community. Of special significance in this regard did a resident describe the Sunrise Service on Easter Sunday as follows:

They went into the church singing spirituals, around four or five o'clock in the morning when the sun came up, and did not come out till three p.m... People, including Whites, used to come from miles around to the sunrise service, sometimes from Truro and New Glasgow and usually from Preston and Hammond's Plains (Ibid.: 40).

There were two churches in the history of Africville. The early church was built near the southern boundary of the community west of Gottingen Street, and burned around 1916. Immediately after this event the residents of the community requested that City Council approve the lease of a section of City owned property for the construction of a new church. This second church was built close to the Bedford Basin along Campbell Road, which was the main road through the settlement.

The second church was the focus of this archaeological investigation. This is the church that the community remembers and associates with specific religious, social and political events.

The Seaview African United Baptist Church, as it was known, was razed along with the rest of the settlement in the 1960's when the City decided to relocate the community. The residents tried to save their homes and church. Almost everyone was against relocation. Nevertheless, demolition of all buildings proceeded. Today the community of Africville is Seaview Memorial Park.

Recommended reading for the story of Africville:

Africville Genealogy Society, ed.
1992 The Spirit of Africville. Formac Publishing Company, Ltd., Halifax, NS.

Clairmont, Donald
1987 Africville: The Life and Death of a Canadian Black Community. Canadian Scholars Press, Toronto, Ont.

Methodology

It was planned that structural information uncovered as a result of the excavation of the Seaview Church would be used in the design of the replica. Therefore, locating and uncovering the foundation of the church was our primary objective.

The location of the church was determined prior to excavation by archival research, examination of city maps, and aerial photographs and through personal communication with former residents of Africville, Irvine Carvery, and Linda Mantley.

A 14 metre east-west baseline was set up along the south boundary of the site, which were 17.83 metres north of the first set of railroad tracks (See Figure 1). After the site was cleared of surface trash and shrubbery, a contour map was completed, using survey equipment, and the location of the baseline tied into established CNR benchmarks.

It was decided that long trenches excavated by shovel and trowel would be the most effective method of locating the foundation. Therefore, Trenches A (9 m x l m) and B (7 m x .5 m) were opened up in an area we thought most likely to expose evidence of the foundation. After excavating up to 50 centimetres below surface without any results, Trenches A and B were abandoned.

A thorough walking survey of the site proved to be very helpful. A few edges of foundation slabs, hidden by thick grasses, were found just above the ground surface. Once these were discovered, 4 additional long trenches, C, D, E, and F were set up. Trench C ran 13.6 m x 1.20 m north south and Trenches D, E, and F ran ll m x l m perpendicular to Trench C (See Figure 1).

Foundation sections and other features soon appeared. All but one section of foundation, a corner feature in Trench C and F had been uplifted and pushed over during demolition in the 1960's. The foundation sections often covered the entire width of the trench. It was at this time that the student volunteers were extremely helpful. For 2 days groups of 25 or more individuals excavated fill and soil from the trenches.

The north end of Trench C and the east ends of Trenches D, E, and F were shoved tested only in an effort to save time. These areas were unproductive. In general, excavation proceeded normally and the usual standard methods of recording were employed.

Features

Several features were uncovered during the excavation: 3 fragmented walls, a foundation corner section, chimney and 2 foundation sections containing openings for windows.

The foundation wall running north south, Wall 1, was uncovered in Trench C (See Figure 1). The south end of this wall was exposed above ground in the southern end of the trench. The north end

was uncovered as part of the corner area excavated in the northern section of Trench C and the western section of Trench F. From this broken and toppled line of foundation, we determined the north-south dimension of the church to be 12.2 metres. It was also established that this wall was the west wall of the church, because of the heavy evidence of the west wall chimney in the trench and later because of the corner feature orientation. The composition of the foundation is a mixture of concrete, sherds of glass and ceramic, shells and pebbles.

Foundation Wall 2 represents the south wall of the church and it was uncovered in Trench D. Again, the foundation is pushed over and fragmented. In this trench there is an iron rod running through a foundation slab, no doubt put in for support during construction. Wall 3 is represented in Trench F. Sections of the north foundation wall of the building were exposed in this unit which extends into Trench C.

Unfortunately, evidence of the east foundation wall was never found. The area of the site where it would have been located was completely levelled sometime ago and used as a road.

The foundation corner feature, as previously stated, was uncovered in the northern area of Trench C and the western area of Trench F (See Figure 1). This was the only relatively undisturbed section of the foundation still in its original position. The composition of the feature was the same as the other foundation segments. Its width was 23 centimetres and its depth below surface was 60 centimetres. This feature was significant because of its condition and because it gave us the orientation of the structure. We established that the rest of the building was definitely east of this point.

All foundation segments showed impressions of wood on the surface, therefore indicating that wooden form work was constructed and the concrete poured into it to form the walls. The concrete was also poured directly on to the earthen floor.

The west wall chimney was uncovered in Trench C, specifically 2.5 metres from the south end of the trench. There was a tremendous brick debris zone in this area and it extended 2-3 metres north. The debris zone was also picked up in Trench E which suggested that the building was bulldozed from a westerly direction. After collecting the chimney liner fragments and piecing them together we determined the dimensions of the square chimney to be 28 cm x 28 cm.

The 2 foundation window openings were exposed in Trench E. One opening had fragments of the wooden frame and metal screen still attached. These openings were significant because when measured (61 cm x 91 cm) and compared to photographs of the church, we were able to suggest an east-west dimension of the church (11.2 m) and support the north south dimension (12.2 m). It was also determined through measurement of the features that the foundation was at least 1.52 metres in height, 91 centimetres below ground and 61 centimetres above ground.

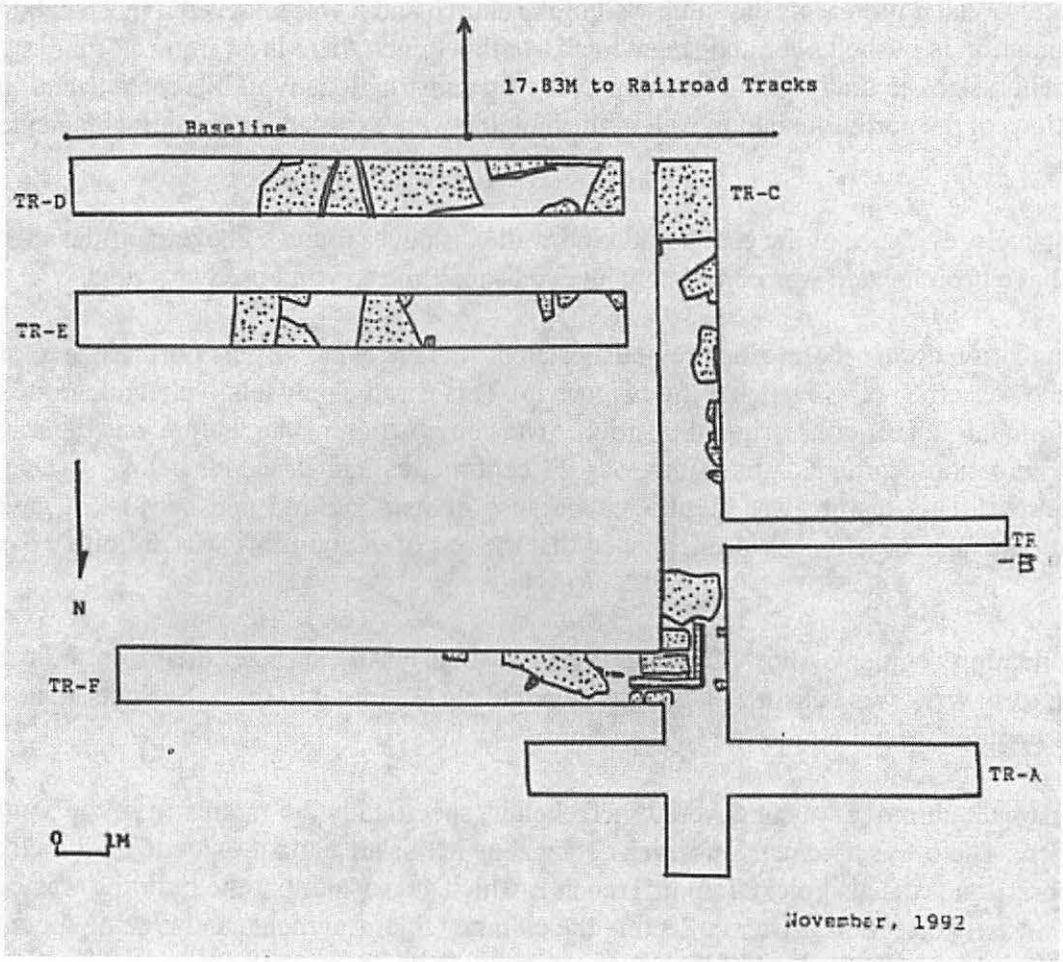


Figure 1:
BeCv: 20 Seaview African United Baptist Church
Site Map – Uncovered Foundation

Stratigraphy

The stratigraphy of the site was similar from trench to trench (See Figure 2). After removal of the sod layer, concrete would appear at a depth of 5-8 centimetres below the surface. As stated, on occasion the concrete was exposed above ground.

Beneath the sod, Lot 1, was Lot 2 which consisted of a medium brown loam with some brick and small rocks. Below this and below the concrete was Lot 3, a moist, black loam. This layer was labelled the "heavy debris zone", because of its concentration of wood, red roofing shingles, window glass, chimney liner, brick, stove pipe, nails, spikes and other artifacts such as bottle glass, ceramics, gloves, a sign/ banner, wire coat hooks and marbles.

Lot 3 clearly was a record of the time of demolition and helped determine the sequence of events. First, the church superstructure was knocked down and debris filled the basement. Then the foundation walls were pushed in falling over the rubble.

Lot 4 was below the debris zone and consisted of a coarse grey/brown soil with rocks and occasional evidence of the concrete basement floor and concrete footings.

Lot 5 represented the sterile layer and consisted of a hard packed, orange/brown soil. All the lots, except Lot 5, produced artifacts. Lot 3 yielded the highest artifact content. When examining the artifacts from each lot, the high disturbance of the site is reinforced. The trenches had an average depth of 70-85 centimetres below sod.

Artifacts

In total 2319 artifacts were collected, cleaned, and analyzed from the Seaview Church site. Five hundred and twenty-two of these artifacts, which represent all the artifact types from the site, were catalogued. The remaining 1797 were discarded.

The following is a brief descriptive summary of the artifacts. They have been sorted into 4 groups according to function or related activity. Ken Lee and Euan Mathieson completed initial analysis of the artifacts.

Church Artifact Group

This group consists of artifacts, which relate directly to church activity.

Gloves
A pair of wrist length white cotton ladies gloves were collected from Trench E. The gloves are the simple dress style commonly worn to social occasions, such as church services, from the 1940's to the 1960's.

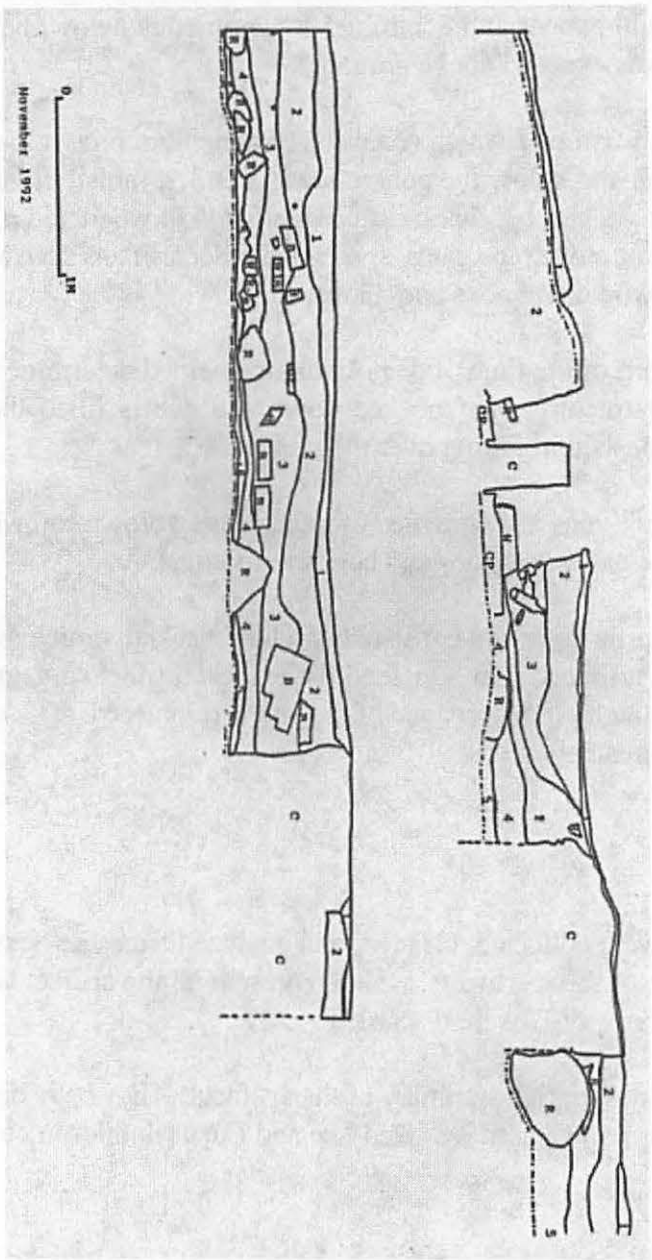


Figure 2:
BeCv: 20 Seaview African United Baptist Church
East Wall Soil Profile, Trench C

Figure 2
Legend

1	-	sod, dark brown loam
Lot 1	-	sod, dark brown loam
Lot 2	-	medium brown loam
Lot 3	-	black loam, heavy debris zone
Lot 4	-	grey/brown coarse soil
Lot 5	-	orange/brown hard packed soil, sterile
B	-	brick
R	-	rock
W	-	wood
CL	-	chimney liner
C	-	concrete foundation slab
S	-	galvanized metal stovepipe
•	-	Metal rod
CP	-	concrete pad or footing
-. -. -	-	Limit of excavation
- - -	-	Concrete slab extending across entire width of trench

Banner/Sign
A wooden blue and gold banner with the words "GOD IS LOVE" hand painted on the surface was collected from Trench F. It is approximately l m x 20 cm in size and modern in composition.

Instrument Fragment
A metal object rounded at one end and stamped "D#" on the other was collected from Trench C. The artifact is 4 cm x l m and cut out in the centre were a flexible flat flange of similar material has partially broken away. It is likely that the artifact was part of organ or piano works.

Architectural Artifact Group

This group consists of artifacts related to the church building.

Furnace Grate
Seven sections of a large iron floor grate employed in the heating system of the church were collected from the site.

Flashing
Five pieces of lead and galvanized metal flashing were collected from the site.

Utility Porcelain
Twenty fragments of modern white utility porcelain used primarily for electrical fixtures were recovered.

Tile
Twenty-seven white and yellow wall tile fragments and 7 floor tile fragments were collected. Both types are modern in fabric and decoration.

Coat Hooks
Two identical metal wire coat hooks were recovered. They measure 8 centimetres in length and date to the first half of the 20th century.

Chimney Liner
Approximately 30 fragments of coarse red earthenware chimney liner were excavated from the chimney feature. We were able to mend enough fragments to determine the dimensions of the chimney which was 28 cm x 28 cm. One liner fragment was kept for the collection.

Door Hardware
Two iron door hinges and 2 iron door latches were collected from the site. One door hinge was excavated with a section of doorframe attached. The frame has a strip of beige paint on the surface. This was the exterior colour of the church at the time of demolition.

Window Hardware
One iron window hinge and 1 iron window pulley mechanism were found.

Staples
Three metal U-shaped construction staples were collected from the site. They measure 8.5 centimetres in length.

Trans-former Plates
Two metal transformer plates were collected.

Screws
Two round headed single groove modern screws were recovered.

Window Glass
In total 704 sherds of window glass were uncovered from the site. They have been divided into 7 types: clear thin (341), clear thick (10), clear textured (162), clear diamond motif (128), clear ridged (52), white textured (3), and clear bevelled (8). All of the window glass is 20th century.

Nails
One hundred and forty-four nails were collected from the site. The majority are 20th century wire nails but there are some stamp headed cut nails. They range in size from the 13-centimetre construction nail to the 3 centimetre roofing nail.

Spikes
Eight iron spikes were found. One is a round headed railroad spike (15 cm) and the other 7 are round-headed construction spikes (15-19 cm).

Bricks
Hundreds of red brick fragments and whole bricks were excavated from the site. Most of them were from the chimney feature. Forty-eight were kept to be used as a historic element in the replica. The average size is 20 cm x 9 cm x 5 cm and they were manufactured in Ontario.

Light Bulbs
Two fragments of light bulb glass were found.

Rivet Fastener
One metal rivet fastener was collected from the site.

Sheeting
Three pieces of metal sheeting were recovered.

Domestic Artifact Group

This artifact group consists of artifacts related to personal human activity.

Clay Smoking Pipes
Nine stem fragments and 2 bowl fragments of 19th century white clay tobacco pipes were collected.

Marbles
Six toy glass marbles were found. They are coloured with purple, white, blue, green and red internal swirling and date to the 20th century.

Film Strip
A 4-centimetre piece of cellulose filmstrip was collected from the site.

Scissors
One pair of multi-purpose tapered scissors with pointed blades was excavated from the church site. The scissors measure 17 centimetres in length and date to the modern period.

Bottle Opener
A metal bottle opener was found. It measures ll cm x 2 cm and is double functional with a tin can opener at one end and a cap lifter at the opposite end.

Buttons
Seven small clothing buttons were recovered. They are 20th century and are made of glass, thin metal or plastic.

Pin
A copper alloy venders pin, 2.7 centimetres in width, was collected. There is the inscription "RESISTER? CHAUFFER 1919 2491 NOVA SCOTIA" on the front of the artifact and the very small inscription (makers mark), WELLINGS MFG. CO TORONTO" impressed on the reverse. There are also traces of gold and black and yellow enamel on the front surface of the pin.

Graphite Stick
A 4-centimetre graphite stick used for marking a slate was collected.

Heavy Equipment Tooth
An iron tooth from the shovel of a backhoe or excavator was found. It measures 16 cm x 7 cm.

Paint Cans
Two crushed gallon size paint cans were uncovered. Both cans contained a coating of pale mint green paint, a popular shade used for interior decorating in the mid 20th century.

Flint
Two flint nodules that have been worked were collected.

Pliers
A pair of iron metal working pliers, 23 centimetres long with upturned grips was recovered from the site.

Lipstick Holder
A copper alloy lipstick holder was collected. It dates to the mid 20th century.

Coins
Three coins were collected. They consist of a 1928 British halfpenny, a 1948 Canadian penny, and a 1953 American penny.

Lock Assembly
One small metal dresser lock assembly was recovered.

Wheel
A metal and plastic toy wagon wheel was found.

Spoons
Three spoons were recovered. Two of the spoons are complete and decorated. They are a copper alloy baby spoon and a silver plated soup spoon. The third is broken as the stem meets the bowl. It is a metal tea spoon. The soup spoon is 20th century however the dates of the other spoons are undetermined.

Rifle Cartridge
A 303 Lee Enfield blank cartridge of World War II vintage was collected from the site.

Bottle Glass
Seven hundred and nine bottle glass fragments were excavated from the church site. The collection exhibits a range of colours that include blue, yellow, red, amber, clear, purple and a variety of greens. Though most of the sherds are 20th century in manufacture dates, there are a few dark green fragments that appear characteristically late 18th or 19th century.

In addition, over 20 clear glass soft drink bottles were recovered from Trench F. Each bottle had a blue and white label that read "Arctic High Quality Beverage." The drink was manufactured by the Arctic Beverage Company in Halifax. The bottles provided an interesting photo opportunity because of their arrangement into neat rows as if in a case. They were excavated from the basement area of the church. Three bottles were kept for the collection.

Bone
Sixty-four pieces of food bone were excavated from the site.

Ceramics

Four hundred and fifty-one sherds of various types of ceramics were collected. Three hundred and twenty-one sherds are fine earthenware however small samples of coarse earthenware, porcelain, fine stoneware and coarse stoneware are present. All of the ceramics date to the 20th century with the exception of 4 sherds of 18th century fine and coarse stoneware and a small sample of 19th century fine earthenware and coarse stoneware.

Miscellaneous Artifact Group

This artifact group consists of artifacts that are unidentifiable in terms of function or activity. There are 53 artifacts in this group and they represent fragments or pieces of metal, plastic, wood, cloth, husk, and shell.

It should be noted that this is a preliminary analysis of the artifacts from the Seaview Church site. It is recommended that further study of the collection be undertaken and more detailed descriptions of the artifacts written. Unfortunately, time and financial constraints did not allow for an in-depth examination of the collection.

Four artifacts have been conserved: the baby spoon, venders pin, British halfpenny, and the religious banner. However, it is strongly recommended that other artifacts currently in a fragile state and planned for display, undergo conservation treatment to maintain stability.

Over 70% of the collection can be dated to the period that the church existed. There are exceptions with the few ceramic, bottle glass and smoking pipe fragments that predate the site over 100 years based on date of manufacture. These artifacts likely arrived at the site by way of fill which has been dumped in the area for at least 30 years. The artifacts clearly reflect the activity that has taken place at the site and this activity can be separated into 3 major events: the working church, the demolition, and the post-demolition.

The excavation of Lot 3 in the 4 main trenches resulted in the bulk of the artifacts being uncovered. Lot 3 was the heavy debris zone and the richest stratigraphic level concerning artifact numbers and artifacts particular to church activity and the church structure.

Conclusions

In conclusion, the primary objective of this project, which was to locate and expose the foundation of the Seaview Church, was fulfilled. In doing so, many structural details concerning the foundation were recorded (i.e. dimensions, composition, width, depth and window size). This information has been confirmed as useful to those responsible for designing the replica.

There were 2 additional benefits that resulted from the excavation. First, a fair size collection of

artifacts that illustrate activities associated with the church, were collected and are now available for display. Second, there is now a permanent record of the structural base of the church. This was important to record even though the building was only constructed at the time of World War I, because immediately following completion of excavation and final recording, a backhoe removed the south wall and part of the west wall to make room for the new access road. Therefore, the southern half of the site has been totally wiped out.

The stratigraphy and artifacts clearly illustrate the events that occurred on the site - the demolition and deposit of structural remains underneath toppled, bulldozed concrete foundation. The mixture of artifacts ranging from the 18th – 20th century throughout the site, reflect the fill that has been dumped and dragged across the area over the years since the building has been torn down.

Finally, I hope the former residents of Africville will enjoy the information and artifacts that have been collected from their church. This is a major concern because ultimately this effort was undertaken for them, as will be the construction of the replica. The replica is scheduled to open in July 1993, the 10th anniversary of the Africville Reunion Weekend and the forming of the Africville Genealogy Society. It promises to be an exciting and ceremonious event.

References Cited

Clairmont, Donald
1992 "Africville: An Historical Overview" in:
The Spirit of Africville.ed.,AfricvilleGenealogy Society, Formac Publishing Company, Ltd., Halifax. pg. 36-50.

Bibliography

Africville Genealogy Society, ed.
1992 The Spirit of Africville.
Formac Publishing Company, Ltd., Halifax, NS.

Brooks, Bob
1960's Collection of photographs (Africville).
Public Archives of Nova Scotia, Halifax, NS.

Clairmont, Donald
1987 Africville: The Life and Death of a Canadian Black Community.
Canadian Scholars Press, Toronto, Ont.

Davis, Stephen and C. Lindsay, R. Ogilvie, B. Preston, ed.
1991 Archaeology in Nova Scotia 1987 and 1988.
Curatorial Report No. 69, Department of Education, Halifax, NS.

Fladmark, Knut R.
1978 A Guide to Basic Archaeological Field Procedures.
Department of Archaeology, Publication No. 4, Simon Fraser University, Burnaby, BC.

Kimber, Stephen
1992 "Taking Back the Neighbourhood."
In Canadian Geographic Magazine. Vol. 112, No. 4, The Royal Canadian Geographical Society, Vanier, Ont.

National Film Board of Canada, Producers
1989 Remember Africville. Film.
National Film Board of Canada, Atlantic Centre, Halifax, NS.

Sanders, Charles R., ed.
1989 Africville: A Spirit That Lives On.
Co-published by the Art Gallery of Mount Saint Vincent University, The Black Cultural Centre for Nova Scotia, Africville Genealogy Society and the National Film Board of Canada, Atlantic Centre, Halifax, NS.

WEBBER LAKE
HALIFAX COUNTY

Heritage Research Permit A1993NS03

By Dr. Stephen A. Davis
Davis Archaeological Consultants Ltd.

Management Summary

A phased cultural resource assessment was undertaken for areas of Webber Lake which would be impacted by the construction of a minihydro power development. The research design included a preliminary site reconnaissance; historical background study, a literature search, review of site inventory files and a field study. These efforts did not discover any significant cultural resources which would prohibit the proposed development.

Introduction

An archaeological survey was conducted along the shores of Webber Lake under contract with Sackville Hydropower Corporation Inc., Sackville. The survey was required as part of an Environmental Impact Assessment for the proposed construction of a minihydro power project on the lake. The objectives of the survey were to locate and test all cultural resource sites which might be impacted by the development. In scope, the archaeological overview was limited to the current shoreline to an elevation of four metres above the lake level. This unit of study is that projected by the proponents engineers for the maximum height that the lake would rise once the dam was in place.

The survey was conducted by Davis Archaeological Consultants Limited of Halifax. The field project occurred over two days, April 20th and May 2nd, while a one day background study was conducted at the Public Archives. The key personnel included Mr. Peter Twohig who undertook the historical background study. Dr. Stephen A. Davis, assisted by Mr. Laird Niven, conducted the archaeological survey.

Proposed Project

Sackville Hydropower Corporation Inc. is proposing to construct a concrete dam on the Sackville River west of the bridge on the Lucasville road. The dam and ancillary facilities will all be located in this restricted area. The power lines will be integrated into an existing grid approximately one kilometre northwest of these facilities. The only potential impact on archaeological resources in the study area would be the increased height of Webber Lake. The project is scheduled to begin once the proponent has satisfied the requirements of an Environmental

Impact Assessment.

Study Area

The study area begins on at the location of the Lucasville road bridge over the Sackville River. It includes the entire shoreline of Webber Lake and extended five hundred metres westward along the Sackville River as it flows from McCabe Lake into Webber Lake. The boundaries of the survey included the present shoreline inland to a minimum height of four metres above the lake level. This distance is the projected rise in the lake level once the dam has been constructed (Figure: 1).

The biophysical characteristics of the study area include the Sackville River with sections at the east and west ends of Webber Lake. Two small brooks also flow into Webber Lake, one is at the west end approximately five hundred metres east of the confluence of the river and lake. The second brook enters the lake approximately in the middle of the north shore. In terms of the shoreline boundary of the survey, this was easily determined by its floral growth. The lake had a dam on it until 1956 when it was destroyed in a severe storm. This effectively inhibited older growth along the shoreline, it is presently defined by stands of poplar interspersed with birch trees. The forests bounding this growth are dominated by spruce, occasional mature pines and stands of mixed hardwoods.

The most significant natural resources which would have influenced the distribution of aboriginal settlement would have been fish. At one time the Sackville River supported a variety of anadromous species including salmon. Secondary resources would have included terrestrial mammals and aquatic mammals, principally beaver. During the course of the field survey a number of bird species were noted which included duck, osprey, loon and a possible sighting of a bald eagle.

Methodology

The research plan was designed as a standard phased approach which included a site reconnaissance; historical background study, a literature search, review of site inventory files and a field study. The site records at the Nova Scotia Museum did not include any direct evidence for cultural resources within the study area. However, aboriginal material had been reported from the Sackville River where it enters the Bedford Basin. In addition it was known that the river was a major thoroughfare for native peoples travelling through this area. A final consideration in the project design was the known presence of petroglyphs in Bedford.

These factors were taken into account in defining areas of high, moderate and low potential for archaeological resources. The principal investigator, Dr. Stephen Davis, conducted a preliminary reconnaissance of the study area in early April. At this time snow cover prohibited a detailed survey, however, it allowed the defining of the areas of potential.

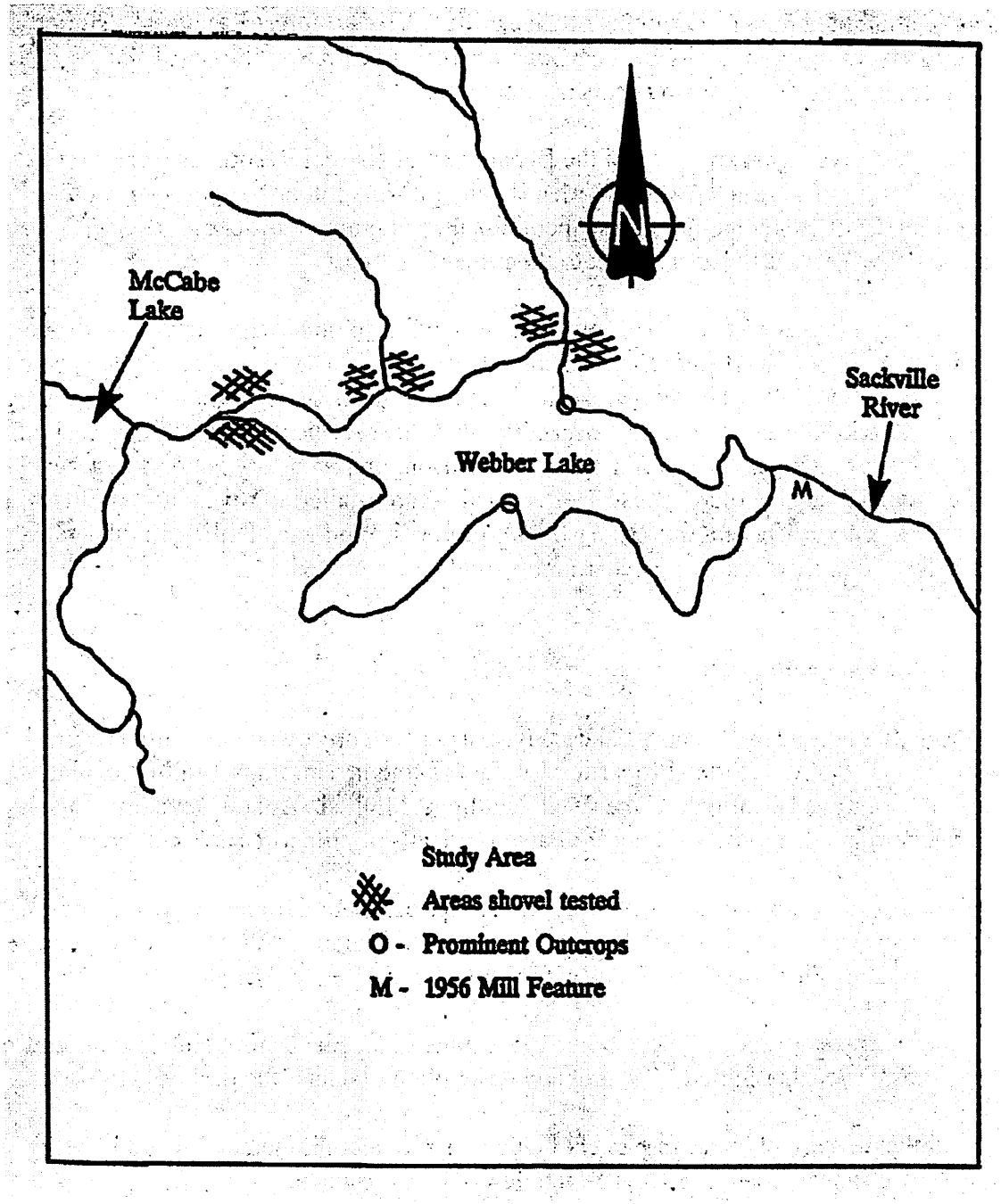


Figure: 1 Webber Lake, Sackville, Halifax County, Nova Scotia

Methodology - Historical Background Study

The starting point for the project was the Public Archives of Nova Scotia. A variety of access points were attempted under the rubrics of "Sackville", "Hefler Forest Products", "Hefler", etc. in the Community, Biography and Miscellaneous card files at PANS. None of these yielded any significant findings on the company or its land holding.

The extensive newspaper files of the Department of Natural Resources were then examined for the period 1953 to 1972 in an effort to identify any information on the company and/or the site. A database search of contemporary newspapers was then attempted, utilizing the CBCA Database. Neither search revealed articles pertinent to the project.

A variety of other sources were consulted in an effort to obtain information on the company. Among the sources examined were Elsie Tolson's *The Captain, The Colonel and Me*, a manuscript history of Middle Sackville, selected articles in the *Atlantic Advocate* pertaining to the growth of the community of Sackville, and selected retrospective newspaper articles on the Bedford-Sackville area. Finally, the extensive papers of forester Ralph S. Johnson, prepared for his book *Forestry in Nova Scotia* were consulted for references to Hefler. This search failed to reveal any information that could offer insight into the lengthy history of Hefler Forest Products. Failing in this endeavour, it was determined that a preliminary deed search would be conducted.

Results of Deed Search

Properties around the Webber Lake study area are currently owned by Edith Hefler, G. Royce Hefler, Harry G. Hefler, Hefler Properties Limited, Dunoon Holdings Limited, Eulalie Castle, Paulsen Developments Limited, Culverwell Holdings Limited, Adare Developments Limited, Leonard and Virginia Parsons, and Paul W. Parsons (details of properties are included as Appendix A).

In addition to the properties held by the Hefler company around Webber Lake, they also occupy a mill site of approximately 9.74 acres, on the south side of the Windsor Road. The property owner is listed as Hefler Forest Products by the Nova Scotia Registry of Deeds.

A warranty deed dated 18 September 1987, transfers the land from Hefler Lumber Co. Ltd. to Hefler Forest Products Limited. The property description of one of the parcels is of some interest:

> "All that certain lot, piece or parcel of land with the sawmill thereon lying and being on the Windsor Road in Sackville and described as follows:
> Beginning at the Sackville River at the Webber Bridge so called on the division line of Lot Number Ten; Thence running down the aforesaid River, until it comes within two rods of the place where William Miller's dam formerly stood; Thence East to the Road leading from where said Wm. Miller's mill stood; Thence along said road until it meets the Road leading from Ellis' farm (now Oland's farm) to Webber's mill or

bridge; Thence to proceed along the South West side of said Road last mentioned in a Westerly direction line before mentioned; Thence along said division line to the place of beginning."

Thus, this description lists the current mill, as well as William Miller's dam and mill as site features.

Interestingly, this was not the first deed on this property to mention a previous lumber operation in the area. A deed dated 26 November 1878, saw Erastus and Amanda Hefler sell 20 acres to George Lawson for the sum of $300. The lot sold was a subdivision of a lot purchased by Charles Hefler from Grisham Tuffts was conveyed by Tuffts to Charles Hefler on 15 December 1869. What is of particular interest is that the Hefler-Lawson deed mentions an Ellis' sawmill at Sackville Mills, southwest of the property being sold. It would seem that this was located on the Oland's farm property, identified in contemporary deeds to the mill property. The location of properties and the Mill sites was determined through a variety of maps including A. F. Church's and early geological maps.

Thus, it is known that members of the Hefler family have owned land in the Webber Lake area since at least 1859. No firm date for the establishment of their mill could be established from the sources consulted, though a 1988 article from the *Commercial News* mentions that the endeavour was started "more than a century ago."

Results - Archaeological Investigation

The first day of the field study encountered some problems with snow cover in the more heavily forested areas of the study area. However, the primary area was open allowing a pedestrian survey from the bridge along the entire northshore west to the Sackville River. The crew did not conduct any subsurface testing at this time rather they concentrated on naturally exposed surfaces which are relatively abundant throughout the study area. The most common exposure is related to near shore ice rafting which has left denuded gravel ridges along most of the lake shore. Additional exposed soils have resulted from vehicle traffic; log skidders, ATC's, pathways and roads. Natural exposures have resulted from erosion, tree falls and animal burrows.

The north shore bedrock outcrop was inspected for petroglyphs. It was an ideal location, however, other than modern graffiti no motifs of aboriginal origin were noted. A number of prominent glacial erratics scattered along the shore were also inspected with negative results.

The survey crew returned to the bridge area and checked both sides of the river. The remnants of the mill destroyed by flooding in 1959 are still visible on the south side of the river approximately four hundred metres west of the road. It consists of three walls of a foundation constructed of locally available slate, a prominent aspect of the structure is a circular slate lined pit feature.

All other evidence for cultural resources including the earlier mills in this area have been destroyed by a variety of activities notably; road and bridge construction and landscaping for the properties located on either side of the river.

The survey crew returned to the study area on the second of May and finished the survey. This effort included the use of a canoe to access all areas of high and moderate potential. The conditions were ideal and thus subsurface testing was conducted (Figure: 1). The level terraces on both sides of the Sackville River at the west end of Webber Lake were shovel tested. Given the defined impact zone, that is, the current shore to a height of four metres and previous flooding the test units were shallow. The typical soil profile was characterized by a thin 'A' horizon seldom exceeding 5 centimetres, followed by a sand and gravel 'B' horizon (maximum depth 20 cms.) overlying gravel and boulder till. All of the test units proved negative.

The crew next moved to the areas defined as having moderate potential, again, these were subjected to shovel tests with the same negative results. Finally the bedrock outcrops were investigated including a return to the north shore exposure. These were visually inspected for petroglyphs in a dry state then water was used to wet the outcrops to enhance any possible faint glyphs. These techniques failed to show the existence of aboriginal petroglyphs on Webber Lake.

The historic graffiti included names such as JOHN MILLS, JOHN WILSON, KEVIN N, BOBBY P, MORGAN and CHARLES GOUGH. The only images incised in the stone were a headless torso of a naked female and a vulva form with a descriptive four letter word identifying the image. The main graffiti panel is a recently exposed slate outcrop, it is very smooth and shows no evidence of weathering or lichen growth. The older sections of the outcrop on the north shore and the entire south shore outcrop have been adversely affected by weathering and the effects of prolonged lichen growth. Given the lack of weathering and lichens on the main panel the graffiti is assumed to be post-1959 when the lake returned to its present low water level.

Evaluation and Discussion

The historical background study followed by an archaeological survey did not locate any significant cultural resources within the study area. It is important to realize that the study area is artificially defined by the projected increase in water level on Webber Lake. Thus the survey and background study concentrated on those areas which would be impacted.

Although no prehistoric sites of any type were located in the study area it is predicted that they exist in the vicinity. The Sackville River thoroughfare between Webber and McCabe Lakes is considered to have high potential for site distribution. These sites would be situated on the higher terraces above the impact zone. As they will not be affected by the proposed development they were not included in the field study.

HIGHWAY 104
KEMPTOWN BYPASS

Heritage Research Permit A1993NS09

By Dr. Stephen A. Davis
Davis Archaeological Consultants Ltd.

INTRODUCTION

Davis Archaeological Consultants Limited conducted an archaeological resource impact assessment for the proposed Kemptown Bypass, Highway 104 at Kemptown, Colchester County, Nova Scotia. The work was carried out under contract with the Nova Scotia Department of Transportation and Communications. It was deemed necessary as the bypass will cross the Salmon River which is known to have prehistoric cultural resources along its banks.

The study was authorized by the Nova Scotia Museum under Heritage Research Permit (Archaeology) number A1993NS09. The preliminary reconnaissance was completed on the 20th of May, while the background study was done on the 27th and 28th of May. The field survey was completed on the 26th and 27th of May.

PROJECT DESCRIPTION

The Nova Scotia Department of Transportation and Communications (NSDOTC) is planning to construct a new four lane, divided, controlled access, section of Highway 104 that will bypass the community of Kemptown, Colchester County. This bypass, which is approximately 3.2 km long, begins on Highway 104 approximately 1.8 km west of Riversdale Road, travels south of the community of Kemptown, and rejoins Highway 104 approximately 1.2 km east of Riversdale Road.

This project is part of the continuing initiative to provide a four lane, divided, Trans Canada Highway from the New Brunswick Border to Sydney. Twinning of Highway 104 on both sides of the Kemptown Bypass has already begun. Due to the location of commercial and private driveway accesses on Highway 104 in Kemptown it is necessary to bypass this section.

STUDY AREA

The study area is basically the Salmon River Valley where it will be impacted by the proposed bypass. It begins on the west on the down slope of a hill approximately 1.5 kilometres east of the Stevens Cross Road and continues for 3.2 kilometres to the up slope of the next hill. The northern and southern limits are defined by a surveyed corridor. The corridor was marked with a

staked centerline and the bypass limits of 45.7 metres on either side of the centerline. An additional area included a proposed access road paralleling the south side of the bypass at its eastern end (Figure: 1). A second extension of the study area encompassed two access roads running perpendicular to the bypass to link Riversdale Road with the bypass and the current Highway 104 (Figure: 2).

Although the study area, as defined by the corridor, is relatively short the biophysical characteristics are somewhat complicated due to the diverse terrain and past activities which have altered the landscape. In an effort to account for this diversity and to better manage the field survey the study area was divided into four sub-areas.

Sub-Area 1 (Figure: 1)

This study zone began on the eastern end of the study area and continued west to a logging road adjacent to the Esso station. It is characterized on the east by clear cutting with reforestation on the slope of the hill. The base of the hill contains numerous wet areas which drain into a small brook. The study area west of the brook is a poorly drained spruce dominated forest. The topography is characterized by drumlin features surrounded by swamps. These biophysical characteristics are not conducive to human habitation thus this sub-area was given a low potential ranking for cultural resources.

Sub-Area 2 (Figure: 1)

Sub-Area 2 is contiguous with sub-area 1 with its eastern boundary being defined artificially by the logging road. The drumlin, wet topography continues to the edge of the Salmon River flood plain. The forest cover remains predominantly spruce with scattered hardwoods. The flood plain on the east side of the river is the most extensive. It is approximately 300 metres from a former river terrace to the current river channel. The plain is characterized by thick stands of alder separated by low wet areas and exposed bare patches of river gravels. The only area deemed worthy of testing was the raised terrace above the flood plain. It's potential for cultural resources was rated at the low end of the moderate scale.

Sub-area 2 includes the Salmon River and the western bank inland to the edge of an abandoned gravel pit. The river, as it flows through the study area, is very fast and shallow. It also meets a small brook within this sub-area. The presence of this confluence as it appears on topographic maps and aerial photographs presented a high potential ranking for prehistoric cultural resources. In fact the preliminary field survey lead to such a ranking.

Sub-Area 3 (Figure: 2)

This unit was the most extensive yet it was deemed to have a low potential for cultural resources. The rational behind its ranking was it is the most heavily disturbed unit. It begins at the edge of an inactive gravel pit which runs to the edge of the Riversdale Road. Across the road the

corridor runs through a formerly ploughed field which ends at a second disused gravel pit. It then continues through a series of abandoned, overgrown fields to the base of the western hill.

A small brook runs through the sub-area west of the second disused gravel pit. It's banks are covered by dense stands of alders and there are a number of small bogs associated with the brook. The presence of former agricultural activities and secondary spruce growth lead to a moderate ranking for historic period resources within the sub-area west of the brook.

Sub-Area 4 (Figure: 2)

Sub-Area 4 has similar characteristics to the first sub-area. It begins at the base of the western hill and rises to where the corridor meets the existing Highway 104. It's eastern limits are covered by mature stands of spruce with the remaining areas having already been cleared by logging activities. The biophysical characteristics of this sub-area do not lend themselves to cultural activities other than logging thus it was ranked as having low potential.

METHODOLOGY

The research plan was designed as a standard phased approach which included a site reconnaissance, historical background study, literature search, review of site inventory files and a field study with selective sub-surface testing. The initial background study began with the application for a Heritage Research Permit when the principal investigator checked with the Nova Scotia Museum's curator of archaeology. At this time a review of the site inventory files revealed that no cultural resource sites were known within the study area. However, prehistoric sites were recorded for the Salmon River where it flows through the Bible Hill, Truro area. Thus the possibility existed for additional resources on the upper portion of the river.

The literature search and review of historic maps was conducted by a professional historian who utilized the resources of the Nova Scotia Public Archives. The results of this aspect of the study appear below under the heading **Results of Historical Background Study**.

The field survey began with contact being made with Mr. Brian Russell, resident engineer for the Department of Transportation and Communication, Truro. The field crew met Mr. Russell at the study area, he did not know of any cultural resources which would be impacted by the proposed bypass. Additional interviews were held with the two highway survey crews working on the corridor. They reported the position of two fence lines and a scatter of historic debris on the east side of one of the inactive gravel pits.

Prior to initiating the actual field work permission was gained from the affected property owners to investigate their holdings. A preliminary reconnaissance was made of the study area to familiarize the field crew with its characteristics. It was during this phase that the sub-areas were defined and recorded. The first day of the field project ended with discussions with two of the long

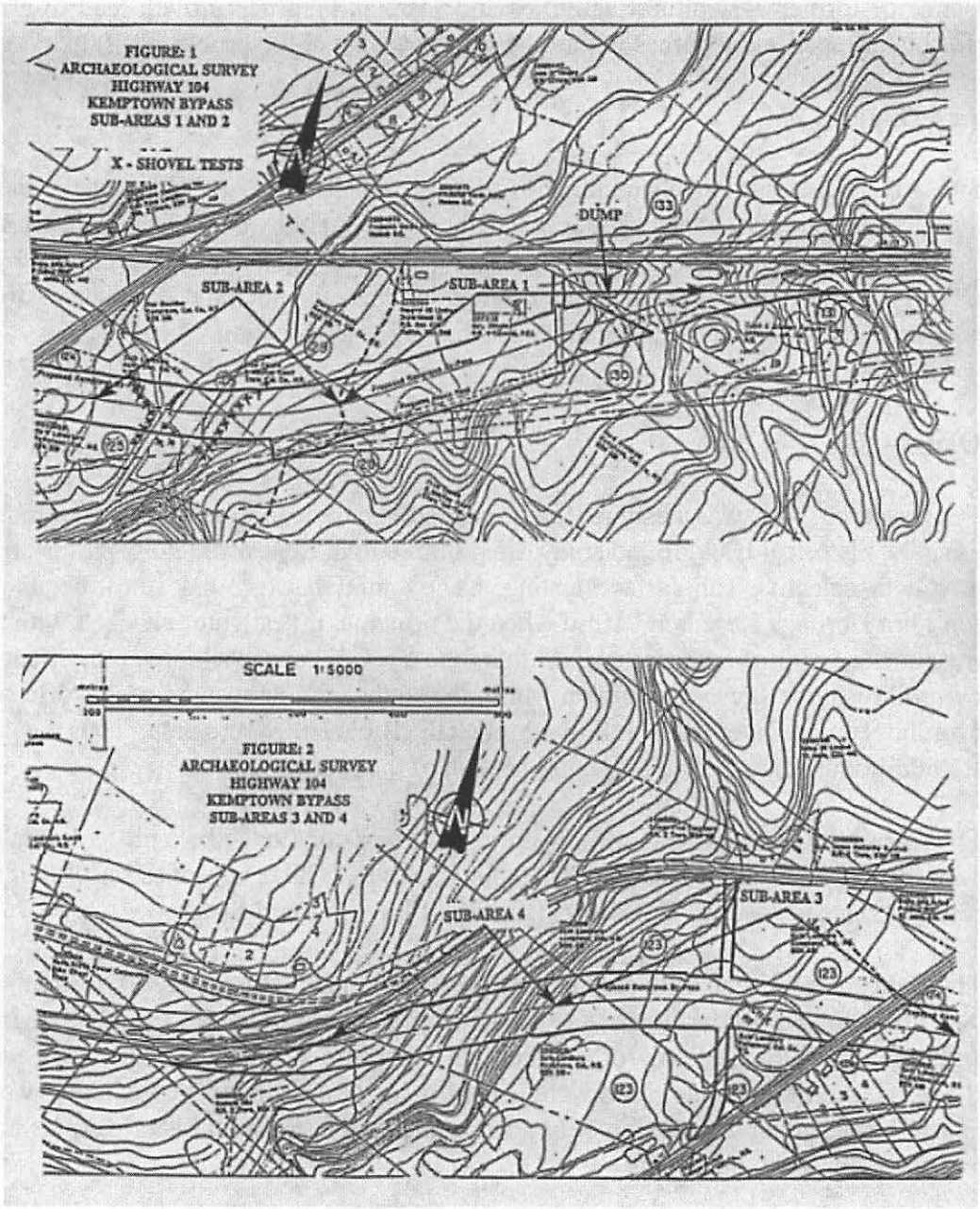


Figure 1 and 2

term residents of the area. Mr. Roy Boutillier of Riversdale Road did not know of any resources within the actual study area, however, he reported a mill site west of the corridor. This was not investigated as it fell outside of the research area.

The most informed resident was Mr. Seth Lansburg whose family have farmed the area for three generations. As with the previous informant he knew of no cultural resources which would be directly impacted. He did report that during the construction of the current Highway 104 prehistoric artifacts were found on top of the eastern hill. Mr. Lansburg was highly skeptical of this and was not able to provide a precise location nor the names of anyone who could provide additional information. However, he was certain that the finds, if real, were made outside of the study area covered in this report.

Results Historical Background Study

The area around Kemptown, in Colchester County was settled under the auspices of the Truro Township grant of 1765, and one of the grantees of the Township was David Archibald, who was only thirteen at the time. Archibald established a farm on the South side of the Salmon River, near Kemptown, where he was to reside until 1799, after which he moved ten miles up the River to Kemptown. After the Truro Township settlers, the next significant settlement of the area came in 1818-1819, after Irish immigrants cleared land at Kemptown (Martell, p. 100).

There appears to have been little activity in the area outside of farming. A Petition from 1837 reads, in part:

> "most of your Petitioners are settled from twelve to fourteen miles from a Grist Mill in consequence of which they are subjected to loss of time and much inconvenience, that your Petitioners have already exerted themselves to the utmost of their abilities in making a dam and erecting the walls of a building for a mill near the new Bridge on the Salmon River, but from the want of means your petitioners are unable to provide materials for setting her in operation" (RG5 Series P Vol. 52 #60. February 21, 1837).

Thomas Miller informs us that David Archibald established "mills at the same places which Mr. George Hamilton has his saw-mill now" (Miller, p. 76; See A.F. Church map). This would situate the mill south of the village of Kemptown, on the Salmon River. There are two other Sawmills identified on the Church Map, one situated to the north-east, and another to the south, in close proximity to the Inter-Colonial Railway tracks. Interestingly, this latter mill was clearly labelled as a "steam saw-mill." The only other non-residential feature in the I.C.R. - village corridor area is a school situated south of the rail tracks.

The only other enterprise in the vicinity of the study area was a coal mine. This was located some distance away and would not have impinged on the study area in any way. The coal mine was first worked in the 1830s, but owing to the monopoly provisions provided to the General Mining Association, was ordered to close. It was reopened in 1858 under the promotion of local

entrepreneurs, including Robert Smith, John Archibald, Charles Blanchard, Richard Christie, Isaac Christie, John Ross and A.S. Hingley (Novascotian 30 August 1858; RG5 Series P Vol. 52 #60. February 12, 1859).

It is clear that economic activity in the Kemptown area was restricted and highly localized along the Salmon River, and the village of Kemptown, and, to a lesser extent, along the Inter-Colonial Railway when the tracks were extended to Pictou County. The majority of activity in all likelihood took place on the farms, and as a result, no historic resources were identified for the study area that will be impacted by construction activities.

Results Archaeological Survey

The second day of the field project began in sub-area 1, the crew used the centerline as a reference and walked transects perpendicular to it between the corridor limits. This method of survey investigation was subsequently used in the remaining portions of the study area. The only cultural activities encountered in this sub-area were former logging roads and a large refuse dump (Figure: 1). The dump is located 500 metres east of the Esso station and 50 metres south of the current Highway 104. Its contents include derelict car bodies, gas tanks, car seats, two signs painted with OPEN and GULF and numerous license plates with 1970's dates. It is fairly obvious that this was debris dumped from the gas station when it was operated as a Gulf station. The cultural activities in this sub-area are not considered as being significant.

Sub-area 2 was investigated following the same technique as sub-area 1. The eastern side of the Salmon River was investigated first. Twenty-five shovel tests were dug along the raised terrace above the flood plain (Figure: 1). These produced fairly consistent soil profiles. As noted in the discussion on biophysical characteristics this area is a major drainage from the eastern hill. Thus the profiles featured rich brown organic soils containing gravel till. None of the shovel tests produced evidence for cultural activity.

The southern limits of this sub-area have been extensively disturbed by the placement of a transmission line and a buried cable. The exposed soils from these activities were checked. A single fractured quartz flake was found on the transmission service road. Four shovel tests and five vertical cuts in the vicinity of the find spot failed to produce any other specimens. Although quartz is rare within the study area a number of naturally occurring rocks baring quartz were noted. It was concluded that the flake was the result of a natural fracture and not cultural.

The final six shovel tests on this side of the river were dug on a slight rise next to the river (Figure: 1). This was obviously a favorite sport fishing spot as evidenced by the remains of four firehearths on the surface. The tests did not produce any evidence of buried cultural activity.

The crew next moved to the west side of the river and conducted twenty-five shovel tests along the raised terrace bounding the river and small brook. Although soil development is somewhat more complicated no cultural activity was discovered. The profiles showed a 5 cm 'A' horizon

underlain by a burnt charcoal layer on top of a grey clay which capped the sterile gravel till. The presence of the charcoal was attributed to a forest fire this conclusion was confirmed by Mr. Seth Lansburg.

Given the extensive soil exposures resulting from the gravel pit operations, road construction and ploughing no shovel tests were deemed necessary within sub-area 3. The pedestrian survey encountered a variety of cultural activities and debris throughout this area. These ranged from farm roads, abandoned farm machinery, a childrens camp, to six moss covered rock piles.

The rock piles were somewhat curious in that the moss growth appeared to give them some antiquity. However, the crew carefully removed a number of stones from one and discovered a rusted tin can beneath the moss covered rocks. It was concluded that they resulted from field clearing activities. This was subsequently confirmed by Mr. Seth Lansburg who reported that his father had a garden in the area approximately fifty years ago.

Sub-area 4 is represented by a steep hill which was deemed to have low potential for cultural activity. It was investigated by random transects and no areas were identified as requiring sub-surface testing.

EVALUATION AND DISCUSSION

The historical background study, site reconnaissance, informant interviews and field survey did not identify any significant cultural resources within the study area. This combined with the lack of any natural features which would have attracted prehistoric populations to the river suggests that no pre-European activities occurred within the study area.

Historical Background Sources Consulted

MAPS:

PANS -F/220-1902- Colchester County Geological Survey Map [1902]

PANS V7/230-1858-Colchester County-I.C.R. Survey Map
The A.F. Church Map, Colchester County [1874]

Primary Sources:
RG Series P Vol. 17 #25. Truro 12 February 1859.
RG Series P Vol. 52 #60. February 21, 1837.
Novascotian 30 August 1858.

Secondary Sources:

Thomas J. Brown, *Place Names of the Province of Nova Scotia*. 1922.
J.S. Martell, "Military Settlements in Nova Scotia After the War of 1812" in *Collections of the Nova Scotia Historical Society*. Vol. 24 (1938), p.p. 75-105.
Thomas Miller, *Historical and Genealogical Record of the First Settlers of Colchester County*. Belleville: Mika, 1972[1873].

SUPPLEMENTARY TESTING OF THE BAIN SITE

Heritage Research Permit A1993NS12

By Michael Sanders

The Bain site, located beside the Chegoggin River near Yarmouth, Nova Scotia (Fig.1), contains Late Archaic and Ceramic Period components (Davis and Sanger 1991, Sanger1991, Sanger and Davis 1992). Testing conducted in 1987 and 1988 as part of the Chegoggin Archaeological Project (Fig. 2) revealed few traces of the Archaic component, which is prominently represented in private collections of artifacts from the site. From May 30 to June 1 of 1993, Michael Sanders and masters program advisor Dr. David Sanger of the University of Maine revisited the Bain site to locate and test undisturbed Late Archaic deposits, operating under research permit A1993NS12.

The goal of the 1993 project was to examine the strata lying beneath a mound of sand and coal cinders, by-products of S. Ryerson's quartz-crushing and gold-sluicing enterprise which operated on the site in 1869 and 1870 (Bain 1981-1986:2). Previous research determined that the 40cm high mound lay within the central area of Late Archaic occupation, yet was not extensively potted by avocational archaeologists.

After photographing the mound and mapping its contours, Sanders and Sanger monitored as landowner Lloyd Sweeney used a front-end loader to transect much of the rise with a 2 x11 m trench (see Fig. 2). Excavation progressed in repeated shallow passes from the northern perimeter to a point just south of the mound's centre. A mixture of marine clay, loam, coal, coal cinders, late nineteenth-century stoneware, and prehistoric cultural soil with flakes and fire-cracked rocks was revealed as the overburden of sod, sand, and cinders was removed. Additional loader excavation gradually removed the mottled layer of disturbance, exposing homogenous marine clay at a depth of 70 cm. Once the clay was encountered along the entire length of the trench, excavation ceased. No structural remains were found and no artifacts were collected.

Dr. Stephen A. Davis of St. Mary's University and the site's namesake, Nathan Bain, assisted in straightening and examining the walls of the trench. Mottled and unstratified soils were ubiquitous throughout the trench with the exception of one section of the northeastern profile. A l m x 1 m trowel unit excavated in the single promising area (see Fig. 2) revealed fragments of brick and coal in a context that also contained a concentration of agate flakes (none of which were collected). This confirmed that, beneath the mound, disturbance of prehistoric cultural deposits was absolute. With little potential to encounter an expanse of pristine Archaic component elsewhere on the site, the researchers ended the project ahead of schedule, without conducting further testing. The trench was later backfilled by Sweeney.

The presence of coal, brick, and late-nineteenth-century ceramics in the mixed layer indicates that the disturbance occurred after the establishment of the rock crushing operation. From its massive

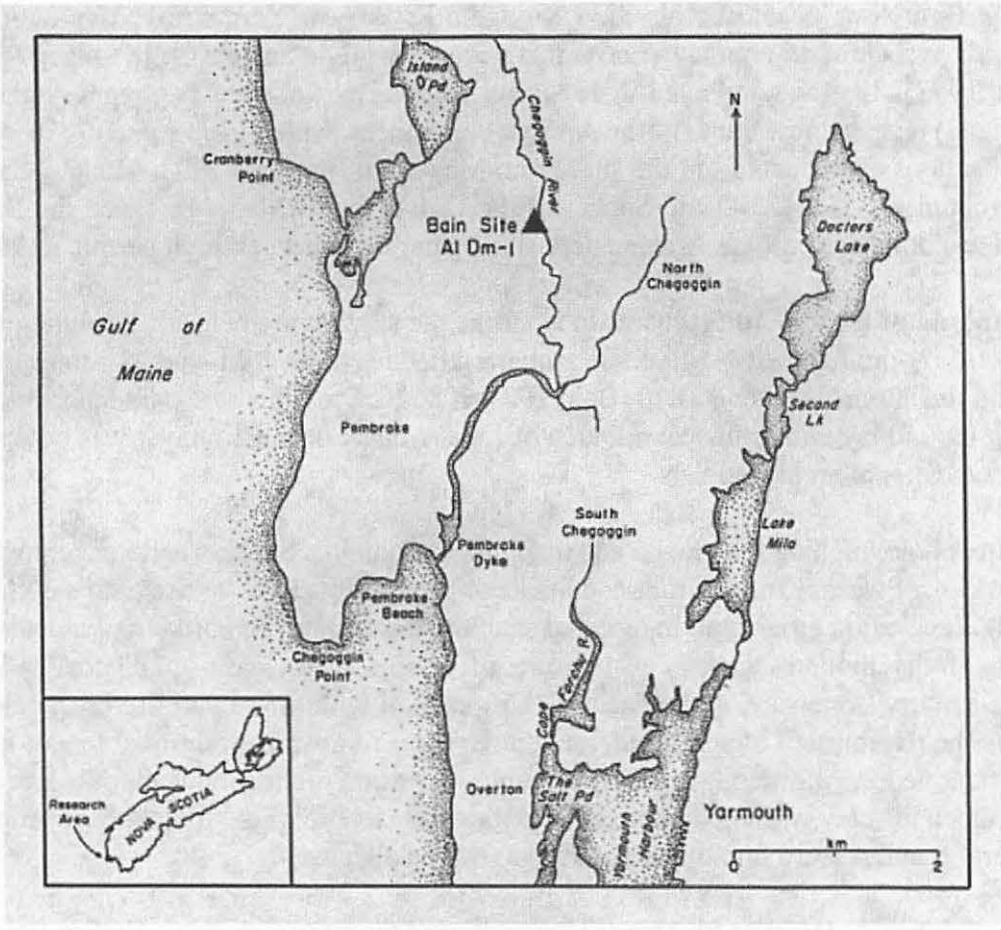


Figure 1 Location of the Bain site.

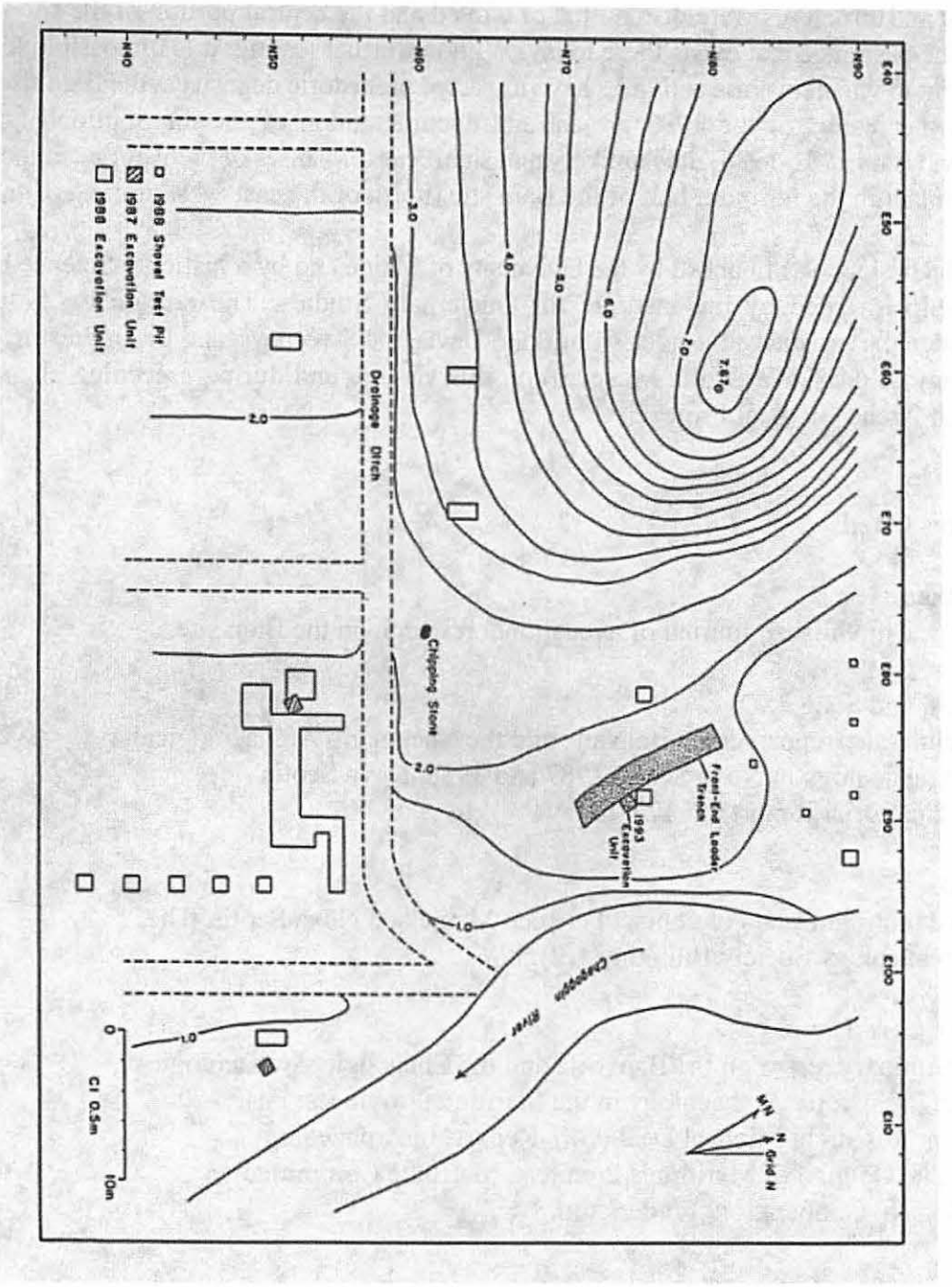


Figure 2 Distribution of professional excavation at the Bain site.

distribution, the disturbance appears to have resulted from extensive land-surface grading. I hypothesize that, following the abandonment of the crushing operation in 1870, obstacles such as equipment and structures were dismantled or moved and the central portion of the site was graded to create the pasturage that exists there today. Without further testing, it is impossible to be certain of the extent to which historic activities have impacted prehistoric deposits at the Bain site; however, based on the results of the 1993 project and documentation of the distribution of pothunting endeavours (Bain 1981-1986), it is unlikely that significant expanses of prehistoric components have survived intact in the northern half of the Bain site (north of the east-west drainage ditch).

The project was financed by the University of Maine and by a National Science Foundation assistantship awarded by the Institute for Quaternary Studies. The researchers would like to acknowledge the assistance received from Bain, Davis, the Sweeneys, and Brian Preston (curator of archaeology at the Nova Scotia Museum) on this venture and during preceding elements of the Chegoggin Archaeological Project.

References Cited

Bain, Nathan
1981-1986 Unpublished journal of avocational research on the Bain site.

Davis, S.A. and Sanger, D.
1991 Preliminary report on the Bain site and the Chegoggin Archaeological Project. Archaeology in Nova Scotia 1987 and 1988, Nova Scotia Museum Curatorial Report 69: 173-191.

Sanger, D.
1991 Five thousand years of contact between Maine and Nova Scotia. The Maine Archaeology Society Bulletin 31(2):55-61.

Sanger, D., S.A. Davis
1992 Preliminary report on the Bain Site and the Chegoggin Archaeological Project. In Prehistoric Archaeology in the Maritime Provinces: Past and Present Research, Michael Deal (ed.), Reports in Archaeology 8:59-72. The Council of Maritimes Premiers, Maritime Committee on Archaeological Cooperation: Fredericton.

ARGYLE HISTORIC BURIAL GROUND
ARCHAEOLOGICAL SURVEY

Heritage Research Permit No. A1993NS16

By: Dr. Stephen A. Davis
Davis Archaeological Consultants Limited

Summary:

An archaeological survey was conducted at the Argyle Historic Burial Ground located on the eastern shore of the East River in the community of Argyle, Yarmouth County. The primary objective was to locate the remains of an early nineteenth century church/meeting house. Testing was restricted to an area between the old and new cemeteries north of the Mount Pleasant Cemetery maintenance building. The test units did not reveal the presence of any cultural features.

Introduction:

The archaeological survey of the Argyle Historical Burial Grounds was funded by the Department of Tourism and Culture. The primary objective of the study was to locate the remains of an early nineteenth century church/meeting house. The project was carried out over a three day period between August 2nd and 4th under Heritage Research Permit (Archaeology) number A1993NS16.

Proposed Project:

The Argyle Historic Burial Ground was the location of a restoration plan completed in 1991 by Porter Dillon Limited of Halifax. This plan makes a number of recommendations which require the services of a professional archaeologist. Principal amongst these was to locate the remains of the first church/meeting house which was believed to have been located in an area north of the Mount Pleasant Cemetery, garden shed (Figure: 1). The reason for the current undertaking is that the shed is in need of repair and may possibly be relocated in the general area of the former church/meeting house. At this time; the size, location and scheduling of the repair or reconstruction has not been decided. In part, the results of the archaeological survey would direct this aspect of the restoration plan.

Study Area:

The study area was limited to the northeast corner of the old burying grounds. The boundaries included a stone wall and the garden shed on the south, a line of graves in the old

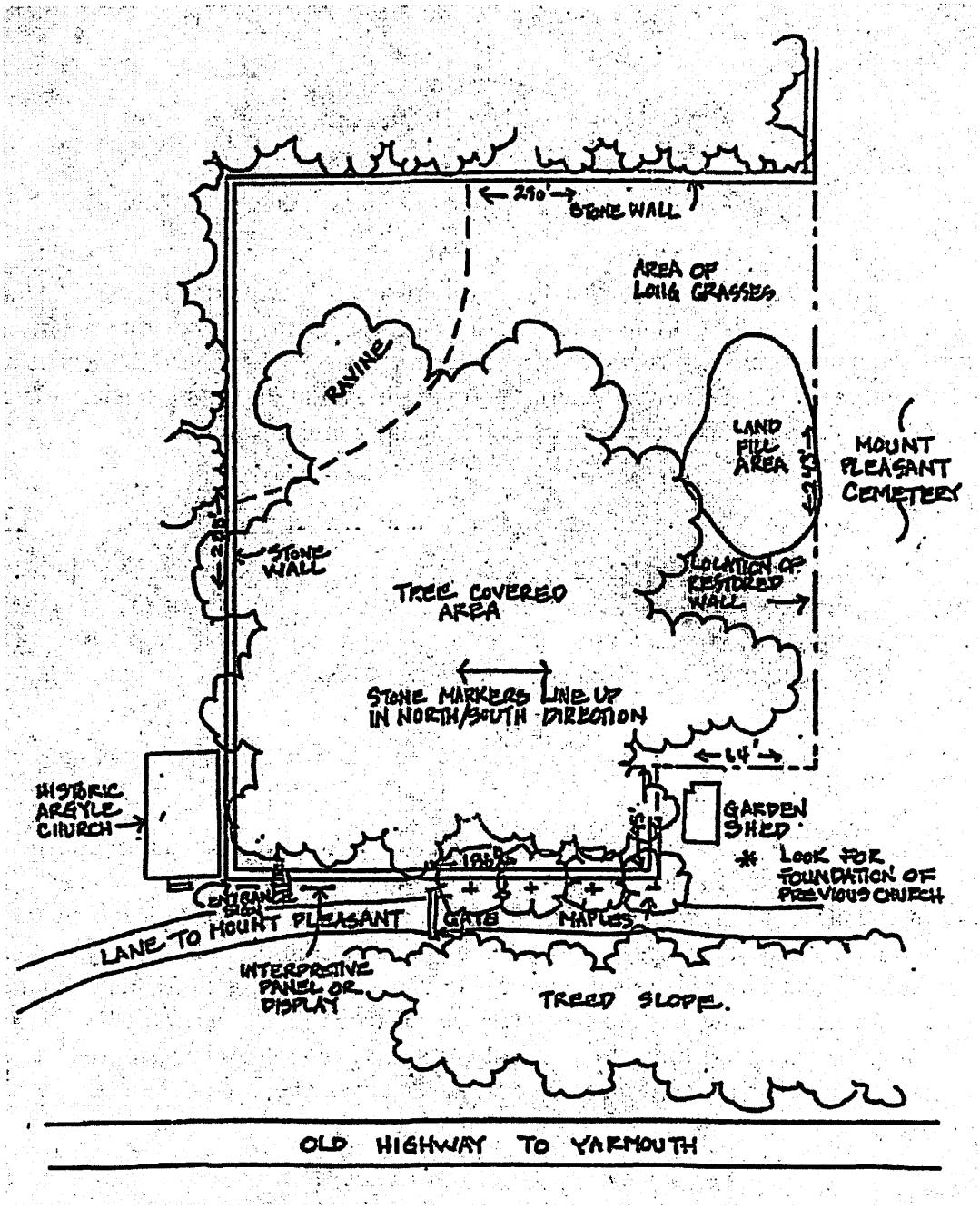


Figure 1 Study Area: Argyle Historic Burial Ground

cemetery on the west, the graves on the north in the Mount Pleasant Cemetery and a steep treed slope on the east (Figure: 2). This area encompassed approximately 540 square metres, however, it can be reduced by taking into account the disturbances caused by the garden shed, the lane to the Mount Pleasant Cemetery and the east/west lane with landscaping associated with the newer cemetery. These effectively reduced the study area to approximately 150 square metres.

The only biophysical characteristic of the study area which may have influenced the placement of the church/meeting house would have been the summit of the drumlin. Traditionally, religious structures of this period were built on the highest point of land. Although extensive landscaping has altered the top of the drumlin the eastern edge has remained unaltered. Viewing the contour of the slope, looking west, the summit would have been approximately 30 metres north of the study area.

Methodology:

The basic research plan was formulated prior to the fieldwork on data presented in the Porter Dillon report. It was further refined by discussions will local informants and the initial field reconnaissance. Although, as mentioned the location and size of the new garden shed has yet to be determined it is anticipated that it will remain within the study area. Thus the archaeological testing was confined to a level area adjacent to and north of the existing shed (Figure: 2).

The testing consisted of four units which measured two metres by one half a metre in size. They were excavated by hand to sterile soils.

Results:

Test Pit #1

Test pit #1 was situated 8.30 metres north of the garden shed and was laid out to cover the edge of the level area. The east end of the unit contained large fieldstones placed in a random fashion. The soils above, around and below these stones clearly indicated disturbed soils. The artifactual evidence in this unit consisted of glass fragments from two vases, plastic flower peddles and a Hostess potato chip bag found below the fieldstones. The initial field observation was that this area was recently landscaped. This was confirmed by local informants who stated that the study area had been altered after the garden shed had been built approximately 20 years ago.

Test Pit #2

Test pit #2 was located four metres due west of unit number 1 and two metres east of a line of foot markers for graves in the old cemetery. This unit's characteristics were quite different from the former. No fieldstones were encountered however it contained more gravel with mottled soils indicating recent deposition. The only cultural material was represented by brick fragments. The evidence combined to indicate that this area had also been part of the recent landscaping activities.

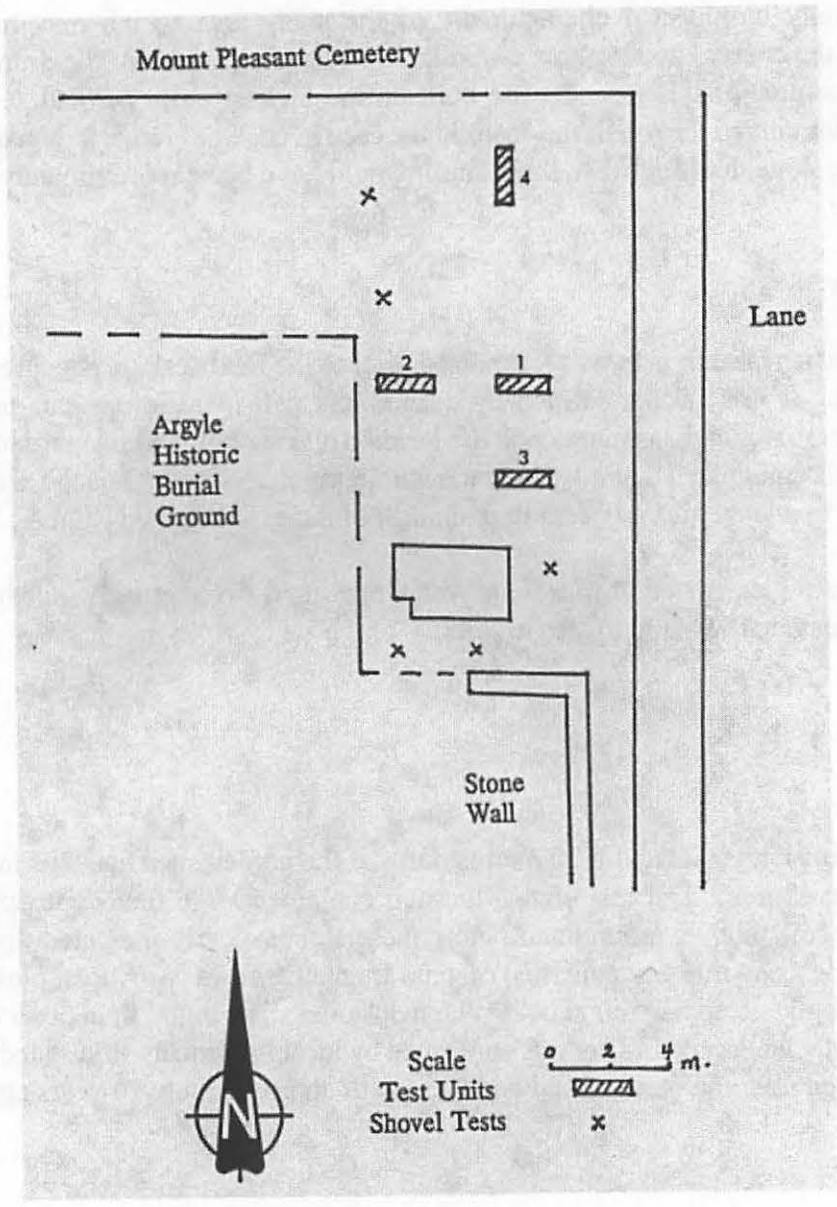


Figure 2 Archaeological Test Units: Argyle Historical Burial Ground

Test Pit #3

This unit was situated four and a half metres due south of unit number one. Its placement was to confirm that the fieldstones encountered in the first were in fact displaced. The results supported this, large fieldstones were encountered, the cultural material under them consisted of wire nails and fragments of a glass screw top mason jar.

Test Pit #4

Given that the previous units all clearly indicated recent disturbance the final unit was placed ten and a half metres north of number one. It was felt that this was as close to the graves in the Mount Pleasant Cemetery as was feasible without disturbing human remains.

This unit's soils were extremely compacted indicating the presence of a former roadway. Although no fieldstones were encountered this unit produced more cultural material then the others. Field observations on ceramics, bottle glass and nails indicate an age in the first quarter of the twentieth century. Thus the material was not compatible with age of the first church/meeting house.

To augment the formal test units a series of shovel tests were dug. Two were excavated between the stone wall and garden shed with a third in front of the shed. Two additional tests were dug five and a half metres west of Test Pit #4. These units confirmed that this area had been extensively landscaped. A metal probe was also used, however, this proved futile due to the presence of buried naturally occurring stones throughout the study area.

Evaluation and Discussion:

No significant cultural features exist within the study. This conclusion is based upon field testing, informant interviews and background studies. Although it can not be confirmed through archaeological methods we suspect that the church/meeting house was situated further north of the study area in what is now the Mount Pleasant Cemetery. Given the extensive landscaping activities combined with the presence of graves it is highly unlikely that any evidence remains of this historic structure.

ARCHAEOLOGICAL SITE MONITOR
SHUBENACADIE CANAL AT LAKE CHARLES

Heritage Research Permit
A1994NS03

By Dr. Stephen Davis
Davis Archaeological Consultants Limited

Introduction

At the request of CBCL Limited, Consulting Engineers, Davis Archaeological Consultants Limited provided personnel to monitor two backhoe trenches dug on the Shubenacadie Canal at Lake Charles. The monitoring service was deemed necessary as two types of heritage resources were in close proximity to the backhoe trenches. The resources were identified during a 1983 archaeological survey of the area by Saint Mary's University (Davis: 1983).

The 1983 report assigned one of the resource sites as Feature 10 and described it as follows:

> Twenty-eight metres south-westerly down the canal from the outflow of Lake Charles is a disturbed wall of ashlars and quoins of both granite and sandstone. It lies parallel with the canal and forms part of the west wall. Whilst the ashlars protrude above water for a few courses at the north-eastern end, they are submerged as the wall descends toward the south-west. As well, the south-west end appears to be only one course of ashlars. The wall is 15 m in length.
>
> Directly across the canal lie a few granite ashlars with drilled holes and cut grooves. They are just above the water level. Also, there are a few sandstone ashlars, and what appears to be a keystone, in a group just north-east of the grooved stones. Just south-west of these special stones is a retaining wall of two tiers. (Ibid: 16-17).

The second potential resource site is less definitive being "represented by the occasional prehistoric artifact being turned in to the Nova Scotia Museum, these from the south end of Lake Charles just west of the Canal entrance" (Ibid: 22).

Methodology

The first backhoe trench was dug on the east side of the canal approximately three metres above the water level. This work was completed on the 17th of February 1994. As each load was removed the archaeological monitors watched the sides of the trench for soil colour changes and for artifactual evidence. The dumped load was also scanned for artifactual evidence. The backhoe operator was asked to stop on two occasions in order for closer examination of the trench profiles.

Throughout the process no cultural activity was observed in this trench.

The second trench was dug on the 13th of May 1994 on the west side of the canal one metre above the water level. The same observational techniques were applied with only one stoppage of the backhoe. This trench did contain evidence of cultural activity in the form of soil placement, that is, the stratigraphy contained clay/sand layers over beach gravel. It would appear that during the construction of the canal this bank was heightened by filling.

Conclusions/Recommendations

It is the professional opinion of Davis Archaeological Consultants Limited that no significant cultural resources will be impacted by the proposed construction of the water control sluice. It is therefore recommended that in terms of the Special Places Protection Act (1980) that the construction be allowed to proceed.

References Cited

Davis, Stephen A.
1983 "Initial Archaeological Survey Shubenacadie Canal Redevelopment Project" ms. Property Development Section, Real Estate Services, Public Works Canada, Halifax.

BRUSHY HILL - ST. CROIX TRANSMISSION LINE CONSTRUCTION

Heritage Research Permit A1994NS08

By Dr. Stephen Davis
Davis Archaeological Consultants Limited

Introduction

Nova Scotia Power Incorporated (NSPI) is planning to construct approximately 27 km of 230 kv transmission line on a 38 m wide right-of-way between Brushy Hill Substation, Halifax County and a Tap to an existing transmission line at St. Croix, Hants County (Figure 1).

The objective of this study was to identify heritage resources along the proposed transmission line and delineate the site boundaries of the finds, if any. The work was not to include detailed excavation and interpretation of features. The "Terms of Reference" provided by NSPI included the following activities:

- Conduct a preliminary reconnaissance of the entire proposed transmission line route to develop a feel for the environmental resources and geographic features which may be of importance. If necessary, conduct further archival investigation, and contact other professional archaeologists who have worked in the region and who may have unpublished site or collections data.

- Prepare a Heritage Research Permit application and submit to the Nova Scotia Museum for approval of the field investigation.

- Carry out field investigation at each of the areas identified during the Environmental Assessment for Twinning of Highway 101 (PLA, 1993) and at any additional areas identified during the initial reconnaissance as being of high potential to determine the presence of heritage resources. Field investigation sites include, but are not limited to: 1) Sackville River, 2) northeast shore of Lacey Lake, 3) Duck Ponds Brook, 4) Bog Brook, and 5) St. Croix River.

- At each field investigation site, the surface within a 500 m radius will be judgmentally sampled and examined for the presence of archaeological features; exposures such as river banks, tree falls and blowouts will be examined for evidence of archaeological remains, and test pits will be dug to discover subsurface cultural material.

- Cultural material recovered will be mapped in all dimensions prior to removal from the ground and identified prior to placement in site- and level-specific bags. Any organic, metal or other artifacts or other remains requiring conservation will receive field treatment to

render the object stable until it is delivered to the firm's laboratory.

- Analyses and reporting will include an outline of the methods used/persons contacted during the course of the work, a full description of the site(s) according to accepted standards, a map which clearly delineates the site(s) boundaries, and a catalogue of artifacts recovered from the site(s).

The heritage resource study was conducted by Dr. Stephen A. Davis assisted by Mr. Laird Niven. The field work was undertaken May 9th and 10th, 1994. The historical background study used data collected during a previous impact assessment (A1993NS32) for the NSDT & C Highway 101 Twinning Project (Davis, 1993) with additional work directed towards areas not covered in the assessment. This report is organized following an abbreviated format outlined for an Impact Assessment Report in the Nova Scotia Museum's Draft Guidelines for Heritage Research Permits (Archaeology), Special Places Protection Act (1992: 28-34). The format as outlined in the guidelines is extensive with many sub-headings that are not relevant for this project. Thus an abbreviated version is used in compiling this report.

Proposed Project

The proposed transmission line will extend between a tap of an existing line at St. Croix, Hants County and Brushy Hill substation, Halifax, County. From the tap at St. Croix, the route travels for 15.5 kms east, parallelling and immediately south of an existing 138 kv transmission line right-of-way. Then the proposed alignment crosses the existing line and parallels it on the north side for 7 kms. It leaves the existing transmission corridor veering northeast and east for 4.5 kms to the Brushy Hill Substation (Figure: 1).

The precise boundaries of the project area are those defined above and shown on Figure 1. The design planning for construction of the transmission line will have a very low level of land alteration or disturbance. Generally, the right-of-way will be cleared of vegetation but not grubbed. However, excavation will occur at each of the structure locations.

The project schedule is as follows: clearing will occur in the fall of 1994, construction will follow in summer 1995, and the in-service date is October 1995.

Project Area

The physiography of the study area beyond the water crossings is extremely poor for human settlement. It is generally characterized by glacial uplands separated by wet bogs and swamps areas with these traits were not surveyed. Although the two major river crossings were considered as having high potential the proposed transmission line crosses them in areas with the least desirable traits for human habitation. This is particularly true for opportunities to exploit natural resources.

The initial reconnaissance identified all water crossings as being of high or moderate

potential for heritage resources. The two high potential areas identified were the crossing of the 1) St. Croix River and 6) the Sackville River. Moderate potential crossings included the following: 2) Bog Brook, 3) unnamed ponds south of Five Island Lake, 4) Duck Ponds, and 5) Lacey River [numbers refer to surveyed areas as shown on Figure: 1].

Methodology and Results

The research plan involved two professional archaeologists carrying out a background study and conducting a pedestrian survey of all of the areas designated as having high or moderate potential for heritage resources. The experience gained by the principal investigator during a survey for the twinning of Highway 101 aided in assessing the potential of heritage resources at sites along the proposed transmission line route.

Historical Background Data

The historical background study began with a check of the Nova Scotia Museum's site inventory records. These files did not contain any recorded heritage sites nor did Dr. Brian Preston, Curator of Archaeology have any information on sites along the proposed route. As part of the background study contact was made with Dr. Michael Deal, Archaeology Laboratory, Memorial University of Newfoundland, who has conducted archaeological excavations on the St. Croix River (Deal, 1993). Dr. Deal had not received any reports of heritage resources within the study area. Information was also sought from Mr. Laird Niven the archaeologist who conducted the excavations at Uniacke House (Niven 1993) and Mr. David Grace an amateur historian from Sackville. As with the Museum's records, neither of these sources had knowledge of heritage resources along the proposed transmission line.

The Nova Scotia Public Archives records were accessed in particular the historic maps for the study area. As noted in Heritage Research Report Permit A1994NS08 A. F. Church's map places a small (now abandoned) community approximately 500 m north of the proposed transmission line. Church's map dated 1871, identifies the community as Stillwater and shows the presence of a rail siding; school, mill and a commercial enterprise called Hoyt & Co. The map also contains an additional seven structures which are not identified but are assumed to represent residential homes. Interestingly, although the rail siding appears the remaining structures are not shown on Geological survey maps produced at the turn of the century (1906-1916). The locations of these heritage resources are outside of the study area and therefore they will not be disturbed by the proposed construction of the transmission line.

Heritage Resource Study: Archaeological Survey

When conducting a heritage resource study the first phase is to identify all recorded resources within the study area. As has been noted in 4.1 Historical Background Study, the route of the proposed transmission line does not contain any documented heritage resources. Thus the second phase was initiated which involved field studies in areas deemed to have high or moderate

potential for heritage resources. The field team have a combined thirty-five years of experience in conducting archaeological surveys. This experience was used to assess each area in terms of its potential for past cultural activities. The province of Nova Scotia has a long and complex history of human settlement beginning approximately 11,000 years ago. A detailed explanation of the cultural events and the process of identifying them is beyond the scope of this report, however, as a general guide a short discussion paper prepared for the Nova Scotia Department of Natural Resources is appended to this report.

Area 1: St. Croix River

The survey began at the St. Croix River crossing at the west end of the proposed line. The crew walked from the point where the proposed line will tap into the existing line eastward to the bank of the St. Croix river. This area contains evidence of modern cultural activities including gravel roadways and dirt paths with recent dumps. However no evidence of historic features were found along the proposed transmission line. Although the river crossing was deemed to have high potential this ranking changed with the field investigation. The west bank, at the crossing, is characterized by a steep 10 m high cliff. The crew investigated two level terraces slightly north of the proposed line with negative results. As there is no suitable place to establish a camp site this crossing is deemed to have low potential for prehistoric habitation.

The crew shifted its attention to the east bank of the river. They again walked into the crossing along the existing line. Similar cultural activities were noted, that is, gravel roadways and dumps all of fairly recent age. The east bank, although less steep, was not considered conducive for prehistoric sites. A small level terrace was shovel tested with negative results. The soil profiles indicated that it was recently formed by erosional deposition resulting from a path leading down to the river.

To check the terrain ranking model, the crew walked over a low potential upland area east of the St. Croix river. As expected this type of terrain offered very few opportunities for cultural activities being characterized by exposed bedrock, glacial erratics and thin soils.

Area 2: Bog Brook

The Bog Brook crossing was investigated with negative results. The area is characterized by elevated exposed bedrock features with limited soil development bounded by low poorly drained wetlands.

Area 3: Small Ponds south of Five Island Lake

This area was surveyed during the Highway 101 project with shovel testing conducted on both sides of the ponds (Davis, 1993). As with Area 2, it is characterized by exposed bedrock, thin soils and wetlands, features which are not conducive to human habitation.

Area 4: Duck Ponds

The only cultural evidence noted at Duck Ponds were associated with modern activities. This included a number of modern surface hearths with associated garbage (beer and pop cans). A small terrace was shovel tested and numerous tree throws were checked all with negative results.

Area 5: Lacey River

The crew accessed this area by canoeing across Lacey Lake to the mouth of the river. Although outside of the proposed study area a historic complex was discovered at the confluence of the lake and river. It consisted of a road, a possible bridge and a foundation on the east side of the river. As this complex was well outside of the study area no further work was conducted.

The transmission line crosses Lacey River five hundred metres east of the historic complex. The north side of the river is characterized by a low lying swamp while the south bank features a steep drumlin with no terracing. Neither of the banks present suitable areas for prehistoric habitation.

The crew attempted unsuccessfully to reach the crossing of an unnamed brook that connects Lacey Lake with Bottle Lake. The terrain was exceptionally rugged with exposed bedrock ridges surrounded by swamps. A survey of the mouth of the brook at Lacey Lake revealed it to be a minor watercourse with low potential for heritage resources.

Area 6: Sackville River

The crew walked the centre line beginning at Highway 1 to the Sackville River crossing. The only cultural activity noted was a former logging road. A thorough investigation along the road did not identify and other cultural features.

As with the St. Croix River the high potential ranking of the Sackville River crossing was reduced to low potential. At the point where the transmission line crosses the river it is bounded by low swampy areas not conducive for human habitation.

Conclusions

This heritage resource study did not reveal any significant cultural resources in the area of the proposed transmission line right-of-way. Therefore it is unlikely that the proposed construction of a transmission line from Brushy Hill substation to St. Croix will disturb any cultural resources. This conclusion is based upon a historical background study, a pedestrian archaeological survey and the geomorphological features of the landscape. Although the background study identified a former late-nineteenth century community at Stillwater the line will pass south of this by approximately 500 metres. The survey noted numerous cultural features which were either outside of the impact area (historic complex, Lacey Lake) or historically insignificant (logging roads, modern garbage dumps,

fire hearths associated with sport fishing).

References Cited

Davis, S. A.

1993 "Final Report: Cultural Resource Assessment Highway 101 From Middle Sackville To The Ellershouse Overpass", m.s. Nova Scotia Museum, Halifax.

Deal, Michael

1993 "Preliminary Report for 1993 Archaeological Fieldwork at the Prehistoric St. Croix Site, Hants County, Nova Scotia, ms. Nova Scotia Museum, Halifax.

Fergusson, C. B.

1967 *Place - Names and Places of Nova Scotia*, Public Archives of Nova Scotia, Halifax.

Niven, Laird

1993 "Archaeological Investigations on the Uniacke Estate, Hants County, Nova Scotia, 1992" Curatorial Report No. 74, Nova Scotia Museum, Halifax.

P. Lane and Associates Ltd.

1993 "An Environmental Assessment and Water Rights Application for Twinning of Highway 101 between the Beaverbank Interchange and Ellerhouse", ms. Nova Scotia Department of Transportation and Communication, Halifax.

1992 "Nova Scotia Museum, Draft Guidelines, Special Places Protection Act, Heritage Research Permit (Archaeology) March 27, 1992, ms. Nova Scotia Museum, Halifax.

1981 "Special Places Protection Act, Chapter 17, Statutes of Nova Scotia 1980" Queen's Printer, Halifax.

Maps

Faribault, E. R.

1906 "Geological Map - Province of Nova Scotia" Ponhook Lake Sheet #72. Department of Mines Canada, Ottawa. (issued 1916).

Faribault, E. R. and Hugh Fletcher

1909 "Geological Map - Province of Nova Scotia" Windsor Sheet #73. Department of Mines Canada, Ottawa.

Church, A. F.

1871 "Topographic Township map of Halifax County, Nova Scotia", Public Archives of Nova Scotia, Halifax.

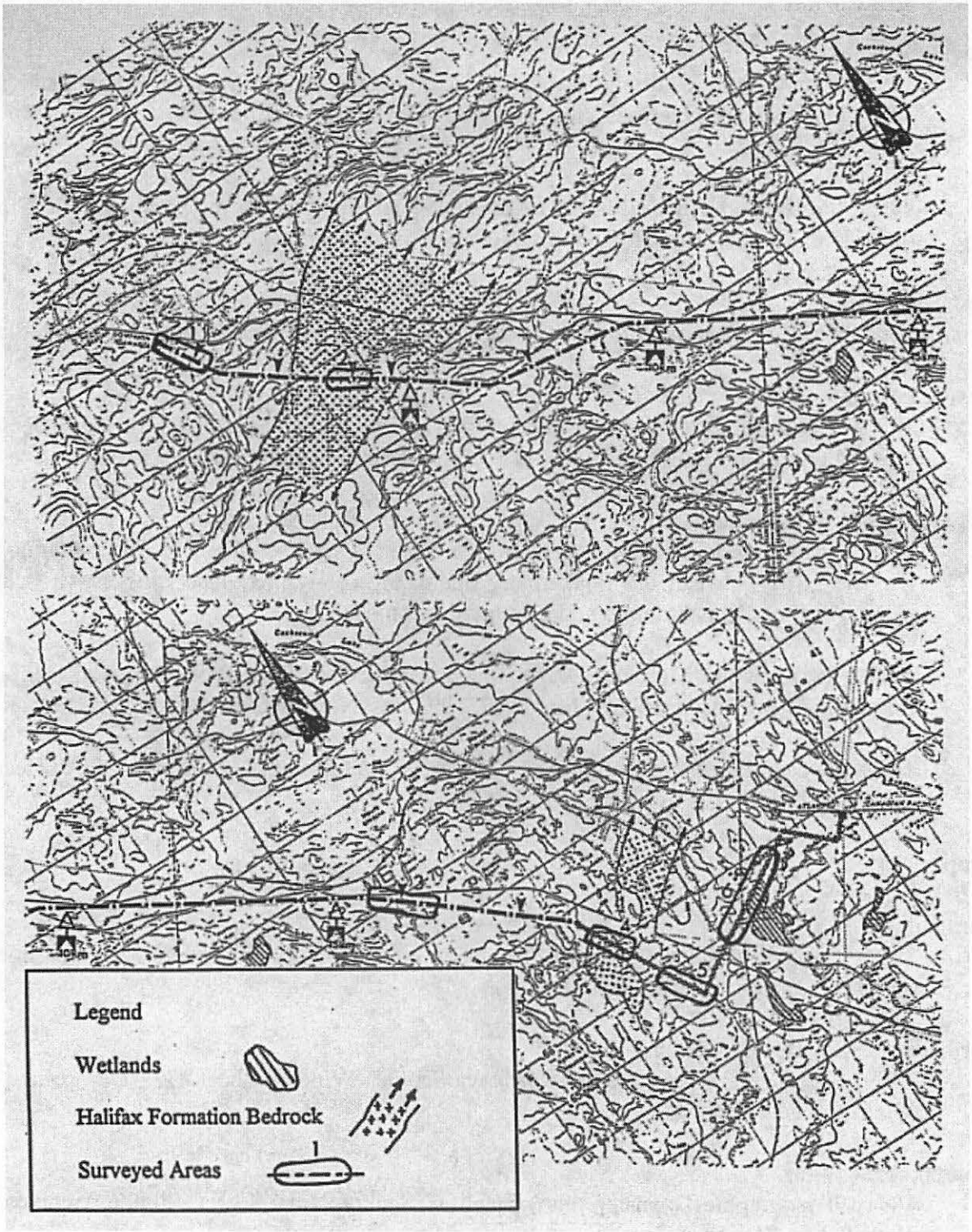


Figure: 1 Proposed Transmission Line From St. Croix to Brushy Hill

ENGLISHTOWN ARCHAEOLOGICAL IMPACT ASSESSMENT

Heritage Research Permit A1994NS10

By Dr. Stephen Davis
Davis Archaeological Consultants Limited

Introduction

Davis Archaeological Consultants Limited, of Halifax, was contracted by the Nova Scotia Department of Transportation and Communications (NSDT & C) to conduct an archaeological impact assessment at Englishtown, Victoria County, Cape Breton, Nova Scotia. The assessment was deemed necessary as the NSDT & C is actively investigating the replacement of the Englishtown ferry service with a permanent crossing. Furthermore, this area of the Province has been identified by Stewart as having "a wealth of rich historical and archaeological resources which have as yet to be fully identified and investigated." In his assessment, Stewart recommended "any further development in the area of the ferry terminal should be preceded by an archaeological assessment .... particularly important when planning the possible construction of a bridge." NSDT & C has recognized the potential for significant heritage resources within the proposed construction area and has initiated the present study as part of the early planning stages.

The objectives of the archaeological impact assessment were to satisfy the requirements under the Special Places Protection Act (1980), building on the findings and recommendations made by Bruce Stewart of the November 1990, Porter Dillon, Englishtown Washroom Siting Archaeological Resource Assessment report, and to determine if there were any cultural resources of interest or value in the area that would require special consideration with the construction of the proposed permanent crossing facilities.

In being awarded the contract, Davis Archaeological Consultants (DAC) proposed two sets of inquiry which would initially be conducted independent of one another then combined to assess the cultural significance of any discovered resources. The first level of inquiry was a preliminary historical background study. This was conducted by Mr. Peter Twohig, a bilingual professional historian, during the week of May 16th to the 20th. The second level of inquiry, conducted between the 24th to 28th of May, was an archaeological survey involving sub-surface testing throughout the study area. This effort was directed by Dr. Stephen A. Davis assisted by Mr. Laird Niven and Mr. Stephen Powell.

The organizational format of this report will follow the outline provided for Mitigation Report as found in Reporting Procedures [R.S., c.438, s.8(3)(c)] of the Nova Scotia Museum's, Draft Guidelines, Special Places Protection Act, Heritage Research Permit (Archaeology), March 27, 1992.

Study Area

The study area is to the northeast of Englishtown, in close proximity to the existing Provincial ferry operation. The plans provided by NSDT & C include the construction of two roadways, one is a

realignment of the Blackhead road with a 20 metre right-of-way. The second is a new approach road to the location of the proposed bridge and it is designed to have a 30 metre right-of-way. The terms of reference for the archaeological impact assessment defined the study area as being within the two right-of-ways.

Methodology

The project as defined by the "Terms of Reference" provided by the Nova Scotia Department of Transportation and Communications involved two types of research; historical document survey and an archaeological survey. Although within the discipline of historical archaeology, it is common for the principal investigators to conduct their own historic background study, this was not recommended for this project. Davis Archaeological Consultants approach was to employ the services of a bilingual, professional historian with a background in archaeology. The rational behind this approach was to provide NSDT & C with a comprehensive historical background study. This was deemed essential given that the anticipated heritage resources to be impacted represent a complex of features related to seventeenth and eighteenth French occupation of the study area.

Phase I: Historical Background Study

The following activities were conducted by the professional historian:

- reviewed files at Fortress Louisbourg;
- reviewed files at the Nova Scotia Museum and the Public Archives of Nova Scotia;conducted interviews with local and professional informants;
- reviewed relevant information from published and unpublished sources on local and regional history, cultural geography, and other pertinent disciplines;

The activities and sources listed provided the necessary background data to provide a detailed history of any buried heritage resources that may be located within the study area.

Results and Discussion: Historical Background Study

Englishtown, situated on St. Anne's Bay, has enjoyed a lengthy and storied period of settlement. A Historic Sites and Monuments Board plaque states that French Captain Charles Daniel of Dieppe settled the area in 1629. In his History of Victoria County, George G. Patterson notes that Daniel constructed a fort, which he garrisoned with forty men and outfitted with cannon, powder and muskets. The early seventeenth century also brought Jesuit missionaries to the area. Bartholomew Vimont accompanied Captain Daniel, and soon after Father Lallement and Father de Vieuxpoint were shipwrecked and escorted to the site, though the former left with Basque fishermen. One year later, the remaining Jesuits had left. After a brief absence, Father Antoine Daniel -- who would later become one of the Canadian martyrs -- and Father Devost reestablished the Jesuit presence in 1632. They would remain until 1633, followed in 1634 by Fathers Richard and Perrault and Father George d'Endeman in 1636. Father Pacifique, in a speech delivered at St. Anne's on August 25, 1930, when the Historic Sites and Monument Board unveiled the cairn and tablet, stated that the "Jesuit Mission at St. Anne's came to an end in 1641 ... though the place continued to be visited occasionally until 1660." Simon Denys followed the Jesuits, and established a farm and a fishery in the area. Patterson notes that in all likelihood he occupied the original fort, "and around it, we are told, he had several

fields under cultivation, in addition to a fine orchard of apple trees."

The area would not flourish again until the early eighteenth century, when the site attracted the interest of the French. Isle Royale, according to one recent interpretation "was slow to become securely established" though the French began to look toward its development. In 1713, Saint-Ovide de Brouillan commanded a party that explored the coasts of Isle Royale. This expedition chose Havre l'Anglois – later named Louisbourg -- as the best site for settlement.[4] Philippe Pastour de Costebelle, the former Governor of the colony of Plaisance and then of Isle Royale, however, did not believe Louisbourg was the best choice. On 27 September 1713, Costebelle communicated his decision that Ste. Anne was the best location to facilitate the enlargement of the fledgling colony, because of its secure location and proximity to the fishery.[5] Frederick Thorpe has written that had this decision been adhered to, the plan would have been relatively straightforward, calling for the construction of dwellings, storage areas, workshops and other such structures. Yet the period between 1713 and 1719 was one characterized by indecision, which saw the "capital" established at Louisbourg, then Port Dauphin (though Port Toulouse and Louisbourg were established as secondary settlements), before permanently returning to Louisbourg about 1719. As a result, structures were built at all of these sites, though throughout this period Port Dauphin would remain "the main concentration point for materials and supplies."[6]

There were real advantages to this area, and all accounts echo some common reasons for the decision in favour of Port Dauphin. These include a good supply of large timber and other materials for construction of dwellings and fortifications, and the fact that the site could be readily fortified. Charlevoix wrote "[t]hose who declared in its favor, added that it could be rendered impregnable at little expense, and that two thousand francs would go further there than two hundred thousand at English Harbour [Louisbourg]."[7] Another important consideration was its gravel beach suitable for drying fish.[8] By 1716 it was also recognized that the soil was "bon à cultiver," based on the settlement's success in cultivating wheat and vegetables. There were drawbacks, including the distance from the fisheries and, in time of war, the threat of a blockade on Baie Ste-Anne.[9] George Patterson wryly noted in 1885 that "all persons who had anything to do with the selection [of Port Dauphin over Louisbourg] seem to have, for the time being, forgotten that Louisbourg Harbour is never entirely frozen, while St. Anne's is covered with ice three or four months every winter; and would, consequently, for that period, be useless for commercial purposes."[10] J.S. McLennan, in his classic study of Louisbourg, suggested that serious consideration was not given to either Port Toulouse or Baie des Espagnols [Sydney Harbour].[11] In 1714, instructions reached Costebelle and the new Commissaire-Ordonnateur Soubras that Port Dauphin should be the principal settlement, and between 1715 and 1717 Port Dauphin was the seat of government on Isle Royale. It was decided that four companies should be sent there, though Louisbourg and Port Toulouse would continue to be manned.

Work began in earnest at Port Dauphin in 1715, and was to be supervised by Jean-Maurice-Josué de Boisberthelot de Beaucours. The finality of the decision is exemplified by correspondence from June 1715, which directed all finished wood to be transferred from Louisbourg to Port Dauphin.[12] Fifty men under the command of Jean-Baptiste Hertel De Rouville[13] conducted the work. They made boards, planks, bark and shingles for an 80 foot storehouse, and a bakery. Masons worked on the ovens. The buildings were "pièce sur pièce," and were estimated to last from 40 to 50 years. The wood was to be covered with bark, which would then be overlaid with shingles.[14] Interestingly, it

was also noted that "les soldats ont défriché." Apparently, the soldiers were engaged in some land reclamation. A redoubt had been built of earthwork and timber. By September 1715, Costebelle could report that the store, forge and bakery were completed, and that the construction of the barracks was underway.[15] But all was not well, for "Costebelle had hoped to have the barracks at Port Dauphin finished by the winter, but in the late autumn Sourbas found that for three months, little work had been done, as the soldiers, even under de Rouville, the most capable of all the officers, had been building themselves huts in the woods."[16] Beaucours arrived in the autumn of 1715, and found that "little was accomplished beyond a second barrack building ... a house for the engineer, and various fireplaces and chimneys for officers' houses."[17] Correspondence from October 1715 seems to indicate that the barracks were completed, perhaps measuring 200 by 25 feet. Part of this large structure was intended to serve as a hospital, with officers to be lodged at either end of the building.[18]

There are a large number of maps and plans of Port Dauphin that show a wide range of features, the earliest of which is a plan of finished buildings dating from 1715. This plan clearly shows the bakery, complete with a double oven, a large storehouse, a forge and a plaster furnace (Plan 715-2/Figure 1). The plan shows no other structures, though another detailed plan of a "Redoute pour l'entrée du goulet du Port Dauphin" exists (Plan 715-4). Another plan from 1715 shows a proposal for the completed fort. This shows all of the structures outlined above, and situates the position of the features relative to the gravel bar and the pond. The plan also indicates the proposed walls, which would encompass all of the structures except the plaster furnace (Plan 715-1). Two later maps illustrate substantially different proposals. Jean-Francois de Verville[19] arrived at Port Dauphin in the summer of 1716, and proposed extensive fortifications which are represented on the first plan entitled a "Plan of Port Dauphin and of its surroundings with some planned fortifications." It shows a far more extensive Vauban fortress, and a redoubt on the gravel bar (716-3). Verville was not advocating such elaborate works, however, but rather preparing plans in keeping with current colonial policy. Verville actually proposed much lesser fortifications for Port Dauphin in the event that his own recommendation -- that Louisbourg be made the capital -- was accepted.[20] A more detailed plan of the proposed Vauban fort and environs was drawn up in 1717. This plan illustrates a substantial fort, complete with cannon locations. A number of features are shown within the fort, but are left unidentified. Designed by Verville, the fortifications were composed of one bastion and two demi-bastions.[21] According to the map, a redoubt was proposed for the gravel bar and in addition to this one, a second "Redoute Bastionée" was shown to the south of the main fortifications. A large number of other structures are shown, the vast majority of which are located to the southwest of the fortifications.

Interestingly, there are two structures shown on the shore of the salt water pond. While these are not identified, they were in all likelihood, intended for the fishery.

It is important to note that all of the aforementioned visual resources with the exception of Plan 715-2 (Figure 1) -- the plan showing the forge, storehouse, plaster furnace and bakery -- are proposals. One of the key maps of the area however, may be an undated map entitled "Plan de l'Entrée du Port Dauphin avec les habitations" (ND-81/Figure 2). This plan shows no elaborate fortifications, but it does clearly show a forge, a barracks and a foundry. In addition, two very large garden plots are illustrated, with four buildings in close proximity to them. These are labelled "gouvernment." North of these garden plots, and in close proximity to the pond was a third, smaller garden plot. Neither the large storehouse nor the bakery -- which are labelled on the 1715 plan -- are identified, though

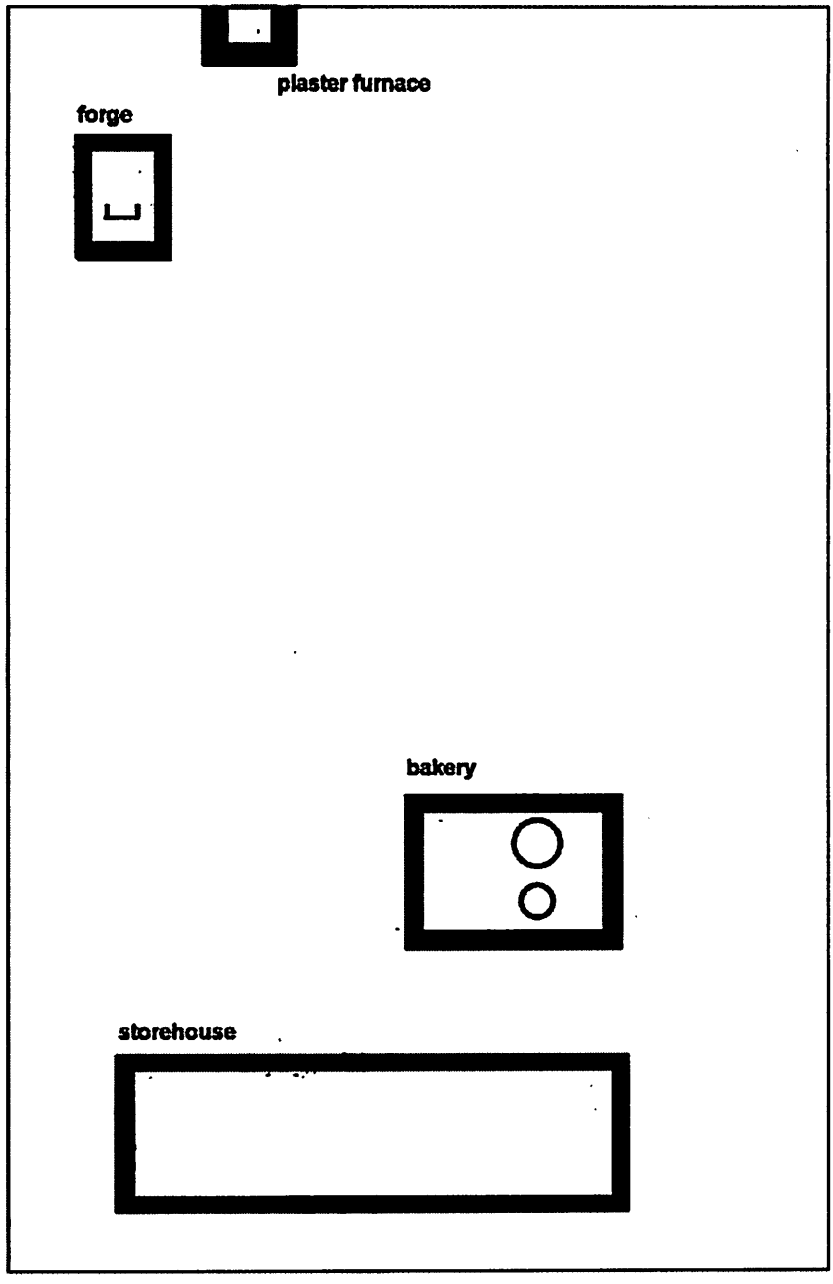


Figure 1 - Revised plan based on: Plan of finished buildings [Batimens], and works Securely at the Port Dauphin on Isle Royale in 1715. (715-2)

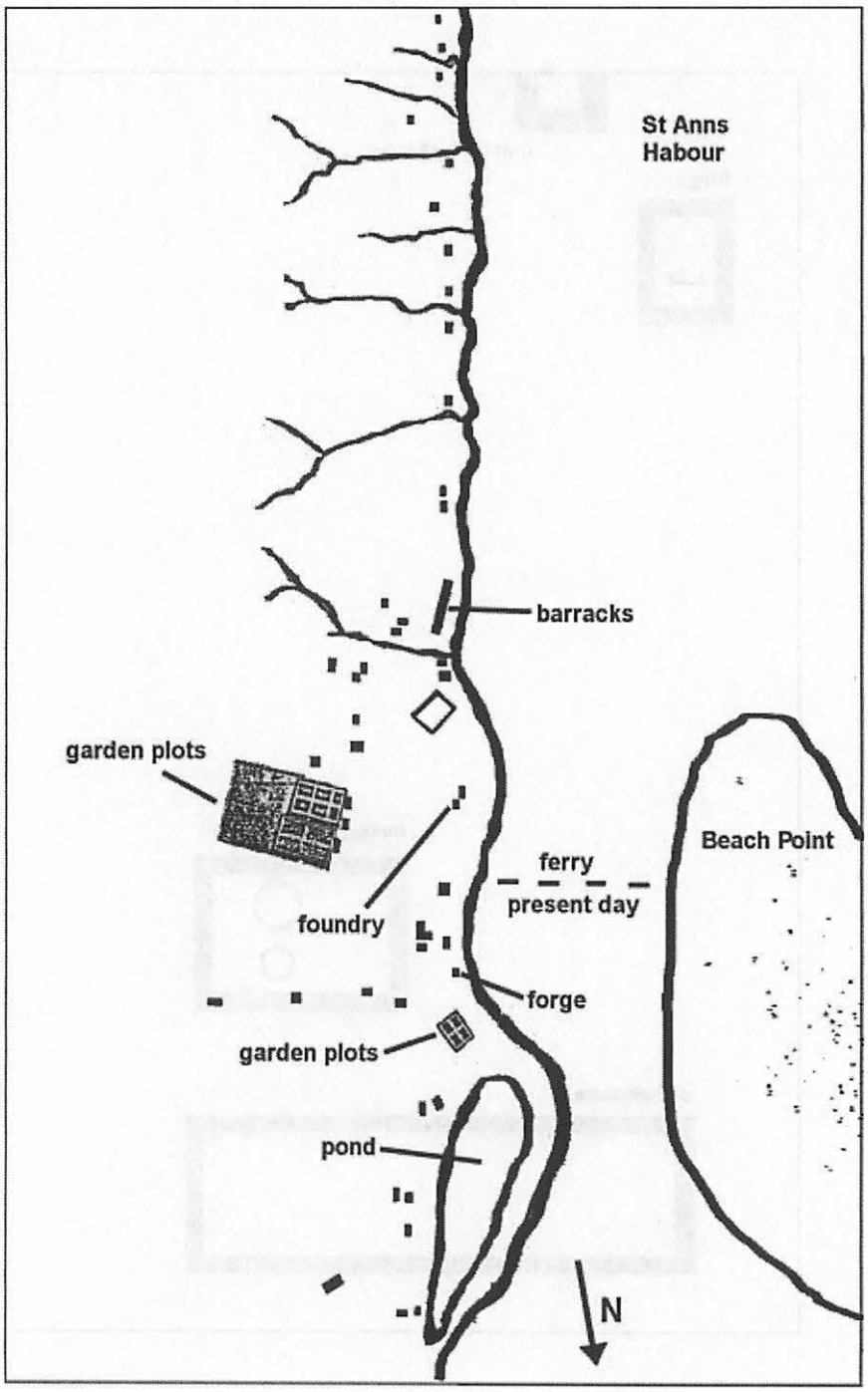


Figure 2 - Revised plan based on: Plan of the Entrance of Port Dauphin with the dwellings (ND81).

structures approximating their size and relationship to other features are shown. In addition to these structures there are no less than forty-one other structures illustrated. Most of these are located to the south-west of the identifiable features, and some were probably the "terrains" granted to the officers near the fort at Port Dauphin.[22] Many are situated along the shoreline, though there is another significant concentration of structures to the west of the large garden plots. There is a third concentration of structures (seven in total) around the pond, with two additional features in close proximity to the smaller garden plot. A lone structure is located to the east of the pond, and finally, four extending inland from the shore in a south-easterly direction, approximately half-way between the pond and the large garden plots. These many structures are, in all likelihood, dwellings and related features (storage sheds, etc.) of the fishers and farmers, though some may be the "huts" constructed by soldiers referred to by McLennan.[23] There is evidence that the original buildings were in such a state of disrepair by 1740 that the soldiers had to board with local residents.[24]

The question that needs to be answered is whether or not the map is an authentic representation of the area. It should receive serious consideration because of its accurate depiction of known structures (known both through the 1715 map and documentary sources). While the numerous structures have not been identified through the historic record, a more thorough investigation may yield further evidence. Two other visual resources are considered to be authentic depictions of Port Dauphin. Map 733-14, dating from 1733, shows no important fortifications. A map from 1757 (757-3) shows two structures with the notation "Log. des troupes," but again does not show any significant fortifications.[25]

While the vast majority of the structures were undoubtedly associated with either soldiers or fishers, there were other inhabitants present. Among the most significant were the Recollet priests. In 1716 the King granted the Recollets of the Province of Brittany permission to establish themselves at Port Dauphin and other areas of Isle Royale. In June 1716, arrangements were being made for their subsistence, but there were problems. The Recollets were to stay in the barracks, but officers of the garrison occupied the area set off for their use. As a result, the Recollet were relegated to a spacious house of an inhabitant. One year later, correspondence suggests that it was Recollets of the Province of Paris that were to minister to the troops and perform curial duties as deemed necessary at Port Toulouse and Port Dauphin. Between 1716 and 1730, Father Dominique La Marche was at Port Dauphin, and one secondary account states that La Marche built a small chapel measuring thirty-five feet long. La Marche was succeeded by Father Le Breton, a representative of the Order from the Province of Paris in 1734. The last known Recollet at Port Dauphin was Father Moisson,[26] who was there in 1753.[27] There are also documents confirming the presence of Le Sr La Grange, a surgeon and Antoine Vorin, an assistant surgeon.[28] Other occupations represented at Port Dauphin included artisans such as carpenters, sawyers, shingle-makers and stone-cutters.[29] Nevertheless, the population at Port Dauphin was small. A survey in 1716 showed Port Dauphin having only 50 residents and only two "pecheurs et domestiques," a surprisingly low number. The following year, a complete census found some 103 military, naval and administrative personnel at Port Dauphin and 93 other residents. In 1718, the civilian population of Port Dauphin numbered some 133, whereas that of Louisbourg was 633. A 1719 census revealed 154 persons (civilian and military) at Port Dauphin. It would appear that 133 was the peak civilian population of the area. After 1719, when the capital was moved to Louisbourg, Port Dauphin declined in significance. By 1741 only twenty-five of the 710 men stationed on Isle Royale could be found at the former capital.[30]

In 1718, the decision was made to move the capital back to Louisbourg. In 1719, the decline of Port Dauphin as the principal French settlement was symbolized by the mounting of six guns at Louisbourg in 1719. After six years of uncertainty, the "troops were brought together from the outports, with the exception of small detachments."[31] While Port Dauphin clearly declined after 1719, it was not abandoned entirely. A garrison was maintained in the area, and regular religious services were held. Interestingly, the old capital would play a role in the construction of the principal settlement at Louisbourg. The production of materials continued at Port Dauphin until at least the mid-1720s. Verville agreed to leave thirty soldiers and a variety of artisans at Port Dauphin, including stone cutters, sawyers and shingle-makers, seemingly confirming the appraisal of the site a decade earlier as one rich in building materials. In 1722, some 275 casks of stone and eighty casks of plaster were brought from this site to Louisbourg. The frigate Paon made a reconnaissance of Port Dauphin and Ports Toulouse for building materials in 1722, and in 1724 Verville identified a good stand of pine near the former that could be exploited.[32]

Recollet missionaries, as we have already seen, continued to be service the community, and it was undoubtedly frequented by fishermen and Micmac throughout the last half of the eighteenth century. In the closing decades of the century, settlers from the British Isles began settling in the area for the first time, in addition to at least one American, and one German family. However, Patterson noted that "[w]ith them [these settlers] fishing was the chief occupation, and little attention was given to farming." In 1820 a large number of settlers followed the unorthodox Presbyterian minister Rev. Norman MacLeod to St. Anne's, and in 1826 or 1827, they were joined by other settlers from Scotland. Patterson suggests that it was about this time that the name "Englishtown" appeared, not because the settlers were all English, but rather "that they could not talk Gaelic."[33]

A full account of the history of the Englishtown area would require a more complete treatment of the Port Dauphin settlement, the late eighteenth-century fishermen and the nineteenth century settlers beginning with Reverend MacLeod. But this overview is suggestive of a far richer historical saga, one that has received treatment only a nineteenth century county history, and a popular -- and somewhat romantic -- portrayal. Many themes characteristic of Nova Scotia's history find resonance here: imperial competition, conflict and war; the pursuit of the fishery and, to a lesser extent, a settler economy; the colonization by people from the British Isles; not to mention the presence of Catholic missionaries and a very likely, though largely unrecorded Micmac presence. A complex and significant history such as that of Englishtown may be in need of further work, and some reconsideration.

Phase II: Methodology Archaeological Survey

A three man team was employed to conduct the activities related to the overview reconnaissance and subsurface testing throughout the study area. The team began the project by contacting the Baddeck detachment of the Royal Canadian Mounted Police to inform them of our presence in the area. This was deemed necessary by the proponent in case questions were raised about the archaeological activities. Further contact was made with local residents and land owners to inform them of the project and seek permission to test on their respective properties. In all instances permission was granted and the presence of the team generated considerable interest.

The proposal submitted by DAC included an initial overview reconnaissance of the study area which

was to be defined by the installation of surveyors stakes through the centreline of the two roadways. Unfortunately, due to a number of difficulties the lines were not in place at the beginning of the project. However, remnants of a previous survey allowed the team a general knowledge of where the bridge approach road would be located. The team walked this area noting a number of surface anomalies which were thought to be cultural in origin. Of particular interest was a circular depression on a terrace above the ferry terminal. It was latter determined that this feature was outside of the study area and therefore was not investigated further.

Once the overview reconnaissance was completed the team scanned each of the anomalies with a metal detector. In every case positive results were encountered, however, the material recovered represented mid-nineteenth to twentieth century occupations. The most common being fragments of barb wire fencing, completed and fragmented barrel hoops, machine cut and wire nails, various pieces of farm machinery and one melted pot. The majority of the twentieth century readings were in close proximity to a feature which was identified as the remains of A. T. MacLean's barn. The second major concentration was centred around an as yet unidentified nineteenth century farmstead. The second day of the field project began with the arrival of the surveyor and his crew. In order to begin the testing it was decided to investigate a large mound adjacent to the ferry terminal ramp while the surveyors set the centreline for the realignment of the Blackhead road. The testing involved two formal vertical cuts on the north side and a formal one by one metre unit on the south side of the mound. The vertical cuts were sterile providing evidence that this side of the mound had been disturbed during the construction of the ferry ramp. The southern unit contained a thin cultural level and the remains of a small pit in the southeast corner of the unit. Unfortunately, no cultural materials were recovered to indicate the time of occupation of the level.

The NSDT & C surveyors managed to complete a portion of the Blackhead road realignment centreline when one of their members became ill and was taken to a doctor. The archaeological crew began to shovel test this line at twenty metre intervals. Within minutes a brecciated chalcedony flake of aboriginal manufacture was encountered. This totally unexpected discovery required a change in testing strategy. The area of the shovel test was converted into a formal one by one metre unit as were the other three units along the line. As work continued in these units it became readily apparent that this area contained complex archaeological remains which are discussed in the following section.

The surveyor was able to get a new crew and continue staking the realignment and the new approach road completing the work on the 26th of May. With the centreline staked the archaeological crew shifted to shovel testing the right-of-way for the approach road. In total seventy-seven units were dug along this line.

Results and Discussion: Archaeological Survey

As has been noted above the formal testing along the centreline of the proposed realignment of the Blackhead road produced complex results. The following discussion will review individual units in general supported by substantive data presented in the appendices at the end of this report.

Formal Test Unit One (FT 1)

This unit began as a shovel test, however, with the discovery of ceramic fragments and a brecciated chalcedony flake it was converted into a formal one by one metre unit. The unit was excavated by hand with artifactual material recorded by stratigraphic level. As with all formal units the northwest corner was used to control and record depths. The excavator kept detailed notes and a stratigraphic profile was drawn for the north wall of the unit. The results are summarized as follows:

Level 1 (0-6 cms.) - modern sod development

Level 2 (6-17 cms.) - loose sandy brown loam containing charcoal flecks, coal and possible clinkers. Artifacts included: coarse earthenware, tin-glazed earthenware, stoneware, 19th/20th C. refined earthenwares, window and bottle glass, bone fragments and a single brecciated chalcedony flake. This level is disturbed as a result of ploughing activities. It clearly reflects a complex of cultural activity in the area represented by an aboriginal component (flake), 18th C. component (Saintonge coarse earthenware and tin-glazed wares) and a 19th/20th C. component (refined earthenwares).

Level 3 (17-25 cms.) - sandy brown loam which is more compacted then level 2 with greater quantities of charcoal and gravel. Artifacts include: coarse earthenware (Saintonge), tin-glazed earthenware, blue/green 18th C. seed bubbled French bottle glass, stoneware, clay pipe stem, window glass, bone fragments and a gunspall. Although this level appeared undisturbed and contains only 18th C. artifacts it is situated on a disturbed level (see 4 below). It is very difficult to interpret stratigraphic events while working in a one by one unit, however, this level probably represents post 18th C. redeposition.

Level 4 (25 - 44 cms.) - reddish/brown sandy soil containing gravel and charcoal flecks. The soil colour changes to light brown at 34cms but the texture remains consistent throughout. Artifacts include: Saintonge coarseware, tin-glazed earthenware, Rhenish stoneware, French (?) stoneware, Chinese export porcelain, bottle and window glass, clay pipe fragments, 19th/20th C. refined earthenware, a second brecciated chalcedony flake and a hammerstone of aboriginal origin. The presence of an aboriginal component and the refined earthenwares indicates that at least a portion of this level was disturbed. It also indicates that level 3 must have been redeposited.

Level 5 (44-60 cms) - rich brown soil containing charcoal. Artifacts include: Saintonge coarseware, tin-glazed earthenware, Chinese export porcelain, clay pipe fragments, window and bottle glass, 18th C. French stemware and European flint fragments. The sizes of the ceramic pieces increased dramatically in this level suggesting primary deposition in an undisturbed context.

Level 6 (61 cm) - this was a thin grey sandy clay lense which intrudes into the southwest corner of FT1 covering an area approximately 25 by 25 centimetres. A single piece of Rhenish stoneware was associated with this level.

Level 7 (54 cm) - this level was not immediately apparent during the excavation thus the discrepancy between level number and depth. As with level 6 this is a minor lense which intrudes between levels 5 and 6 appearing in the northeast corner of the unit. It is characterized as a compacted red clay with sandstone and chunks of charcoal. A single sherd of 18th C. French Saintonge coarseware was

associated with this lense.

Level 8 (77 cm) - mottled brown clay sub-soil without any cultural associations.

As noted in the discussion of level 3, it is extremely difficult to interpret cultural events from a one by one test unit. This is particularly true when the major stratigraphic sequence is interrupted by minor lensing (levels 6 & 7). However, a number of conclusions can be reached from the data as presented.

1) FT1 produced evidence showing that in this portion of the study area extremely rich and varied cultural activities took place.

2) The artifactual content points to temporal and ethnic diversity for these activities namely; an aboriginal component of unknown age, undisturbed 18th C. French occupation (Levels 5, 6 and 7) and possible late 18th and early 19th century deposits (parts of level 4).

3) Given the extensive 20th C. use of the property the earlier deposits are in relatively stable context.

Prior to leaving this unit is should be noted that soil samples were collected from all levels with the exception of the sod development. these were laboratory tested for phosphate content which can be used as a measure of intensity of human activity. On a scale of 0 (no phosphates) to 5 (highest) the samples produced the following results: Level 2-1, Level 3-1, Level 4-2, Level 5-5, Level 6-3, Level 7-2 and Level 8-1. Although this is an extremely small sample it does support the evidence for a primary, undisturbed context for Level 5.

Formal Test Unit Two (FT 2)

This unit was initially planned as a shovel test, however, as with FT1 it was converted into a formal unit. It was excavated by hand using the stratigraphic levels to control artifact distribution. The excavator kept level records and recorded the north wall profile.

Level 1 (0-5 cms.) - modern sod development.

Level 2 (5 - 12 cms) - layer of dark brown/grey soil on top of a lense of loose coarse gravel. This level is interpreted as a former 'A' horizon mixed by ploughing activities. The gravel lense represents the depth of ploughing. Interestingly no artifacts were found within this level.

Level 3 (12 - 23 cms) - dark brown sandy loam containing charcoal and light gravel. Artifacts include: Saintonge coarseware, Tin-glazed earthenware (one example of French Rouen Faience), Chinese (?) export porcelain, 18th C. window glass, French 18th C. blue/green seed bubbled bottle glass, clay pipe fragments and a gunspall. The upper portion of this level was disturbed by ploughing.

Level 4 (23 - 28 cms) - compacted reddish brown to dark reddish brown sterile sub-soil ('C' - horizon).

Formal Test Unit Three (FT3)

This unit was excavated by hand using stratigraphic levels to control artifact distribution. It had to be discontinued as evidence for a complex feature was revealed beginning in level 3.

Level 1 (0-6 cms.) - modern sod development with roots containing brick fragments.

Level 2 (6 - 12 cms) - dark brown soil containing hundreds of brick fragments and chunks of charcoal. Artifacts included hand wrought nails in extremely poor condition which were judged in the field of being beyond conservation.

Level 3 (12 - ?) - dark brown sandy loam containing small brick fragments, large chunks of charcoal and gravel. As noted above this level could not be completed as a burnt timber, containing hand wrought spikes and associated with large brick fragments was encountered. This evidence strongly suggested the presence of a complex feature whose excavation went beyond the mandate of the project. Unfortunately, because the feature was at the interface of the plough zone and undisturbed soils it could not be given a temporal association. The artifacts above the feature included both 18th and 19th century specimens indicative of disturbance through ploughing activities.
The feature was drawn in plan view, photographed, covered in perforated plastic and reburied.

Formal Test Unit Four (FT4)

This unit was situated on the slope leading towards the ferry ramp. It was excavated by hand, however, it was readily apparent that it had been extensively disturbed.

Level 1 (0-7 cms) - modern sod development.

Level 2 (7 - 16 cms) - mottled soils containing gravel and fractured chunks of granite. Artifacts included: window and bottle glass, tin-glazed earthenware and badly corroded nails (not collected).

Level 3 (16 cms - ?) - compacted reddish brown sterile sub-soil with large chunks of fractured granite.

Formal Test Unit Five (FT5)

This unit was situated on the south side of a pronounced mound adjacent to the ramp for the ferry. Local informants, Roger and Nelson Edge, had stated that to the best of their knowledge this portion of the Mound had never been disturbed. Furthermore, it had originally extended across the Blackhead road connecting with a remnant still visible on the edge of the McAskill cemetery. Apparently most of the mound had been removed sometime early in the twentieth century to level the Blackhead road. The removal was done by members of the community using picks and shovels and carting the fill away. Given the local interest in the history of Englishtown if anything of consequence had been found stories would have persisted. However, other than a report of a iron axe (sword?) having been found during ditching of the Blackhead Road no such stories were reported.

Level 1 (0-11 cms) - modern sod development.

Level 2 (11 - 25 cms) - 'B' horizon, brown Sandy soil with extensive weathered and fractured granite rocks.

Level 3 (25 - ?) - 'C' horizon, reddish brown sterile sub-soil with large weathered and fractured granite rocks.

It should be noted that although no artifacts were found in this unit flecks of charcoal were noted between the sod development and top of the 'B' horizon. This could represent brush clearing as a deliberate cultural activity or possible evidence for a natural fire. The former conclusion is felt more likely as a pit feature was located in the southeast corner of the unit. It truncated the 'B' horizon extending to the top of the 'C' horizon. Although it extended beyond the limits of the unit it appeared to be basin shaped in profile. The bottom was defined by the presence of a thin layer of charcoal and grease staining.

Formal Test Units Six and Seven (FT6 & FT7)

Units six and seven were located on the north side of the mound adjacent to the ferry ramp. These units were vertical cuts designed to provide deep profiles for recording the stratigraphy of the mound. Both units were consistent in their soil matrix, being comprised of a thick sod (15 cms) and a deep mottled 'B' horizon containing fractured granite rocks (15 - 60 cms). It was clear from the matrix that both had been recently disturbed in all likelihood during the 1976 construction of the ferry ramp.

Formal Test Unit Eight (FT8)

Test unit eight was placed on the centreline for the proposed bridge approach road adjacent to the Urquhart cottage. The unit was positioned to investigate the degree of disturbance related to the nineteenth century occupation of the Bingham property and the twentieth century occupation of the Urquhart cottage.

Level 1 (0-10 cms) - modern sod development

Level 2 (10 - 20 cms) - dark greyish brown sandy loam with charcoal flecks, gravel and beach pebbles. Artifacts included: nondignostic nails (badly corroded).

Level 3 (20 -30 cms) - sterile 'B' horizon on top of sterile 'C' horizon.

Shovel Tests One to seventy-seven (ST1 to ST77)

Shovel testing began along the centreline of the proposed bridge approach road east of the Blackhead road. Depending upon the nature of the 'B' horizon subsequent excavation was either with the shovel or a mason's trowel. Sterile and plough zone soils were removed with the shovel whereas cultural soils were dug with the trowel. Whenever artifactual materials were encountered they were placed on top of the sod for later recording. With the completion of the shovel tests all units were recorded,

backfilled and a surveyors stake with the unit number was placed in the middle of the unit. In order to identify the shovel test stake from centreline stakes and feature stakes bright pink surveyors tape was tied to each unit stake.

In a number of instances a cultural level was identified either by soil type or the presence of nondiagnostic artifacts (unidentifiable iron objects), thus the period was designated as unknown. A second type of cultural activity which was prevalent in the study area was evidence for ploughing. Interestingly, the plough zone throughout the entire study area was relatively shallow seldom exceeding 20 cm below surface. This is indicative of a horse drawn plough rather than the deeper disturbance generally associated with mechanical ploughing. This conclusion was supported by Roger Edge who stated that the field adjacent to his property was never ploughed with the aid of a tractor.

Test units ST4, ST5 and ST6 were located between the Urquhart Cottage and Blackhead road within the bridge approach corridor. All three of these units contained undisturbed 18th C. components. The material recovered, with the exception of a grenade fragment (ST4), is indicative of domestic activities. Given the types and quantity of material it is highly suggestive that a 18th C. structure is located in close proximity to these test units.

Shovel test 19 began as a 40 x 40 unit which was increased in size in order to recover diagnostic artifacts. The stratigraphy of this test was unusual, in that, a rich black cultural deposit was encountered immediately under the modern sod development. The black soils continued to a depth of 22cm below surface at which point a burnt timber was encountered. Although the unit was expanded the timber continued and it was decided not to finish the unit in order to maintain the cultural integrity of the feature. The artifacts associated with the feature include; bottle glass (French?), Saintonge coarseware and a large quantity of hand wrought nails. On the basis of field observation the condition of the iron from this unit is far superior than that recovered from the formal test units. This may be a result of higher concentrations of charcoal in the unit which would aid in neutralizing soil acids.

The level terrace on which the test unit is situated has an east to west dimension of 14 metres, the long axis runs north to south and measures 39 metres. The southern edge of the terrace contains a small spring which keeps the eastern and southern boundaries of the terrace wet. This could be a major factor in leading towards preservation of buried organic materials on the site. Another aspect of this area is that other shovel tests on the terrace indicate disturbance by ploughing. Collectively the evidence strongly suggests the presence of an undisturbed 18th C. feature on this terrace.

Shovel tests ST35, ST36 and ST37 are all associated with visible surface features. During the initial reconnaissance this area recorded high concentrations of metal detector readings. The area is characterized by a 'L' shaped concentration of field stones, a circular pile of field stones and a depression which measures approximately 6 x 6 metres. Artifacts from the test units were recorded but not collected, they included a variety of mid to late 19th C. ceramics; partially vitrified earthenwares, blue banded ware, refined yellow ware, refined light green hand painted wares with a floral decoration and shell edge vitrified earthenwares. Other items included clay pipe stems, glass and numerous hand wrought iron nails.

The surface features and their associated artifacts strongly suggest the presence of a mid to late nineteenth century feature at this location. Interestingly, the historic documents reviewed and local informants were not able to identify the occupants of the feature.

Shovel test 56 warrants a note for its unusual stratigraphy. It's profile showed similar characteristics to the shovel tests in close proximity, that is, a relatively thick sod level (0-8 cms) and a distinct plough zone (8 - 18 cms). The difference was a very distinct burn level between the plough zone and the sterile soil (18 - 22 cms). Although no cultural material was recovered from this unit or those in close association the burning is intriguing. As has been mentioned in the Historical Background Study, a map numbered ND-81 (Figure 2), shows considerable early eighteenth century activity on this upper terrace, notably a large garden plot labelled "government" with associated buildings. Given that the burn layer is below what is assumed to be a nineteenth plough zone it may be an indication of earlier activity that requires additional testing.

Conclusions

The 1994 Englishtown Archaeological Impact Assessment has confirmed Stewart's statement this area contains "a wealth of rich historical and archaeological resources." Within the realignment proposed for the Blackhead Road, formal test units FT1, FT2 and FT3 contained substantial evidence for undisturbed eighteenth century deposits. Furthermore, FT1 contained three artifacts related to an aboriginal component which needs to be further investigated. The depth of the cultural deposits in FT1 and its close proximity to the Blackhead Road suggests that a high potential exists for undisturbed eighteenth century material under the existing road. The unit labelled FT3 could not be completed due to the presence of a complex feature. This unit contained hundreds of brick fragments and a burnt timber containing hand wrought nails and spikes. The presence of eighteenth century ceramics in association with the feature suggests an early date for the structural elements. Shovel tests east of the Urquhart cottage revealed undisturbed eighteenth century deposits. With the exception of a grenade fragment the artifacts reflect domestic activities. Thus, although no structural elements were found the artifacts suggest the presence of a house somewhere close to these test units.

Shovel test nineteen (ST19) produced a thick undisturbed deposit containing eighteenth century artifacts. This unit could not be completed as it contained evidence of a burnt structure. The small terrace on which this evidence appears may contain the most culturally significant resource site discovered during the assessment. The preliminary tests strongly suggest the presence of an undisturbed structure with the possibility of exceptional artifact preservation. The quality of the iron artifacts recovered was superior to other areas tested and the presence of a spring on the terrace could mean excellent opportunity to recover organic specimens.

Shovel tests twenty-nine to forty-four (ST29 - ST44) produced artifacts or soil profiles related to a nineteenth century occupation. Units ST35, ST36 and ST37 were associated with a surface feature believed to be a mid-nineteenth century structure. The historical background study and interviews with local informants failed to identify the occupants of this area.

The project historian was able to locate numerous documents and maps showing a variety of plans for the eighteenth century occupation of the study area. In consultation with historians based at

Fortress Louisbourg it was agreed that most of the plans were proposals rather than actual layouts of the fort and associated structures. However, there was general agreement that the plan labelled as ND-81 may be an accurate representation of eighteenth century layout of the community at Port Dauphin (Figure 2). This plan shows numerous structures located in close proximity to the proposed route of the bridge approach road. With the exception of ST19, no other eighteenth century artifacts were encountered within the ROW of the approach road, however, this must be considered as a restricted sampling strategy. If the historians are correct that ND-81 is accurate then additional eighteenth century material should be situated in the general area of the proposed approach road. Although not a part of the contract, at the request of the NSDT & C steering committee, the consultant conducted a surface reconnaissance of the proposed route on Beach Point. This was completed on the 27th of May when the tide was at its lowest. The only cultural evidence encountered was a former road bed with an associated stone wall. These were not judged to be culturally significant.

ENDNOTES

[1] George G. Patterson, "History of Victoria County," unpublished manuscript, 1885.

[2] Rev. Father R.P. Pacifique, "The Early History of St. Anne's Cape Breton." The Cape Breton Historical Society, Vol. 1, No. 1 (1932). Father Pacifique's address can also be found in The Casket, September 25, 1930.

[3] Patterson, p. 36 and Pacifique, p.p. 36-37. Patterson identifies Denys as Nicholas, not Simon, but there is little doubt that it was Simon Denys who established the farm at St. Anne's. For a discussion of this, see Nicholas Denys, Description of North America of the Coasts of North America (Acadia), New York: Greenwood Press, 1968, p. 183, f.n. 2. W.F. Ganong, the editor, notes further that "we have no direct evidence as to the site of this [Daniel's] establishment."

[4] John G. Reid, "1686-1720: Imperial Intrusions" in Phillip A. Buckner and John G. Reid, eds., The Atlantic Region to Confederation: A History. Toronto: University of Toronto Press, 1994, p. 96.

[5] AC C11C, 7: 293-69. Costebelle to the Minister 20 novembre 1713. AC C11C, 7: 228-230v. Costebelle to Pontchartrain 27 septembre 1713.

[6] Frederick John Thorpe, The Politics of French Public Construction in the Islands of the Gulf of St. Lawrence, 1695-1758. Ph.D. thesis, University of Ottawa, 1973.

[7] Pierre-François Xavier de Charlevoix, History and General Description of New France. New York: J.G. Shea, 1866 [1744]., p. 295.

[8]Richard Brown, A History of the Island of Cape Breton. London: Sampson Low, Son, and Marston, 1869, p. 147.

[9] For the advantages, see AC C11B, Vol. 1, fol. 12-16v [1714]; AC, F3 Vol. 50-51, fol. 36-42v [1716]; For disadvantages see AFO/DFC/134, decembre 1716; AC C11B (Vol. 2), fol. 21-27, 26 fevrier 1717.

[10] Patterson, p.p. 44-45.

[11] J.S. McLennan, Louisbourg From Its Foundation To Its Fall 1713-1758. London: MacMillan and Co., 1918, p. 33.

[12] AC B, Vol. 37-3, p.p. 783-786, fol. 207-209v, 17 mars 1715 and AC B, Vol. 37-3, p.p. 828-852), fol. 226, 4 juin 1715.

[13] Rouville's biography can be found in the Dictionary of Canadian Biography, Vol. 2.

[14] The description of the buildings is contained in AC C11B, Vol. 1, fol. 123-133v, 9 septembre 1715. It reads:

> "Ces bâtiments sont faits de pièces sur pièces ce sont des poutrelles qu'on met les unes sur les autres, et qui son en coulisse dans d'autres pieux de bois debout qu'on met de 10 pieds en 10 pieds, ces sortes de bâtiments durent 40 à 50 ans. Ces bâtiments sont couverts d'écorce, il sera nécessaire de les couvrir par la suite de bardeaux."

[15] AC C11B, Vol. 1, fol. 223, 26 août 1715; AC C11B, Vol. 1, fol. 123-133v, 9 septembre 1715. See also Thorpe, p.p. 25-26.

[16] McLennan, p. 38.

[17] Thorpe, p.p. 25-26.

[18] AC C11B, Vol. 1, fol. 227v, 25 octobre 1715.

[19] For a biography of Verville, see Dictionary of Canadian Biography, Vol. 2.

[20] Thorpe, p. 27, and McLennan, p. 50.

[21] Thorpe, p. 29. Verville was forewarned that "Le Conseil fera observer au Sr. de Verville au sujet de ses fortifications qu'il ne convient point par raport aux grandes depenses que cela cause, de fortifier aussi en grand dans les colonies que l'on fait on Europe." In English, Verville was warned that "it is not acceptable to fortify the colonies to the same extent as in Europe because of the great cost." See AN Col. F3, Vol. 51, p.p. 2-9.

[22] AN Sec Marine, Art 54, p. 62, n.d.

[23] There was an apparent attempt to regulate the construction of dwellings on Isle Royale. Houses, fences and trees would have to be at least 350 toises (2100 feet) from the fortifications at Port Dauphin, as well as Louisbourg and Port Toulouse. Exceptions included those areas bordering the sea and utilized by fishermen, thus making it difficult to determine whether or not the policy was

implemented at Port Dauphin. See AN Sec Marine, Art 54, p. 60(b).

[24]AC C11B, Vol. 22, f. 237 [1740].

[25] Eric Krause in correspondence dating from 1974, suggested that Plans 715-1, 716-3, 717-4a and, most importantly ND-81 were all proposals. He considered both 733-14 and 757-3 to be authentic. In a personal communication, he suggested that ND-81 should be reconsidered.

[26] This individual is identified as Father Moisson by James Lamb, but Pacifique identifies him as Father Julian.

[27] AC, C11B, v39-3, p. 609, 5 juin 1717 and AC, C11C, 15: 69. Costebelle au Conseil, 22 decembre 1716. See AC, C11C, v16, p. 6, 1717 Minister to Costebelle and Sourbas and Bona Arsenault, Louisbourg 1713-1758. Quebec: Le Conseil de la vie française en Amérique, 1971, p. 64, for the change in the origin of the Recollet. For the names and dates of the Recollet priests, as well as the construction of the chapel (which was not identified on any map), see James B. Lamb, The Hidden Heritage: Buried Romance at St. Ann's N.S. Windsor: Lancelot Press, 1975, p. 26.

[28] AC C11C, v15: 90; AC C11C, v15: 103, 13 avril 1717.

[29] AC, C11C, 15: 177. Verville, 24 mars 1721.

[30] These figures have been drawn from Historic Sites and Monuments Board of Canada Staff Report, Agenda Paper 1961-36 (May 1961). "Port Dauphin Site, Englishtown, Cape Breton." There is a good deal of potential that some of the residents could be identified by name and, in some cases, occupation. Fortress historians have been compiling lists of names from documents for the Port Dauphin area. Eric Krause, personal communication.

[31] McLennan, p. 59.

[32] AC C11C, 15: 177, Verville, 24 mars 1721; AC C11C, 15: 231, Conteneuil, 21 septembre 1722; C11C, 16, ft. 10-15, 1722 À St. Ovide et De Mazy; AC C11C, 16, ft. 20, 1724 The Minister to St. Ovide and De Mazy.

[33] W. James MacDonald, Patterson's History of Victoria County. Sydney: College of Cape Breton Press, 1978, p. 50, 78. See also Lamb, The Hidden Heritage, p.p. 39, 40.

Historical Background Plans and Maps

1744-6
Plan of Port Dauphin and of its Roadstead with the Entrance of Labrador [the Bras D'or].

733-14
Plan of Port Dauphin and of the Bay St. Anne on Isle Royale.

717-40
Plan of Port Dauphin and its Vicinities with the plans fortification Colour in Yellow. Scale of 1600 Toises.

ND-81
Plan of the Entrance of Port Dauphin with the dwellings.

757-3
Map of Isle Royale for favour??[fervie] of the knowledge of the Memoire of Mr. Poilly Engineer Ord. of the King.

1717-5
Plan of Project of The Fortification of Port Dauphin, Relative to the Profile and Development.

715-1
A- Place for the Fort. B- Narrows C- Gravel [Graue] D- Pond E- Unsure as to meaning

Plans that will serve only to judge the situation of a lot

Proposal of Fort Dolphin in 1715 1. Store house 2. Bakery with two Ovens 3. Forge 4. Plaster Furnace [plastre] 5. Stall?? [If the word is caler]

716-3
Plan of Port Dauphin and of its surroundings with some plans Fortifications. All that is coloured Yellow are those who has yet to be laid out [ete] [leue] [geometriquement] with the probes.

715-2
Plan of finished buildings [Batimens], and works Securely at the Port Dauphin on Isle Royale in 1715.

715-4
A. Position of Weapon B. Magazine has gunpowder [voute] C. Lodging D. small gallery E. pit behind [derriere] which are place some little mortars. Redoubt for the narrows/narrow entry [entree] [goulet] to Port Dauphin.

ARCHAEOLOGICAL RECONNAISSANCE STUDY: RIVER TILLARD

Heritage Research Permit A1994NS13

By Dr. Stephen A. Davis
Davis Archaeological Consultants Limited

Introduction

Davis Archaeological Consultants Limited of Halifax, was contracted by the Nova Scotia Department of Transportation and Communications to conduct a Category A: Archaeological Reconnaissance of the proposed crossing of River Tillard (Figure: 1). The work involved a two phased approach; a historical background study followed by a field reconnaissance. The background study was conducted by Mr. Stephen Powell who reviewed documents and maps at the Nova Scotia Public Archives and the files of the Nova Scotia Museum. Additional resources were checked by Dr. Stephen A. Davis at the Nicolas Deny's Museum and the Canadian Parks Services Administration offices at St. Peter's. The field reconnaissance was undertaken by Davis on June 16th and 17th.

Study Area

The archaeological reconnaissance was deemed necessary as the NSDT & C recognized the rich archaeological resources within close proximity of the River Tillard study area. St. Peter's, Richmond County, Cape Breton contains resources dating to the first half of the seventeenth century ranging from Nicolas Deny's trading post, the Acadian village of Port Toulouse, fortifications, the Lawrence Kavanagh mansion and the St. Peter's Canal (Wallace 1985). These archaeological resources are all located within a relatively small area within Battery Provincial Park or on adjacent property under administration of the Canadian Parks Service.

The study area is approximately five kilometres west of the main concentration of heritage resources. It consists of a new approach road leaving highway 104 travelling east for one kilometre to River Tillard. A new bridge is proposed for the crossing which will be approximately 25 metres downstream from the existing bridge (Figure: 1).

Methodology

The background study included a review of historic maps and documents at the N.S. public archives, N.S. Museum and the Nicolas Deny's museum. These sources did not reveal any significant resources within the study area. A. F. Church's map (1883-87) shows a number of residential homes and a school northeast of the study area. However, they are not within the proposed impact area.

The archaeological field reconnaissance was undertaken on June 16th and 17th under ideal conditions. The study area was well defined, in that, the approach road and the location of the new bridge were marked by survey stakes. Furthermore, the highest potential area on the river had a number of activities which had exposed subsurface soils. The river banks have been eroded, a

drilling rig was active during the reconnaissance and past construction activities have all contributed to exposing soils. These exposed soils were checked with negative results, the only cultural events noted throughout the study area are all relatively modern events. They include a pile of rocks associated with field clearing and a dug well on the approach road. The field clearing rock pile had tin cans, broken glass and ceramic fragments all dated to this century. The well was a source of water for the small farm on this property. In the course of the reconnaissance the occupants of the farm, Jimmy and Cleavis Wedge were interviewed. They indicated that the farm had been built in 1916 and that it was the first structure on the property. They did not have any knowledge of heritage resources within the study area.

The only other cultural feature noted was on the east bank of the river. It consisted of an earth and rock alignment running parallel to the river. Jimmy Wedge, who worked on the construction crew which built the existing bridge in 1980, reported that this feature was constructed during that time. A further characteristic of the study area which negates the possibility of intact heritage resources is the amount of disturbance that has occurred in the past. The crossing has been the location of at least three bridges (C. Wedge personal communications) three approach roads and a now abandoned CN Railway and bridge. The construction activities related to these structures along with those associated with the building of Highway 104 and Trunk 4 have all greatly altered the present landscape. Thus the chance of any significant cultural features surviving in the study area are minimal.

Conclusion and Recommendation

It is the professional opinion of Davis Archaeological Consultants Limited, that, in terms of the Special Places Protection Act (1980) no significant heritage resources will be impacted by the proposed construction activities. Therefore, it is recommended that the proposed construction of the bridge and approach road be allowed to proceed.

Historical Background Sources

Anonymous

1884 "Geological and Natural History Survey of Canada", Sheet No. 10, Public Archives of Nova Scotia, Halifax.

1884 "Geological and Natural History Survey of Canada", Sheet No. 21, Public Archives of Nova Scotia, Halifax.

Church, A. F.

1883-87 "Topographic Township map of Richmond County, Nova Scotia", Public Archives of Nova Scotia, Halifax.

Davis, S. A.

1992 "Proposal For Cooperative Archaeological Program Between The Nova Scotia Department of Natural Resources and Saint Mary's University", ms. on file, NSDNR Parks Division, Debert.

Wallace, L. W.
1985 "Archaeological Investigations in Battery Provincial Park, Cape Breton, Nova Scotia, 1985", ms. on file, Nova Scotia Museum, Halifax.

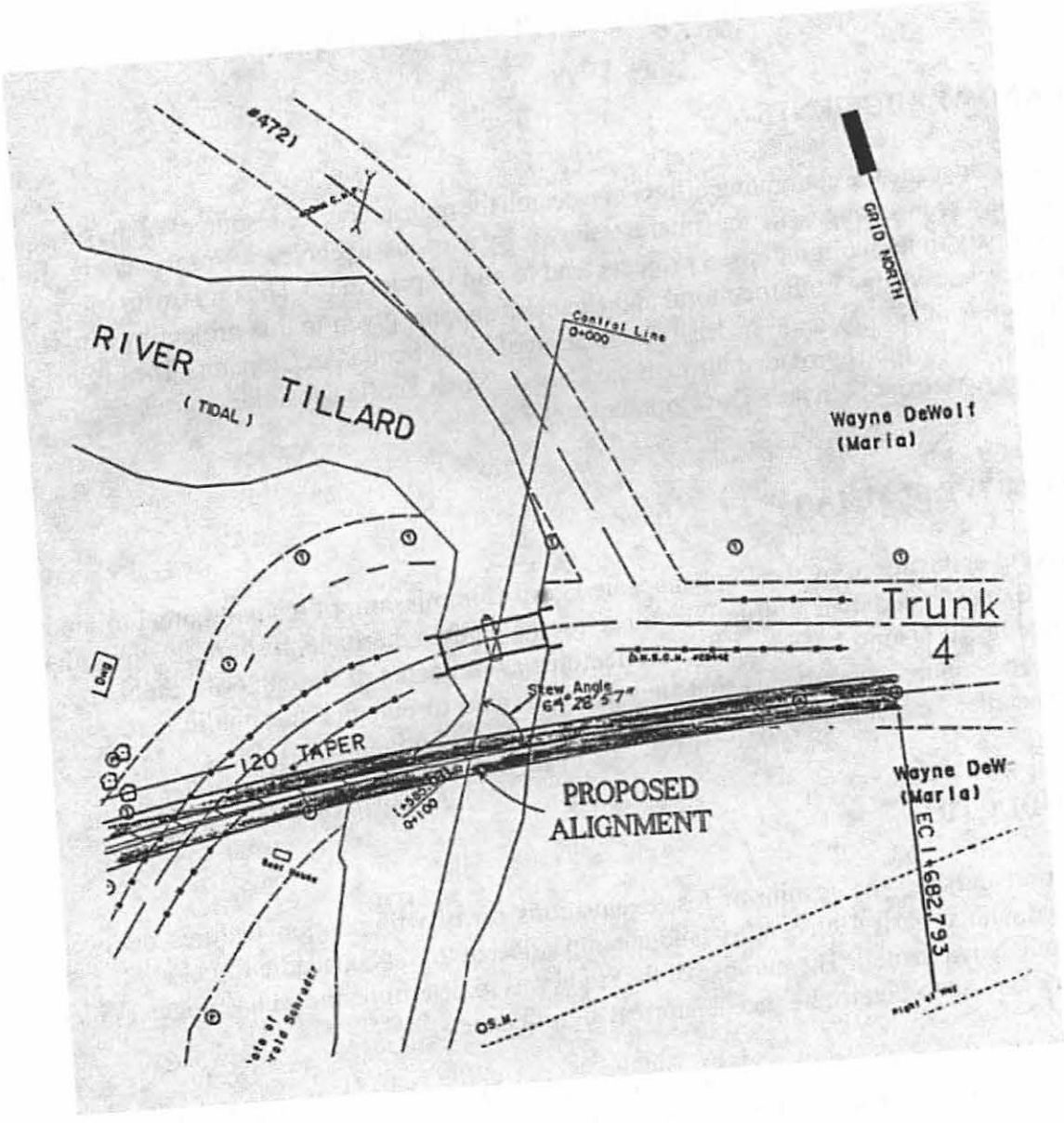


Figure 1: Proposed River Crossing, River Tillard.

ARCHAEOLOGICAL TESTING
FEATURES 20 AND 21
SHUBENACADIE CANAL
PORT WALLACE

Heritage Research Permit: A1994NS23

By Stephen Powell and Stephen A. Davis

ACKNOWLEDGMENTS

In the past decade the continuing efforts to research the archaeological resources of the Shubenacadie Canal has seen changes in the interest shown by various agencies. Unfortunately, in today's recessionary times, cultural based projects tend to slip in priorities. Thus it is with much gratitude that we acknowledge both the moral and financial support given to this project by The Charitable Irish Society of Halifax and The Irish Association of Nova Scotia/An Cumann. The project was also greatly aided by funds provided through the Canada/Nova Scotia subsidiary agreement on Halifax-Dartmouth Metropolitan area Development.

EXECUTIVE SUMMARY

The recent acquisition, by the Shubenacadie Canal Commission, of a small parcel of land east of Lock #2 has added two cultural features to the known heritage resources along the canal. Archaeological testing has identified the features as remnants of the 1826-31 canal construction camp. The report recommends that they be excavated to enhance the public perception of the Shubenacadie Canal and its place in the history of Nova Scotia.

INTRODUCTION

This report outlines the results of test excavations on two foundation features believed to be associated with an early 19th century labour camp adjacent to Shubenacadie Canal at Port Wallace, Dartmouth, Nova Scotia. The purpose of the study was to determine the archaeological potential of both features and to determine their historical significance.

Background research and field work was conducted by Davis Archaeological Consultants Limited during the month of October, 1994. The work was conducted under Heritage Research Permit #A1994NS23 issued to Stephen Davis by the Nova Scotia Museum. The archaeological tests, laboratory analysis and report preparation was completed by Stephen Powell.

During a 1983 survey, Saint Mary's University archaeologists recorded 19 canal related features in the Port Wallace area between the lower lock (#2) and Lake Charles. Several of these were building remains located within a stones throw of the canal. The present study area, the former Mossman property, was not included in the 1983 survey. The two foundation features discussed in this report

have been assigned feature numbers 20 and 21.

Both features fall under borden number BeCv-12. This general designation has been assigned by the Nova Scotia Museum to all canal related features in the Port Wallace area.

STUDY AREA

The general study area is located west of Highway #318 at Port Wallace, Dartmouth, Nova Scotia. Port Wallace, also referred to as canal Section 2, includes the area known as the summit ridge between lakes Micmac and Charles. This stretch of land was used in both prehistoric and historic times as a portage and stopover point by native people travelling to and from the Shubenacadie River system. Beginning in 1826 the land was subjected to canal excavation and lock construction by the Shubenacadie Canal Company. The canal began active operations in 1861 and ceased functioning as a commercial waterway in 1870.

At present, much of the area has been designated for residential and recreational use. Shubie Park, which offers peaceful walking trails in a historic setting, remains popular with visitors today.

The specific study area is located in a wooded area on the elevated bank east of the lower lock (#2). The area is bordered on the east side by Locks Road, to the west by a dirt road leading to Lake Micmac (Mossman right of way), and to the north by a dirt road leading to the culvert/bridge at the head of the lower lock.

METHODOLOGY

Prior to field work, historic plans and documents were viewed to develop an overview of land use in the study area. Most of this material was collected and filed during a 1983\1984 Shubenacadie Canal archaeological project conducted by Saint Mary's University Department of Anthropology. Additional sources such as nineteenth century newspaper reports were viewed at the Public Archives of Nova Scotia.

Random shovel testing was conducted in the general vicinity of features 20 and 21 to identify areas of archaeological potential on-site. Formal 1 x 1 metre test units were also excavated adjacent to both feature exteriors. As most of the exterior testing produced negative results it was decided to place formal test units on the feature interiors. This provided structural data and artifacts useful in dating the features.

Site information was recorded on Maritime Resource Inventory Forms as well as field notes and field drawings.

HISTORICAL BACKGROUND

General

Work on the Shubenacadie Canal began during the summer of 1826 when Lord Dalhousie turned the first traditional sod at Port Wallace. The summit ridge area at Port Wallace, spans a distance of some 1,529 yards between Lake Micmac and Lake Charles (Passfield, 1979:61). This area was subjected to deep excavation to allow, with the aid of two locks, the passage of vessels between the lakes. The canal as a whole was constructed in two phases: 1826-1831 and 1854-1861.

During the month of August 1826 a labour force of up to 150 men were employed in canal construction. The largest number of men working at any one time on the whole canal was 300 during the month of June, 1828 (Russell, 1985:38). These included masons, mechanics, carpenters, limeburners, blacksmiths, axemen and labours employed during the summer months with a lesser number employed during the winter (Passfield, 1979:62). Many of the masons and stone cutters were immigrants from Scotland who came specifically to work on the canal project.

At the onset and during the course of a large project such as the excavation of the "deep cut" and lock construction on Section 2 , on site accommodations for the work force would be a necessity. This would be particularly true for the immigrant workers, who would have had little time or means to purchase or rent land after their "hasty" arrival at the work site.

The Canal Camp

A plan of the Port Wallace area by canal engineer Francis Hall, dated August 16, 1826 (DHM), shows a " Canal Camp" on the high ground directly east of the lower lock #2. A combination of 8 rectangles and 3 circles are shown in a linear arrangement running N.N.W. - S.S.E. roughly parallel to the canal (Figure:1). The rectangles undoubtedly represent buildings while the circles may indicate the location of tents. Based on speculation, the labour camp probably included bunkhouses, a cookhouse and mess-hall, privies, miscellaneous storage sheds and possibly offices. The tents, if the interpretation of the circles on the plan is correct, may have provided temporary shelter for summer workers as the labour force was larger at this time.

The buildings and possible tents are arranged in a 4-3-4 pattern: 4 rectangles - 3 circles - 4 rectangles. The location of features 20 and 21 corresponds with the location of the most southerly group of 4 rectangles shown on Hall's 1826 plan. The southwest corner of Feature 20 is approximately 40 metres (131 ft.) east of the northeast corner (upper gate) of lock #2. This same approximate distance is shown on Hall's plan between the lock and the second camp associated building directly east of the lock.

Although Hall's 1826 plan shows 4 buildings east of the lower lock, structural evidence for only two of these, features 20 and 21, are readily observable in the study area. One possible explanation for this is that Hall's plan may have been a proposal or a schematic representation of the camp rather than a drawing of the actual buildings. Another possibility is that temporary structures were constructed on the site. Rather than stone foundations, these may have been resting on log footings, of which, no visible trace remains today.

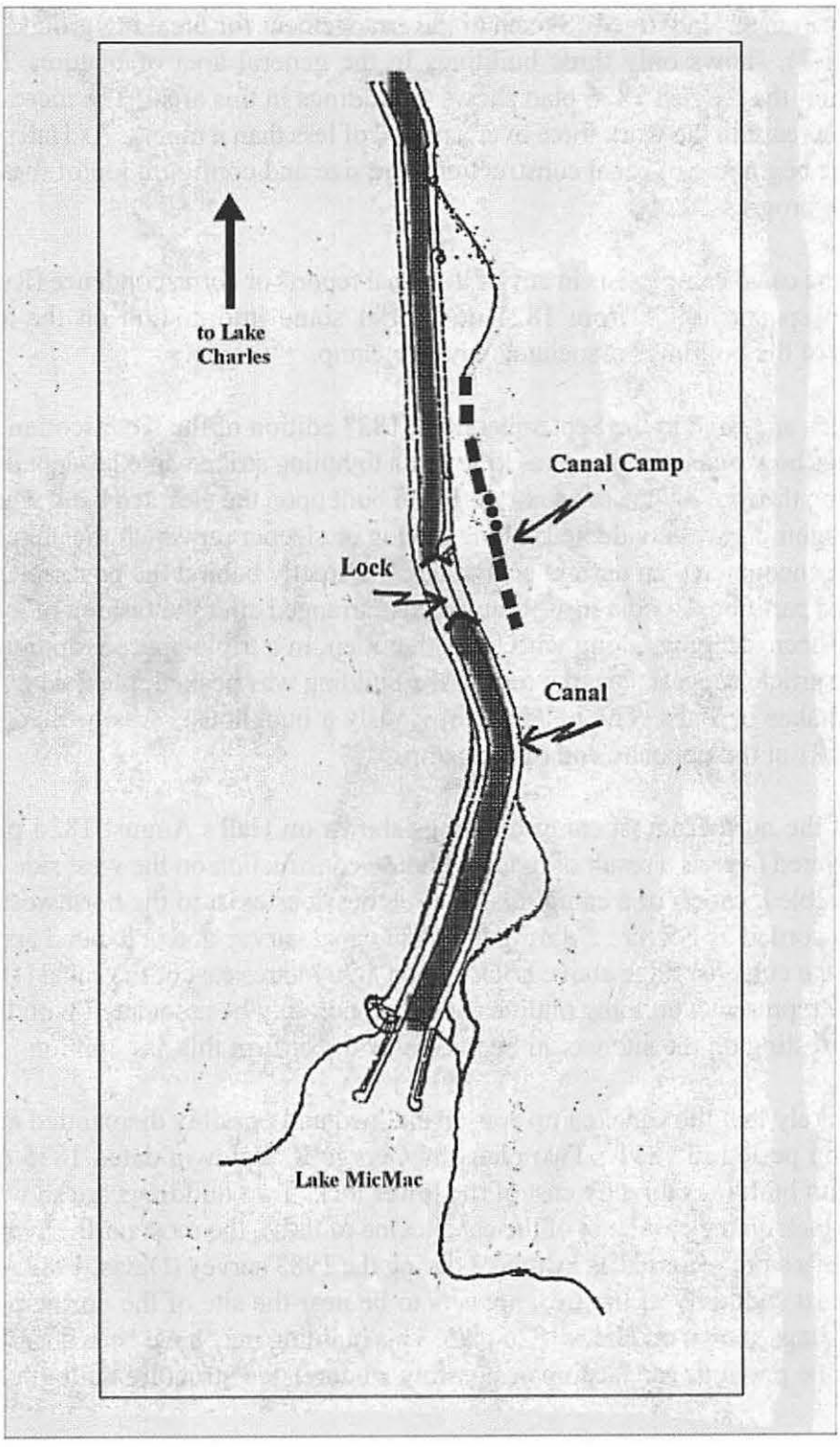


Figure 1: Revised plan based on 1826 Hall plan

Some linear ridging is visible on the surface in the area between and east of features 20 and 21. Further testing in this area would be necessary to determine if this is a building location.

Another plan by Francis Hall, titled "Sketch of the arrangement for breaking ground 25 July, 1826" (PANS MG 24-2), shows only three buildings in the general area of features 20 and 21. As mentioned earlier, the August 1826 plan shows 4 buildings in this area. The increase in buildings may reflect an increase in the work force over a period of less than a month. As Hall's July 1826 plan was drawn at the beginning of canal construction, the size and configuration of the camp probably changed as time progressed.

No mention of the canal camp exists in any of the canal reports or correspondence (Russell,1985:24). However, a newspaper article from 1827 does offer some information on the appearance and function of one of the buildings associated with the camp.

The article, which appeared in the September 20th, 1827 edition of the Novascotian (PANS, Micro #8064), describes how a canal worker was killed by a lightning strike while he slept in his bunk. The strike occurred on the roof of "the most northerly hut built upon the elevated bank which rises at Port Wallace." The lightning was conducted "along the log or sleeper on which the angular joists of the roof rested till it encountered an upright post of oak." Directly behind the post, and separated from it by a thin board partition, stood a row of bunk beds "arranged after the fashion of a barrack room." The victim had been sleeping, along with two other men, in a triple-spaced top bunk. Information contained in the article suggests that the roof of the building was peaked, planked over and covered with wooden shakes or slabs. The building, obviously a bunkhouse, was located to the north of features 20 and 21 at the opposite end of the camp.

The remains of the northernmost camp buildings shown on Hall's August 1826 plan were likely destroyed or covered over as a result of road and house construction on the west side of Locks Road. However, a possible location of a camp related structure does exist to the northwest of Feature 20. This area was recorded as Feature 2 during the 1983 canal survey and is located approximately 40 metres north of the culvert-bridge above Lock #2 and 8.70 metres east of the canal (Davis, 1983:13). The feature may represent a building outline and could possibly be associated with the canal camp. Archaeological testing on the site would be necessary to confirm this assumption.

It would seem likely that the canal camp was abandoned and possibly dismantled at the end of the first construction period in 1831. Two plans by George R. Baldwin dated 1835 (PANS MG 24 #37,#39) show no buildings directly east of the lower lock. Two buildings are shown, however, to the north of the lock on the east bank of the canal. One of these, the most northerly of the two, may be the lockkeeper's store recorded as Feature 3 during the 1983 survey (Davis, 1983:13). The second building, the most southerly of the two, appears to be near the site of the northernmost group of canal camp buildings shown on Hall's 1826 plan. This building may have been a surviving structure associated with the previous canal camp or possibly an unrelated structure built after the demise of the camp.

FEATURE DESCRIPTIONS

Features 20 and 21 are located in a wooded area on the high ground east of the lower lock (#2). The features are situated 22 metres apart and are aligned approximately north-south.

Feature 20 - Description (Figure: 2)

Feature 20 is a shallow depression with exterior earth and stone mounding. The mounding may have been placed around the exterior of the structure for insulation purposes. The depression measures approximately 3 x 3.50 metres (10 x 11 ½ ft). The long axis runs north - south. The exact location of the north wall is unknown as no mounding is visible on the surface at the northern end of the feature. For this reason, the overall dimensions of the structure are unknown.

Test unit 2, located in the southwest corner of the depression, exposed the southwest corner of the dry-stone foundation/footing wall. The southern portion of the wall consists of one course of large stones approximately 30 cm high. The western wall consists of 4 courses of smaller stones 40 to 50 cm high. Angular blasted stones are present in both walls. The base of the wall is resting on sterile B-horizon.

The exposed portion of the top of the west wall measures 35-40 cm in width. Many stones have slumped inward due to frost and tree root activity. Excavation on the wall exterior would be necessary to determine the actual thickness.

Feature 21 - Description (Figure: 3)

Feature 21 is a shallow depression mounded around the exterior with earth and stone. As with Feature 20, the mounding may have been placed around the foundation exterior for insulation purposes. The interior of the structure has been infilled with boulders probably sometime within the last 20 or 30 years.

The depression interior measures approximately 3.00 x 3.50 metres (10 x 11 ½ ft). The overall dimensions including the exterior mounding is 5.00 x 5.50 metres (16 ½ x 18 ft). The long axis runs north-south.

Test unit 2, placed on the interior side at the southern end of the feature, revealed the location of the south foundation/footing wall. The wall is of dry-stone construction, measures 35 cm in width, and is 4 courses (50 cm) high. The top of the wall is approximately the same height as the exterior mounding that surrounds the feature.

The wall is constructed largely of angular flat-faced blasted stone probably produced during the excavation of the canal. The base of the wall is resting on sterile B-horizon.

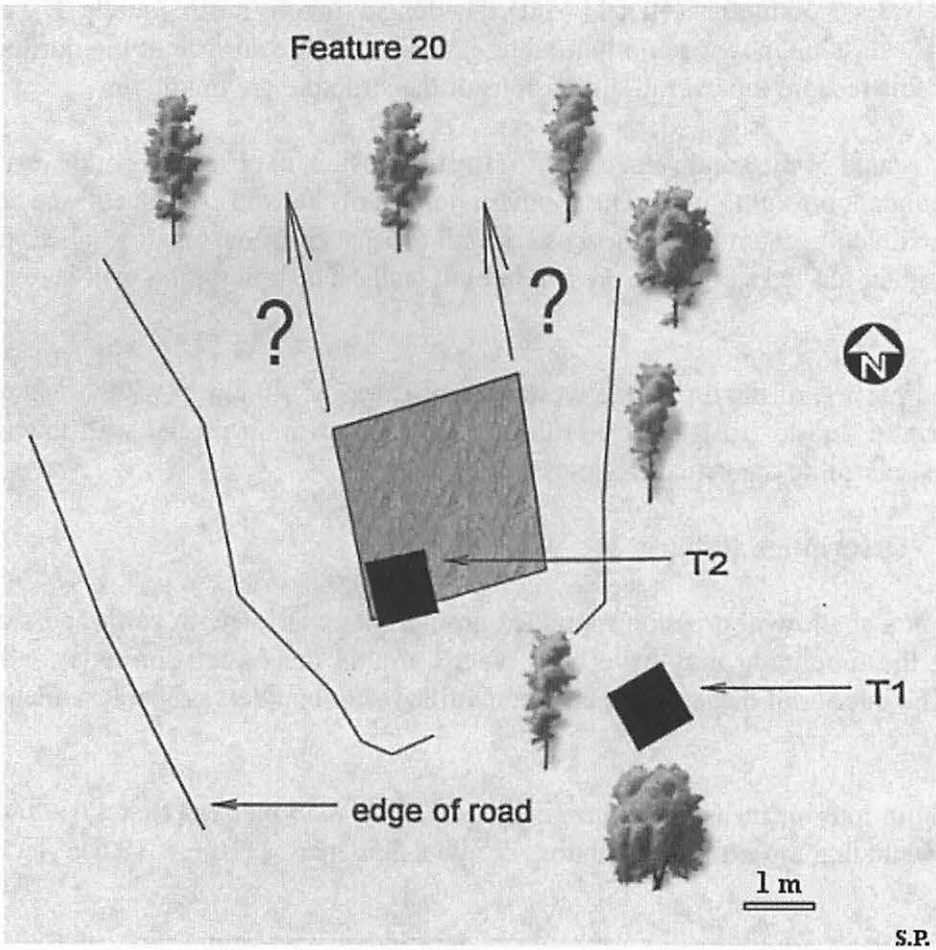


Figure 2

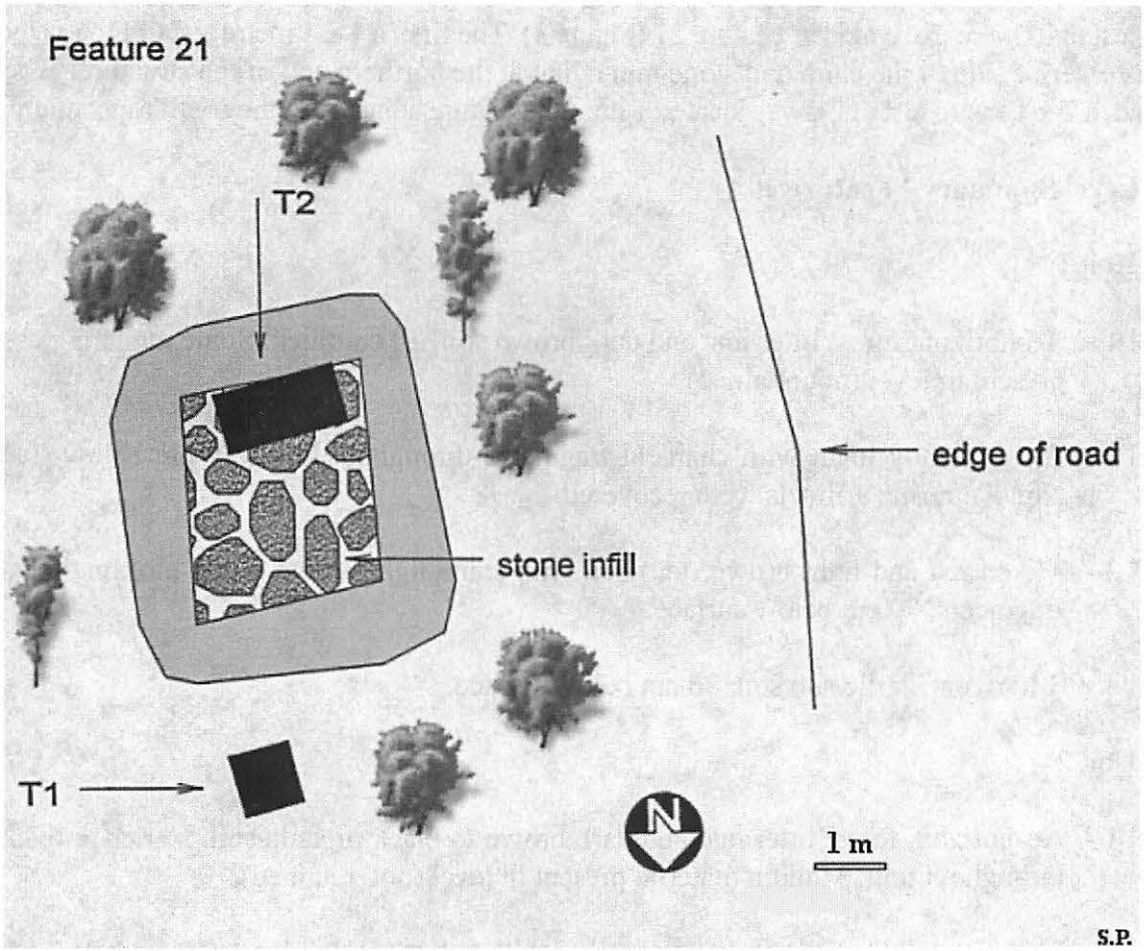


Figure 3

TEST EXCAVATIONS

Archaeological test units were excavated by trowel at features 20 and 21 to obtain architectural and material cultural data.

Two 1 x 1 metres test units were excavated at Feature 20 (Figure 2). Test unit 1 (T1) was located on the feature exterior adjacent to the southeast corner. The second test (T2) was located within the feature adjacent to the southwest corner.

Two test units were excavated at Feature 21 (Figure 3). The first, a 1 x 1 metre test (T1), was located on the exterior side of the earth and stone mounding at the northern end of the structure. The second, a 2 x 1 metre test (T2), was located within the feature adjacent to the south foundation wall.

Soil/Level Summary - Feature 20

Test Unit 1

Level 1 - Ao-horizon, forest litter mat and dark brown soil, 20 cm thick. Some modern glass was present in level (not retained).

Level 2 - Brown sandy loam with charcoal fragments throughout level, 20 cm below surface. Nondiagnostic artifacts were recovered.

Level 3 - Mixed red and light brown (tan) soil with some light brown sandy mottling, charcoal fragments, 30 cm below surface.

Level 4 - B-horizon, sterile sub soil, 36 cm below surface.

Test Unit 2

Level 1 - Ao-horizon, forest litter mat and dark brown to black organic soil. Varies in thickness throughout unit. Modern material present in level (not retained).

Level 2 - Brown to light brown sandy loam mixed with B-horizon in places, 35 cm below surface (depth measurements taken below surface, S.W. corner of unit). Large rocks, charcoal flecks and early 19th century artifacts are present in level. This level is confined to the S.W. corner area of unit (foundation).

Level 3 - Dark brown organic soil covering N.E. quad. of unit, 47 cm below surface. Large rocks and charcoal fragments present in level.

Level 4 - Loosely compacted brown soil with nodules of compacted material consisting of pebbles and gravel held together in a grainy matrix (mortar?), 47 cm below surface. Iron artifacts were recovered.

Level 5 - Shallow squarish outline, dark brown soil, possible post mould. Located 47 cm below

surface in S.W. quad. of unit.

Level 6 - B-horizon, compacted sterile sub-soil. This level slopes downward from the S.W. to the N.E. Located 45 cm below surface in the S.W. corner of unit, 62 cm below surface in the N.E. corner.

Soil/Level Summary - Feature 21

Test Unit 1

Level 1 - Ao-horizon, forest litter mat and dark brown organic soil, 15 cm thick. Modern material present in level (not retained).

Level 2 - Light greyish brown silty loam, loosely compacted (powdery) with gravel, small rocks and boulders, located 15 cm below surface . This level appears to be disturbed particularly in the northern half of the unit. Level 2 is mottled in places with tan, light grey and black soil.

Level 3 - B-horizon, compacted sterile sub-soil, 40 cm below surface.

Test Unit 2

Level 1 - Boulder infill mixed with organic matter, leaves etc. Some sherds of modern glass found near bottom of level (not retained).

Level 2 - Light brown loosely compacted soil, mottled with black in places (redeposited B-horizon ?). Located 26 cm below surface (depth measurements taken from top of south foundation wall). This level is found filling gaps in the wall and in areas against the interior surface of the wall. Early 19th century artifacts were recovered from level 2.

Level 3 - Light brown sandy clay loam with large and small rocks, light gravel and small pieces of slate. Level 3 is located approximately 40 cm below surface and is 10-12 cm thick. Evidence of rodent activity was noted in this level. Nineteenth century artifacts were recovered from the western half of the unit at a depth of 50 cm below surface.

Level 4 - B-horizon, compacted sterile sub-soil, 55 cm below surface.

Artifact Summary - Feature 20

A total of 18 artifacts were recovered from test units 1 and 2. The majority of these were found in test unit 2 located within the structure.

Test Unit 1

Glass. Two small fragments of olive green bottle glass were recovered from level 2. The fragments are nondiagnostic.

Nails. Three hand-wrought nail fragments were recovered level 2. The fragments are badly corroded and not datable.

Test Unit 2

Ceramics. Three sherds of pearlware were recovered from level 2. Two of these are undecorated body sherds and the third is a blue shell-edged rim/brim sherd from a plate. The latter also displays a floral (?) motif in moulded relief on the brim just below the moulded shell edge rim decoration. Moulded relief decoration on pearlware (other than shell-edge) occurred only during 19th century (Sussman, 1977:108). Shell-edged pearlware was commonly used during the period c.1780-1830 (South, 1977:212). The Feature 20 example, because it exhibits 19th century traits, is dated to the period c.1800-1830.

Glass. One fragment of clear (leaded) container glass was found in level 2. The sherd is not diagnostic.

Button. One metal disc-shaped button was recovered from level 2. The button is flat-faced with the eye foot anchored in a pronounced boss. This is similar to types 7 and 8 shown in South's button typology (1977:100). Buttons of this type were common during the 18th century and continued to be produced on into the early 19th century (Noel Hume, 1980:92).

Nails. One complete hand-wrought nail and 5 nail fragments were recovered from test unit 2. All specimens are in an advanced state of deterioration and are therefore nondiagnostic. One nail fragment was found in level 4, the remainder were found in level 2.

Unidentified Iron. One fragment of heavily corroded iron was recovered from level 2 and another was found in level 4. The level 2 fragment can be classified as nondescript scrap iron. The level 4 specimen is a thin, tapered, heavily encrusted object measuring 14 cm in length. The dorsal surface is convex and the ventral surface is flat. This may be the tip or distal end of a tool, possibly a file.

Artifact Summary - Feature 21

A total of 12 artifacts were recovered from test unit 2. Only modern material was found in test unit 1. This material was noted and reburied.

Test Unit 2

Ceramics. Two sherds of undecorated pearlware and one sherd of undecorated white refined earthenware were recovered from level 2. The pearlware has a deep blue-tinged cobalt oxide glaze. Pearlware was produced during the period c.1780-1840. White refined earthenware does not have an exact date of introduction, but by the 1820s earthenwares with a white finish had evolved as an improvement on pearlware (Miller, 1980:2).

Level 3 produced 3 sherds of pearlware and one sherd of white refined earthenware. One pearlware sherd, possibly from a teacup, has an underglaze polychrome painted floral decoration. The sherd has an olive green leaf motif with a brown line (stem) decoration. Brown was a common colour for

stems and rim lines up to c.1840 (ACO Guide, n.d:7). Colours such as olive green and brown were introduced around 1795 and remained common on teawares through the 1820s (Miller, 1991:8). The Feature 21 sherd is datable to the period c.1795-1830.

Glass One fragment of clear "leaded" container glass was recovered from level 2 (nondiagnostic).

Clay pipes. A small clay pipe bowl fragment with a moulded "stem and leaf" decoration was recovered from level 2. One clay pipe stem fragment with a bore diameter of 5/64 was recovered from level 3. The stem is undecorated and no maker's marks are present. The clay pipe fragments are virtually nondiagnostic. Bore diameters of 6/54 and smaller and decorated pipe bowls were common during the 19th century.

Button. A flat disc-shaped metal button, complete with soldered eye, was recovered from level 3. The button is similar to type 9 shown in South's button typology (1977:100). No trace of decoration is visible on the button face. The lack of decoration may be a result of metal deterioration or the button may belong to a plain undecorated variety. Buttons such as this were in common use as the 18th century progressed and continued to be produced on into the early 19th century (Noel Hume, 1980:92).

Nails. One corroded hand-wrought nail was recovered from level 2 (nondiagnostic).

DISCUSSION AND CONCLUSIONS

The location of features 20 and 21 does correspond with the location of the canal camp shown on Hall's 1826 plan. The actual number of buildings comprising the camp remains unknown. Much of the northern portion of the camp was probably destroyed by road and house construction north of Feature 20.

Artifactual evidence, although minimal, suggests an early 19th century occupation date for both features. The ceramics, in particular, reflect a date range that coincides with the initial canal construction phase - 1826-1831.

The test excavations produced very little information on the buildings function and structural elements. The relatively small size of Feature 21 would suggest that it may have functioned as secondary building, possibly a storage shed. If Feature 21 did serve a domestic function, it likely housed a small group of people, such as a single family. It should be noted that the overall dimensions of Feature 20 are unknown at present. Further testing would be necessary to determine its northern extent.

Finally, no evidence for a subterranean cellar was noted at either feature 20 or 21. In both cases, the stone foundation walls were built directly on top of the compacted B-horizon (sterile sub-soil) and probably served as footings for a wooden structure.

Features 20 and 21 may be the only surviving remains of the labour camp occupied during the first construction phase of the Shubenacadie Canal. Both features are considered to have archaeological

value and historical significance They should therefore be protected from any future misguided disturbance.

RECOMMENDATIONS

The background study and archaeological testing of features 20 and 21 places them in a context associated with the first building phase of the Shubenacadie Canal. Previous archaeological excavations along the canal have concentrated on specialized features: a domestic structure associated with Irish immigrants, a forge, a black powder magazine, a poacher's hut and the Wellington lock (Davis 1984, Davis and Niven 1990). These excavations have provided substantial knowledge to the existing historic record of events and features associated with the canal and its workers.

As noted in the introduction to this section features 20 and 21 are believed to be associated with the 1826 canal camp. It is recommended that one or both of these features be excavated. The most cost effective and beneficial, in terms of educational opportunities, is to use these features and others within the Port Wallace area as university based archaeological fieldschools.

REFERENCES CITED

Davis, Stephen A. 1983. Initial Archaeological Survey: Shubenacadie Canal Redevelopment Project. Department of Anthropology, Saint Mary's University.

Dartmouth Heritage Museum (DHM). Plan of Section 2: Port Wallace by Francis Hall, 16 August, 1826.

Miller, George L. 1980. Classification and Economic Scaling of 19th Century Ceramics. Historical Archaeology. 14:1-40

Miller, George, L. 1991. A Revised Set of Index Values for Classification and Economic Scaling of English Ceramics from 1787 to 1880. Historical Archaeology. 25:-1-23.

No Author. N.D. Ceramics: ACO Guide to 19th Century Sites. Ontario Ministry of Culture and Recreation, Historical Planning and Research Branch, London Office.

Noel Hume, Ivor. 1980. A Guide to Artifacts of Colonial America. Alfred A. Knopf, New York.

PANS (Public Archives of Nova Scotia). MG 24, Vol.2

PANS MG 24, Vol. 37, #1(a)

PANS MG 24, Vol. 39

PANS The Novascotian. September 20, 1827. Micro Reel# 8064

Passfield, Robert. 1979. The Shubenacadie Canal. Historic Sites and Monuments Board and Parks Canada.

Russell, William A. 1985. One Mile of Canal: An Historical Overview of Land Use at the Summit Section 2, the Shubenacadie Canal. In: Davis, Stephen A. 1985. Shubenacadie Canal Redevelopment, Archaeological Survey, Zone 3, Dartmouth, Nova Scotia. Department of Anthropology, Saint Mary's University.

South, Stanley. 1977. Method and Theory in Historical Archaeology. Academic Press, New York.

Sussmam, Lynne. 1977. Changes in Pearlware Dinnerware, 1780-1830. Historical Archaeology. 11:105-111.

THE DISTRIBUTION AND DIVERSITY OF NOVA SCOTIAN ARCHAIC SITES AND MATERIALS: A RE-EXAMINATION[1]

Michael Deal and Douglas Rutherford
Archaeology Unit
Memorial University of Newfoundland

Introduction

In this paper we present the results of a recent inventory of Archaic period material culture and site locations in Nova Scotia. The last comprehensive review of Archaic material culture was undertaken during the early 1890s, when Harry Piers, the curator of the Nova Scotia Museum at that time, wrote a descriptive report on what he referred to as "aboriginal relics" in the Museum's collection (Piers 1895). While the volume of materials and the number of known sites has increased dramatically over the last century, very little of this information has appeared in print. The initial goal of our research was to update the existing inventory of Archaic sites and materials for the province and to provide some basic commentary on this inventory. Any interpretations based on our findings will be tentative at best. However, they do permit some useful comparisons with better known Archaic sequences in adjacent areas and will serve as a database for future research in Nova Scotia.

We have attempted to include here all available published and unpublished sources, as well as personally communicated information on private collections. Contextual and chronological information is limited since only two of the artifacts included in this report were excavated by professional archaeologists (Davis and Sanger 1991; Sanger and Davis 1991), and none have associated radiocarbon dates. Further, both published and unpublished reports are inconsistent in their terminology and the relative completeness of the descriptions provided. This is especially true for survey reports and descriptions of private collections. Fortunately, this situation has been improving over the last decade, with an increase in the number of professional surveys and the Nova Scotia Museum's recent adoption of a program for recording private collections.

We have included in this report only those artifact classes that previous researchers have considered to be diagnostic of the Archaic period in the Maine/Maritimes region and only materials from known site locations. The current sample includes 113 chipped stone artifacts and 252 ground stone artifacts (including nine miscellaneous artifacts) from 127 known site locations within Nova

[1] Since this study was completed in 1992, excavations in Maine have brought the Early/Middle Archaic period into clearer focus (Petersen 1991; Petersen and Putnam 1992; Robinson 1992, 1996; Sanger 1996; Sanger et al. 1992). With new information from well dated sites Robinson (1992) has identified a Gulf of Maine Archaic Tradition and associated Morrill Point Burial Complex. Murphy (1997, 1998) has been able to extend this cultural tradition into the Maritimes, through a reanalysis of existing museum collections.

Scotia. No bone or antler artifacts have been recovered from an Archaic site in the province. The discussion which follows, briefly introduces the general Archaic sequence for Nova Scotia, presents a description of the materials used in this study and provides some observations concerning their geographic distribution.

Unfortunately, very little is known about the Early and Middle Archaic occupations in the province. A continuous rise in sea-level since Paleoindian times has resulted in the loss of large portions of Nova Scotia's coastline, and with it much of the archaeological evidence for period (e.g., Davis 1980, 1983; Sanger 1979, 1988; Sanger and Belknap 1987; Sanger and Kellogg 1989; Simonsen 1979a,b; Turnbull 1988). It is also quite possible that some of the materials in collections, which have been identified as Late Archaic, are actually from earlier occupations (e.g., Cox 1991; Sanger 1991). This is particularly true of certain classes of ground stone artifacts.

Three Late Archaic cultural manifestations appear to be represented by the material culture in Nova Scotian collections. The first of these is the Laurentian Archaic Tradition, as originally defined by William Ritchie (1980) for New York State. The second manifestation is the Maritime Archaic Tradition, as originally defined by Jim Tuck for Newfoundland and Labrador, and which Tuck sees as developing out of an indigenous Middle Archaic population in that area, as well as the Maine/Maritimes region (Tuck 1971, 1975, 1976). In Maine, Bruce Bourque has introduced the term "Moorehead Phase" for the Late Archaic and given it a much more restricted chronological and geographical placement (Bourque 1975, 1976; Spiess et al. 1983). The fact that these Late Archaic cultures shared a well-developed ground stone technology, is of particular importance to this study. Toward the end of the Late Archaic, there was a population movement into the Maine/Maritimes region form the south. This group is generally associated with the Susquehanna, or Broadspear Tradition (Tuck 1984).

Chipped stone materials:

While a great variety of chipped stone artifacts are known throughout the province, the only artifact class with diagnostic Archaic forms is the stemmed biface. Six stemmed biface forms are associated with the Archaic period in Nova Scotia (Table 1). Without associated radiocarbon dates, it is difficult to make definite statements about their temporal placements. However, each have cognates from elsewhere in the Northeast, and presumably their date ranges overlap with those for the Nova Scotian forms.

Table 1. Distribution of Archaic stemmed biface forms in Nova Scotia.

Site(s)	A	B	C	D	E
Bain	-	-	>2[a]	-	-
Tusket sites	2	-	14	7	-
Barren Lake	1	-	-	-	-
Port Joli sites	-	-	1	-	-
Indian Gardens	1	1	4	1	-
Lake Rossignol	-	-	1	-	-
Kejimkujik sites	-	-	>5[a]	1	-
Bear River	2	-	-	1	-
Tiddville	1	-	-	-	-
Adams	1	-	-	-	-
Scots Bay	1	-	-	-	-
Yoell	-	-	1	-	-
Gaspereau Lake	-	6	11	12	-
Salmontail Lake	-	-	2	2	-
Melanson	-	-	1	4	-
St. Croix	-	-	1	-	-
Grand Lake sites	-	-	>3[a]	-	-
Shubenacadie River	-	-	2	-	-
Rafter Lake	-	1	-	-	4
Stewiacke River	-	-	>4[a]	-	-
Dalhousie Mountain	1	-	-	-	-
Amherst Shore	1	-	-	-	-
Steele's Island	1	-	-	-	-
Grand River	1	-	-	-	-
Odaswanokh	1	-	-	-	-
Geganisg	1	-	-	-	-
North Aspy	1	-	-	-	-
Totals (n=108)	16	8	52[b]	28	4

A = Large, side notched point; B = Eared, triangular points; C = Narrow stemmed points; D = Broad-bladed, stemmed points; E = Small, stemmed points.
a Total numbers not given.
b Minimum number of artifacts.

The first stemmed biface class is presently known from only one location in Nova Scotia, that is the Erskine site (BfDd-5/6) on Gaspereau Lake. It is a large, contracting stemmed biface, which closely resembles the Middle Archaic "Stark" form originally identified at the Neville site in New Hampshire, and more recently at sites in Maine and southwestern New Brunswick (Deal 1984;

Dincauze and Mulholland 1977; Spiess et al. 1983). The variant of this form from the Neville site has been dated to between 6500 and 6000 B.P. (Dincauze 1976).

Erskine (1967) recovered four contracting stem points near the bottom of the Archaic deposit at BfDd-5/6 (Plate 1; also Keenlyside 1984b, Slide 7). He suggested that two other stemmed point specimens represented an even earlier style which be called "Blue-win." At least one of the latter specimens (BfDd-5/6:152) would not look out of place with the Late Archaic Broadspear group, of which three specimens were recovered stratigraphically close by. Erskine's projectile point categories also included narrow bladed specimens with slightly expanding stems (three specimens) or no stem (two specimens). Based on provenience, he placed them between the Middle Archaic contracting stem and Late Archaic Broadspear point styles. At least one of the specimens in Erskine's slides looks more like the Middle Archaic "Merrimack" projectile points illustrated by Snow (1980:175) then to the narrow stemmed points of the Maritime Archaic. This collection, which is currently in the National Museum of Civilization, bears further examination.

Two forms are related to the Laurentian Tradition. These are side-notched and triangular, "eared" points. Side-notched points are frequently large, with parallel to concave blade edges and basal grinding (Plate 2). Cognates are known from New Brunswick, Maine, Ontario, and southern New England (e.g., Borstel 1982; Bourque and Cox 1981; Sanger 1975; Sanger et al. 1977). Radiocarbon dates associated with the side-notched style from other regions ranges from c. 6500-4500 B.P. (Ritchie 1980:89). In Nova Scotia they are distributed along the present northern coastline of both mainland Nova Scotia and Cape Breton Island, with some examples known from southern Cape Breton and the Gaspereau Lake and Lake Rossignol areas. The triangular points are smaller in size and possess characteristic flaked "ears" at the base. Similar forms are known from southern New England, dating between c. 5000-4000 B.P. (Ritchie 1980:91). Their distribution is primarily in the western half of the province, at interior riverine and lacustrine locations. Six specimens were recovered from the Erskine site (Plate 3).

Narrow stemmed points have been related to the Maritime Archaic Tradition, or Moorehead Phase. These are straight stemmed, straight blade-edged, points (Plate 4). Examples frequently exhibit the striking platform at the base of the stem. Shoulder form, predominantly rounded, differs from the frequently angular forms seen on examples from other parts of the Maine-Maritimes region. Similar forms are dated at c. 3700 B.P. in New Brunswick (Sanger 1973) and c. 5000-4000 B.P. in Maine (Bourque 1975:40; 1976). Their distribution in Nova Scotia is at principally interior riverine/lacustrine locations in the western half of the province. To date, no examples have been recovered east of the Shubenacadie River.

Small, crudely-flaked points with poorly developed stems are also known. These are possible cognates of early forms known from Maine, dated at c. 5200 B.P. (Bourque 1975:35). Only one site, Rafter Lake in Halifax County, had yielded this form (Davis 1987:117).

The last form is a broad-bladed, stemmed form found primarily at riverine/lacustrine sites in the Tusket area of southwestern Nova Scotia (Davis 1991b:Plate 3) and at Gaspereau Lake (Plate 3) and along the Gaspereau River. Drill tips and bases associated with this style have also been found at four sites (see Inventory, below). Related forms are known from the end of the Late

Archaic Period in New Brunswick, Ontario, Maine, and southern New England, dating between c. 4000-3400 B.P. (Borstel 1982; Deal 1986; Sanger et al. 1977; Snow 1975; Spiess et al. 1983). They are associated with the Susquehanna Tradition.

Ground stone materials:

The ground stone artifacts include five classes, namely, ground slate projectile points and bayonets, gouges, fully-grooved axes, atlatl weights, ulus and plummets, which roughly correspond to Wright's (1962) Archaic artifact classes for southern Ontario. Of these artifact classes, only the slate bayonets are exclusively associated with the Late Archaic. The 47 slate bayonets can be placed in two basic subclasses (Table 2). Twenty-four specimens have long narrow blades, with hexagonal or biconvex cross-sections, and straight or contracting stems (Plate 5). Decorative elements occur on three specimens (Plate 6). Variants of this class have been recovered from Late Archaic burials from Maine, as well as the Cow Point site in New Brunswick, which is believed to date to about 4000 to 3700 B.P (Sanger 1991b.) Although relatively rare, these specimens are widely distributed throughout the province. We have placed the remaining 23 specimens in a separate subclass that can be characterized by broad blades, hexagonal cross-sections and contracting stems. Most of the stems are notched. Two of these specimens are relatively large, and believed to have come from naturally eroded burials. The workmanship on the slate bayonets is quite variable, and some examples of the smaller version of this class exhibit evidence of use-wear. Except for one specimen found on the Tantramar Marshes (Turnbull 1988), this form is found exclusively in western Nova Scotia.

The 10 slate projectile points included in this study were all collected at Barren Lake, near the southwestern coast of Nova Scotia (Davis 1991b:Plate 2). This area is the portion of the province closest to northeastern coast of Maine, where these this artifact class seems to occur most often (e.g., Smith 1948:44-46; Willoughby 1935:55ff.). The Nova Scotian examples can be characterized as barbed, biconvex in cross-section and having a straight stem (Plate 7).

Two additional ground slate specimens, which are unique in Nova Scotian collections, probably deserve mention. One is a large, straight stemmed, slate knife, which was picked up by a scallop dragger off Digby Neck, about 15 nautical miles off shore (Anonymous 1989). The second is a section of a ground slate harpoon, found along the Mersey River, in southwestern Nova Scotia (Davis 1991). Based on provenience and stylistic grounds, we would date the slate knife to the Middle Archaic, and the harpoon to the Late Archaic.

Atlatl, or spearthrower, weights are very rare in the Maine/Maritimes Region. Only four specimens have been reported in Nova Scotia. Two specimens were recovered at Rafter Lake (i.e., BeCx-2:1, 4) and are now in the Nova Scotia Museum. The other two specimens are from Gaspereau Lake. One of these was a "single triangle of slate" (BfDd-5/6:78) surface collected at the Erskine site (Erskine 1967, 1969d:22). The second Gaspereau Lake specimen is a badly damaged "winged" atlatl weight in the Jim Legge Collection (i.e., from BfDd-4; Plate 8).

Two specimens from Gaspereau Lake are similar to the "rods" or abrading stones reported for Maine and New Brunswick (Sanger 1975). Stone rods have been reported from three other sites in

southwestern Nova Scotia, namely, Eel Lake (BbDm-2/5), Digby County (Davis 1987:16), Upper Nine Mile Lake, Hants County (Preston 1991), and East Brook, Lake Rossignol (BbDg-12:11; Rossignol Survey 1985). Further, two perforated abrading stones similar to Sanger's Group B Abrasives (1973:68-69, 204; cf. Snow 1980:209) have been surfaced collected by Jim Legge at sites BfDd-4 and BfDd-6, Gaspereau Lake.

Archaic slate ulus are known from eight Nova Scotian sites. Two basic subclasses are distinguished by the presence or absence of a ridge, or hand-grip modification along the straight edge. The ridged ulus are larger and two specimens were recovered by scallop draggers, about nine nautical miles off Digby Neck (Anonymous 1989; Davis 1991a). Similar large ridged ulus have been recovered offshore in Passamaquoddy Bay (Black and Turnbull 1988; Turnbull and Black 1988) and northeastern Prince Edward Island (Keenlyside 1984). It seems likely that these finds have been removed from submerged archaeological sites, and therefore are of Middle rather than Late Archaic origin. The other ulu subclass exhibits a variety of hafting features. One damaged specimen from Lake Rossignol may have originally had two perforations to permit the attachment of a wooden or bone handle (Kemp 1987). A second specimen from Lake Rossignol has a long contracting stem and two other specimens have tapering, angular stems (Plate 9). Seven of the latter group were collected on sites along interior lakes.

Table 2: Distribution and condition of ground stone bayonets from sites in Nova Scotia.

Sites:	Complete	Tip Missing	Tip	Body	Base Missing	Base
Narrow Bladed						
Barren Lake	1	-	-	1	-	-
Indian Gardens	1	3	1	1	-	2
Gaspereau Lake	3	-	-	-	-	1
Lake Rossignol	-	-	2	3	-	1
Little River Harbour	1(?)	-	-	-	-	-
Cow Bay	-	-	-	-	-	-
MacLeod Farm	-	1	-	-	-	1
Nova Scotia Museum	-	1	-	-	-	-
Subtotals (n=24):	6	5	3	5	0	5
Broad Bladed Large						
Barren Lake	-	-	-	1	-	-
Milton	1	-	-	-	-	-
Indian Gardens	1	-	-	-	-	-
Medway River	1	-	-	-	-	-
Tantramar Marsh	-	-	-	-	1	-
Indian Island	1	-	-	-	-	-

Table 2 continued: Broad Bladed Small

Barren Lake	1	3	-	-	-	-
Indian Gardens	1	-	2	-	-	-
Gaspereau Lake	-	-	2	-	-	-
Melanson	2	-	-	-	-	-
Lake Rossignol	1	-	-	-	-	-
Elmsdale	1	-	1	-	-	1
Enfield	-	-	-	1	-	-
McCulloch Collection	-	1	-	-	-	-
Waverly	2	-	-	-	-	-
Subtotals (n=23):	10	4	5	2	1	1
Totals (n=47):	16	9	8	7	1	6

Nova Scotian Archaic plummets are ovate, or sometimes elliptical shaped, cobbles with a pecked suspension groove at one end (Plate 9). Twenty-nine specimens are associated with eight coastal and 11 interior sites, and four other reported specimens can only be assigned to a general area. Site locations are spread across the province, but the majority are from southwestern Nova Scotia.

The gouge is the most common and also the most poorly recorded Archaic artifact class (Tables 3 and 4). The most important attributes of this class are the length and depth of the groove, and four basic subclasses can be distinguished, namely A. short, deep grooved, B. short shallow grooved, C. long shallow grooved and D. long, deep grooved (Plate 10). Unfortunately, only slightly more than one-half of the 81 specimens included in this survey were adequately described and some were merely listed as "Archaic grooved gouge." The evidence at hand suggests that the first three subclasses of gouge are more or less equally common and widely distributed, while the short, shallow grooved subclass is relatively rare. Nine of the 39 sites associated with the artifact class are located near coastal areas, while most of the remainder are located on large interior lakes.

The Archaic axe class consists of 55 specimens from 36 sites. These axes are generally ovate in shape, although sometimes elongated, and characterized by a full groove at a right angle to the long axis of the artifact to facilitate hafting (Plates 11 and 12). The elongated versions are quite rare (Plate 13). There is also one example of a fully grooved hammerstone in the Legge Collection from

Gaspereau Lake and one other was previously found by Harry Piers (1895:48-49) in Dartmouth. A single 3/4 grooved axe, of finely worked, black quartzite, found by Ellis Gertridge at Melanson, Gaspereau River, may date to the Late Archaic or Early Ceramic period (Figure 14). Grooved axe site locations are primarily in central and southwestern Nova Scotia and about two-thirds of the specimens come from interior riverine or lacustrine sites.

Discussion:

Although we have thus far focused on Archaic material culture and site distribution, our inventory also includes one possible economic resource location. Marine biologists from Acadia University have recently documented a 4400 year old forest and an extensive oyster bed off Long Island, in the Minas Basin (Bleakney and Davis 1983; Ferguson 1983). These areas were exposed by a recent outflow channel of the Gaspereau River through the intertidal mud flats over two kilometres off shore. Oyster shells, measuring up to 20 cm in length have been recovered, and three specimens produced an average radiocarbon date around 3800 B.P. Today, oyster beds are only found in the warmer waters of northeastern Nova Scotia and Cape Breton Island (Stewart 1984), but oyster shells are relatively common in Ceramic Period middens and oysters commonly appear in historic Micmac folklore (Black and Whitehead 1988:17, 24). If we add to this information, the fact that evidence for Archaic shellfish exploitation has been found in Maine and New England (Sanger and Belknap 1987; Brennan 1974), then the submerged oyster bed off Long Island and possibly others along the Nova Scotian coast, may have been a useful resource.

In terms of site distributions, there are certain areas with concentrations of Archaic sites (Tables 3 and 4). These include the Shubenacadie drainage in west central Nova Scotia (Piers 1895; Preston 1974; Willoughby 1922:39), the Gaspereau Lake-Gaspereau River system which drains into Minas Basin (Erskine 1967) and the Mersey drainage system in southwestern Nova Scotia (Christianson 1985; Deal et al. 1987). The diversity and volume of materials collected and the number of sites recorded indicate that these where important settlement areas and transportation routes during the Late Archaic. Smaller clusters of sites are also known from Tusket Falls and Great Barren Lake in southwestern Nova Scotia (Davis 1991a), Tatamagouche Bay on the northeastern shore (Deal 1991b) and Lake Ainslie on Cape Breton Island.

We would like to reiterate that any conclusions based on the artifact and site distributions reported here must be of a limited nature. What is obvious from the material culture diversity and site distributions, is that Archaic populations occupied the entire province, and maintained at least indirect contact with other Archaic peoples representing a number of ecologically diverse areas within the Northeast. Within Nova Scotia itself, certain artifact subclasses seem to be associated with either the southwestern or northeastern half of the province. In particular, during the Late and Terminal Archaic, materials from southwestern Nova Scotia suggest close ties with northeastern Maine and southwestern New Brunswick. Any further clarification of the Archaic sequence for Nova Scotia must await the discovery of undisturbed deposits, and the recovery of properly provenienced and dated materials.

Table 3: Distribution of Archaic material culture in Nova Scotia.

Site(s):	Bayonets		Axes	Gouges*					Ulus**		Atlatl	Rods	Plummets
	Broad	Narrow		?	A	B	C	D	A	B	Weights		
Sites West of the Shubenacadie Drainage:													
Canning	-	-	1	-	-	-	-	-	-	-	-	-	-
Melanson	2	-	-	-	-	-	-	-	-	-	-	-	2
Gaspereau Lake sites	2	4	7	-	-	1	-	4	-	3	2	2	6
Salmontail Lake	-	-	-	-	-	1	-	1	-	-	-	-	2
White Rock	-	-	-	-	-	-	-	-	-	-	-	-	1
Lawrencetown	-	-	-	-	1	-	-	-	-	-	-	-	-
Bloody Creek	-	-	1	-	-	-	-	-	-	-	-	-	-
Digby Neck sites	-	-	-	-	-	-	-	-	2	-	-	-	-
Salmon River	-	-	-	1	-	-	-	-	-	-	-	-	-
Eel Lake	-	-	-	-	-	-	-	1	-	1	-	1	-
Barren Lake sites	5	2	-	1	-	-	-	-	-	1	-	-	1
Cape Sable Island	-	-	-	-	-	-	-	-	-	-	-	-	1
Roseway River	-	-	-	2	-	-	-	-	-	-	-	-	-
Ohio River	-	-	1	-	-	-	-	-	-	-	-	-	-
Medway River	1	-	-	-	1	-	2	-	-	1	-	-	-
Lake Rossignol sites	-	6	1	11	-	1	-	1	1	-	-	1	1
Indian Gardens	4	2	9	5	-	4	-	1	-	3	-	-	7
Milton	1	-	-	1	-	-	-	-	-	-	-	-	-
Cloud River	-	-	-	-	-	-	-	1	-	-	-	-	-
Hibernia	-	-	1	-	-	-	-	-	-	-	-	-	-
Chelsea	-	-	1	-	-	-	-	-	-	-	-	-	-
Koch's Falls	-	-	1	-	-	-	-	-	-	-	-	-	-
Oakland	-	-	2	-	-	-	-	-	-	-	-	-	-
Morgan Falls	-	-	1	-	-	-	-	-	-	-	-	-	-
The Ovens Park	-	-	-	1	-	-	-	-	-	-	-	-	-
Lunenburg	-	-	-	-	-	-	-	-	-	-	-	-	1
Eel Island	-	-	-	1	-	-	-	-	1	-	-	-	-
Sawlor Lake	-	-	-	-	-	-	-	-	-	-	-	-	1
Todd's Island	-	-	1	-	-	-	-	-	-	-	-	-	-
Big Indian Island	-	-	-	1	-	-	-	-	-	-	-	-	-
Rafter Lake	-	-	-	-	-	-	-	-	-	-	2	-	-
Moody Lake	-	-	-	1	-	-	-	-	-	-	-	-	-
Dartmouth sites	1	-	3	-	1	-	-	-	-	-	-	-	2
Preston	-	-	-	-	-	-	-	-	-	-	-	-	1
Grand Lake sites	-	-	4	1	6	4	1	7	-	-	-	-	2
Elmsdale	3	-	1	-	-	-	-	-	-	1	-	-	-

* ?=groove style unreported; A=short deep groove; B=long shallow groove; C=short shallow groove; D=long deep groove.

** A=ridged ulus; B=un-ridged ulus.

Table 3 continued: Distribution of Archaic material culture in Nova Scotia.

Site(s):	Bayonets		Axes	Gouges*					Ulus**		Atlatl	Rods	Plummets
	Broad	Narrow		?	A	B	C	D	A	B	Weights		
Sites West of the Shubenacadie Drainage:													
Enfield	1	-	-	-	-	-	-	1	2	-	-	-	1
Kinsac Lake	-	-	1	-	-	-	-	-	-	-	-	-	-
Stewiacke	-	-	2	-	-	-	-	-	-	-	-	-	-
Nine Mile Lake	-	-	-	-	-	-	-	-	-	-	-	1	-
Windsor Junction	-	-	1	-	-	-	-	-	-	-	-	-	-
Totals (n=185):	21	14	40	26	9	11	3	13	10	7	4	5	29
Sites East of the Shubenacadie Drainage:													
Little River Harbour	-	1	-	-	-	-	-	-	-	-	-	-	-
Musquodoboit	-	-	1	-	-	-	-	-	-	-	-	-	-
Chezzetcook Lake	-	-	1	-	-	-	-	-	-	-	-	-	-
Caledonia	-	-	-	2	-	-	-	-	-	-	-	-	-
Glenelg	-	-	1	-	-	-	-	-	-	-	-	-	-
St. Mary's River	-	-	1	-	-	-	1	-	-	-	-	-	-
Bayfield	-	-	-	1	-	-	-	-	-	-	-	-	-
Pomquet	-	-	-	1	-	-	-	-	-	-	-	-	-
Tracadie Harbour	-	-	1	-	-	-	-	-	-	-	-	-	-
Pictou Landing	-	-	-	1	-	-	-	-	-	-	-	-	-
Merigomish Harbour	1	-	3	-	-	-	-	-	-	-	-	-	1
Debert	-	-	2	-	-	-	-	-	-	-	-	-	-
Tatamagouche	-	-	1	-	-	-	-	-	-	-	-	-	-
New Annan	-	-	2	-	-	-	-	-	-	-	-	-	-
Wentworth	-	-	2	-	-	-	-	-	-	-	-	-	-
River Philip	-	-	-	-	-	1	-	-	-	-	-	-	-
Shiminicas River	-	-	-	1	-	-	-	-	-	-	-	-	-
Maccan	-	-	-	1	-	-	-	-	-	-	-	-	-
Tantramar Marshes	1	-	-	-	-	-	-	-	-	-	-	-	-
Cape D'or	-	-	-	-	-	-	-	-	-	-	-	-	1
Framboise Cove	-	-	1	-	-	-	-	-	-	-	-	-	-
Cow Bay	-	1	-	-	-	-	-	-	-	-	-	-	-
Paddy Gregg's Island	-	-	1	-	-	-	-	-	-	-	-	-	-
Lake Ainslie sites	-	-	-	3	1	-	-	1	-	-	-	-	1
Indian Cape	-	-	-	2	-	-	-	-	-	-	-	-	-
Margaree Forks	-	-	-	1	-	-	-	-	-	-	-	-	-
Forest Glen	-	-	-	1	-	-	-	-	-	-	-	-	-
Cape North sites	-	1	-	-	-	-	-	-	-	1	-	-	1
Totals (n=43):	2	3	15	14	1	1	1	1	0	1	0	0	4

* ?=groove style unreported; A=short deep groove; B=long shallow groove; C=short shallow groove; D=long deep groove.

** A=ridged ulus; B=un-ridged ulus.

Acknowledgements:

We are grateful to Brian Preston and Steve Davis for supplying us with unpublished documents and information on various private collections. We would also like to thank Brigitta Wallace for showing Michael Deal the fully-grooved axe from Bloody Creek. Several of the photographs were reproduced from slides by Roy Ficken, Biology Department, Memorial University of Newfoundland.

References:

Anonymous
1989 Archaeologist studies relics from "Nova Scotian Atlantis." The Evening Telegram (January 14):56. Halifax.

Black, D. W., and C. J. Turnbull
1986 Recent archaeological research in the Insular Quoddy Region, New Brunswick, Canada. Current Anthropology 27 (4): 400-402.

Black, D. W., and R. H. Whitehead
1988 Prehistoric shellfish preservation and storage on the Northeast coast. North American Archaeologist 9(1):17-30.

Bleakney, J. S., and D. Davis
1983 Discovery of an undisturbed bed of 3800 year old oysters *(Crassostrea virginia)* in Minas Basin. Proceedings of the Nova Scotia Institute of Science. 33:1-6.

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

Bourque, B.
1975 Comments on the Late Archaic populations of central Maine: the view from Turner Farm. Arctic Anthropology 12(2):35-45.

1976 The Turner Farm site: a preliminary report. Man in the Northeast 11:21-30.

Bourque, B. J., and S. L. Cox
1981 Maine State Museum investigation of the Goddard site, 1979. Man in the Northeast 22:3-27.

Brennan, L.A.
1974 The lower Hudson: a decade of shell middens. Archaeology of Eastern North America 2(1):81-93.

Connolly, J.
1977 Bear River: a collections analysis. Man in the Northeast 14:35-48.

Cox, S. L.
1991 Site 95.20 and the Vergennes Phase in Maine. Archaeology of Eastern North America 19:135-161.

Christianson, D.
1985 Archaeology and Lake Rossignol. Mersey Quarterly (Winter):8-9.

Davis, S. A.
1980 Coastal Erosion, Neglect, Disinterest Threatening Maritime archaeology and resources. In Proceedings of the 1980 Conference on the Future of Archaeology in the Maritimes, edited by D. Shimabuku, pp. 6-17. Saint Mary's University, Department of Anthropology, Occasional Papers in Anthropology 8. Halifax.

1983 Rising sea levels threaten archaeological sites. Canadian Geographical Journal 103(2):40-46, Ottawa.

1987a Man, Molluscs and Mammals: A Study of Land Use and Resources in the Late Holocene of the Maritime Provinces of Canada. D.Phil. thesis, University of Oxford, Oxford, England.

1987 Final report, Heritage Research Permit Archaeology 1987NS-7. Ms., on file, History Section, Nova Scotia Museum, Halifax.

1991a Personal Communication concerning Archaic sites and materials in Southwestern Nova Scotia.

1991b Yarmouth County survey. In Archaeology in Nova Scotia, 1987 and 1988, edited by S. A. Davis, C. Lindsay, R. Ogilvie and B. Preston, pp. 69-88. Nova Scotia Museum, Curatorial Report 69. Halifax.

Davis, S. A., and D. Sanger
1991 Preliminary report on the Bain site and the Chegoggin archaeological project. In Archaeology in Nova Scotia, 1987 and 1988, edited by S. A. Davis, C. Lindsay, R. Ogilvie and B. Preston, pp. 165-171. Nova Scotia Museum, Curatorial Report 69. Halifax.

Deal, M.
1984 Archaeological significance of the Chiputneticook-St. Croix Drainage System. Ms., on file, Archaeology Branch, Department of Tourism, Recreation and Heritage, Fredericton.

1986 Late Archaic and Ceramic period utilization of the Mud Lake Stream site, southwestern New Brunswick. Man in the Northeast 32:67-94.

1991a The Minas Basin Archaeological Project: reports for 1988-1991. Nova Scotia Museum, Curatorial Report, in preparation.

1991b Western North Shore Survey 1991: archaeology of Tatamagouche Bay and vicinity. Ms. on file, Nova Scotia Museum, Halifax.

Deal, M., J. Corkum, D. Kemp, J. McClair, S. McIlquham, A. Murchison, and B. Wells
1987 Archaeological investigations at the Low Terrace site (BaDg2), Indian Gardens, Queens County, Nova Scotia. In Archaeology in Nova Scotia, 1985 and 1986, edited by S. A. Davis, C. Lindsay, R. Ogilvie and B. Preston, pp. 149-228. Nova Scotia Museum, Curatorial Report 63. Halifax.

Dincauze, D.
1976 The Neville site. Peabody Museum Monographs 4. Harvard University, Cambridge.

Dincauze, D., and M. T. Mulholland
1977 Early and Middle Archaic site distributions and habitats in southern New England. In Amerinds in Northeastern North America, edited by W. S. Newman and B. Salwen, pp. 439-456. The New York Academy of Sciences, Annals 288. New York.

Erskine, J.S.
1960 Shell-heap archaeology of southwestern Nova Scotia. Proceedings of the Nova Scotian Institute of Science 24(4):339-375.

1964 Micmac Notes, 1964. Ms., on file, History Section, Nova Scotia Museum, Halifax.

1967 Gaspereau Lake site, Kings County, N.S. Ms. on file, History Section, Nova Scotia Museum, Halifax. (A revised version will appear as Appendix A, in Deal 1991a).

1969a Prehistoric Indian campsites in Nova Scotia, known to J. S. Erskine. Ms. on file, History Section, Nova Scotia Museum, Halifax.

1969b A summary of known Indian campsites or probabilities. Ms. on file, History Section, Nova Scotia Museum, Halifax.

1969c Early cultures of Nova Scotia. I. A preliminary prehistory. Nova Scotia Museum, Halifax.

1969d Early cultures in Nova Scotia: II, Laurentian Period, 4000-1000 B.C. Journal of Education 18:18-26. Halifax.

1970 Early cultures in Nova Scotia: V, Cape Breton. Journal of Education 19:4-36. Halifax.

n.d.a. Notes on Archaic tools in Nova Scotian sites. Ms., on file, Archaeology Unit, Memorial University of Newfoundland, St. John's.

n.d.b. Memoirs on the Prehistory of Nova Scotia, 1957-1967. Ms., on file, Nova Scotia Museum, Halifax.

Ferguson, R. S. O.
1986 Archaeological sites in the Kejimkujik National Park, Nova Scotia. Ms., on file, Environment Canada, Parks, Halifax.

Ferguson, S. A. (Compiler)
1983 Geological Map of the Hantsport area Nova Scotia. Nova Scotia Department of Mines and Energy, Map 83-1, Halifax.

Gilpin, J.B.
1873 On the stone age of Nova Scotia. Transactions of the Nova Scotian Institute of Natural Science 3:220-231.

Keenlyside, David
1984 Ulus and spearpoints: two archaeological finds from Prince Edward Island. The Island Magazine 16(Fall-Winter):25-27.

Kemp, D.
1987 Groundstone analysis: Low Terrace and Raddall Collections. In, Archaeological investigations at the Low Terrace site (BaDg2) Indian Gardens, Queens County, Nova Scotia, by M. Deal, J. Corkum, D. Kemp, J. McClair, S. McIlquham, A. Murchison and B. Wells. Nova Scotia Museum, Curatorial Report 63:201-213.

Murphy, B.
1997 Researching the early holocene of the Maritime Provinces. Papre presented at the Annual Meeting of the Canadian Archaeological Association, Saskatoon.

1998 Cultural manifestations of the early holocene in the Maritime Provinces. MA thesis, Department of Anthropology, Memorial University of Newfoundland, St. John's. In preparation.

Myers, B.
1973 Archaeological Survey of Kejimkujik National Park, Nova Scotia, 1972. Parks Canada, Manuscript Report Series 106. Ottawa.

Nash, R. J.
1978 Prehistory and cultural ecology - Cape Breton Island, Nova Scotia. In Papers from the Fourth Annual Congress of the Canadian Ethnology Society, edited by R. J. Pearson, pp. 131-155. Canadian Ethnology Service Paper 40. Ottawa.

1990 Melanson: a large Micmac village in Kings County, Nova Scotia. Nova Scotia Museum Curatorial Report 67. Halifax.

Patterson, G.

1890 The stone age in Nova Scotia, as illustrated by a collection of relics presented to Dalhousie College. Nova Scotia Institute of Natural Science, Proceedings and Transactions 7(3):231-252.

Petersen, J.

1991 Archaeological testing at the Sharrow site: a deeply stratified early to late holocene cultural sequence for central Maine. Occasional Publications in Maine Archaeology 8, Augusta.

Petersen, J., and D. Putnam

1992 Early holocene occupation in the central Gulf of Maine region. In Early holocene occupations in northern New England, edited by B. Robinson, J. Petersen, and A. Robinson, pp. 13-62. Occasional Publications in Maine Archaeology 9, Augusta.

Piers, H.

1890 Aboriginal remains of Nova Scotia, illustrated by the provincial museum collections. Transactions of the Nova Scotian Institute of Natural Science 7:276-290.

1895 Relics of the stone age in Nova Scotia. Transactions of the Nova Scotian Institute of Natural Science 9:26-58.

1911 Provincial Museum and Science Library. In Province of Nova Scotia, Report of the Department of Mines 1910, pp. 194-220. Kings Printer, Halifax.

Preston, B.

1974 An archaeological survey of the Shubenacadie River System, Nova Scotia. Nova Scotia Museum, Curatorial Report 18, Halifax.

1991 Notes on Archaic materials report to or found in the Nova Scotia Museum Collection. Ms., on file, Archaeology Unit, Memorial University of Newfoundland, St. John's.

Ritchie, W. A.

1980 The Archaeology of New York State (revised edition). Harbour Hill, Harrison Hill, New York.

Robinson, B.

1992 Early and Middle Archaic period occupation in the Gulf of Maine region: mortuary and technological patterning. In Early holocene occupations in northern New England, edited by B. Robinson, J. Petersen, and A. Robinson, pp. 63-116. Occasional Publications in Maine Archaeology 9, Augusta.

1996 A regional analysis of the Moorehead Tradition: 8,500-3,700 B.P. Archaeology of Eastern North America 24:95148.

Rossignol Survey

1985 Nova Scotia Museum Archaeological Specimen Records for 1985 Survey of Lake Rossignol. Ms., on file, History Section, Nova Scotia Museum, Halifax.

Sanger, D.

1973 Cow Point: an Archaic Cemetery in New Brunswick. National Museum of Man, Archaeological Survey of Canada, Mercury Series, Paper 12. Ottawa.

1975 Culture change as an adaptive process in the Maine-Maritimes region. Arctic Anthropology 12(2): 60-75.

1979 Some thoughts on the scarcity of Archaeological sites in Maine between 10,000 and 5,000 years ago. In Discovering Maine's Archaeological Heritage, edited by D. Sanger, pp. 23-34. Maine Historical Preservation Commission, Augusta.

1988 Maritime adaptations in the Gulf of Maine. Archaeology of Eastern North America 16. In press.

1991a Early and Middle Archaic cultures in the Maritime Provinces. Abstracts for the Annual Meeting of the Canadian Archaeological Association, edited by R. Pastore, p. 48. Government of Newfoundland and Labrador, St. John's.

1991b Cow Point revisited. In Archaeology in the Maritime Provinces: past and present research, edited by M. Deal. Council of Maritime Premiers, Fredericton.

1996 Gillman Falls site: implications for the Early and Middle Archaic of the Maritime Peninsula. Canadian Journal of Archaeology 20:7-28.

Sanger, D., D. W. Belcher, and D. Kellogg

1992 Early holocene occupation at the Blackman Stream site, central Maine. In Early holocene occupations in northern New England, edited by B. Robinson, J. Petersen, and A. Robinson, pp. 149-162. Occasional Publications in Maine Archaeology 9, Augusta.

Sanger, D., and D. F. Belknap

1987 Human responses to changing marine environments in the Gulf of Maine. Papers of the Chacmool Conference, pp. 245-261. University of Calgary.

Sanger, D., R. B. Davis, R. G. MacKay, and H. W. Borns, Jr.

1977 The Hirundo Archaeological Project - an interdisciplinary approach to central Maine prehistory. In Amerinds and their Paleo-Environments, edited by W.S. Newman and B. Salwen, pp. 457-471. Annals of the New York Academy of Sciences 288.

Sanger, D., and S. A. Davis
1991 Preliminary report on the Bain site and the Chegoggin Archaeological Project. In Archaeology in the Maritime Provinces: past and present research, edited by M. Deal. Council of Maritime Premiers, Fredericton.

Sanger, D., and D. C. Kellogg
1989 Prehistoric archaeology and evidence of coastal subsidence on the coast of Maine. In Neotectonics in Maine, edited by W. A. Anderson and H. W. Borns, pp. 107-126. Maine Geological Survey, Augusta.

Simonsen, B.
1978 Attrition of Coastal Archaeological Resources in the Maritime Provinces of Canada. Council of Maritime Premiers, Reports in Archaeology 2, Fredericton.

1979 Attrition of Coastal Archaeological Resources in the Maritime Provinces of Canada: a Management Study. Council of Maritime Premiers, Reports in Archaeology 3. Fredericton.

Smith, B. L.
1948 An analysis of the Maine Cemetery Complex. Bulletin of the Massachusetts Archaeological Society 9(2/3). Attleboro.

Smith, H. I., and W. J. Wintemberg
1929 Some Shell-heaps in Nova Scotia. National Museum of Canada Bulletin 47. Ottawa.

Snow, D. R.
1975 The Passadumkeag sequence. Arctic Anthropology 12(2): 46-59.

Spiess, A. E., B. J. Bourque, and S. Cox
1983 Cultural complexity in maritime cultures: evidence from Penobscot Bay, Maine. In The evolution of maritime cultures on the Northeast and Northwest coasts of America, edited by R. Nash, pp. 91-108. Department of Archaeology, Simon Fraser University, Publication 11, Burnaby.

Spiess, A. E., B. J. Bourque, and R. M. Gramly
1983 Early and Middle Archaic site distribution in western Maine. North American Archaeologist 4(3):225-244.

Stewart, K. D.
1984 Oyster. Underworld World Series, Fisheries and Oceans, Ottawa.

Tuck, J. A.
1971 An Archaic cemetery at Port au Choix, Newfoundland. American Antiquity 36:343-357.

1975 The northeastern maritime continuum: 8,000 years of cultural development in the far

northeast. Arctic Anthropology 12(2):139-147.

1976 Ancient People of Port au Choix. Memorial University of Newfoundland, Institute of Social and Economic Research, Newfoundland Social and Economic Studies 17. St. John's.

1984 Maritime Provinces Prehistory. National Museum of Man, Ottawa.

Turnbull, C. J.
1988 Reflections on a ground slate bayonet from the Tantramar Marsh, Upper Bay of Fundy. Canadian Journal of Archaeology 12:87-107.

Turnbull, C. J., and D. W. Black
1988 The slate ulu from Whitehorse Island. In Bliss revisited: preliminary accounts of the Bliss Islands Archaeology Project Phase II, edited by D. W. Black, pp. 73-79. New Brunswick Department of Tourism, Recreation and Heritage, Manuscripts in Archaeology 24E. Fredericton.

Willoughby, C. C.
1935 Antiquities of the New England Indians. Peabody Museum of American Archaeology and Ethnology. Harvard University, Cambridge.

Wright, J. V.
1962 A distributional study of some Archaic traits in southern Ontario. National Museum of Canada, Bulletin 180:124-142. Ottawa.

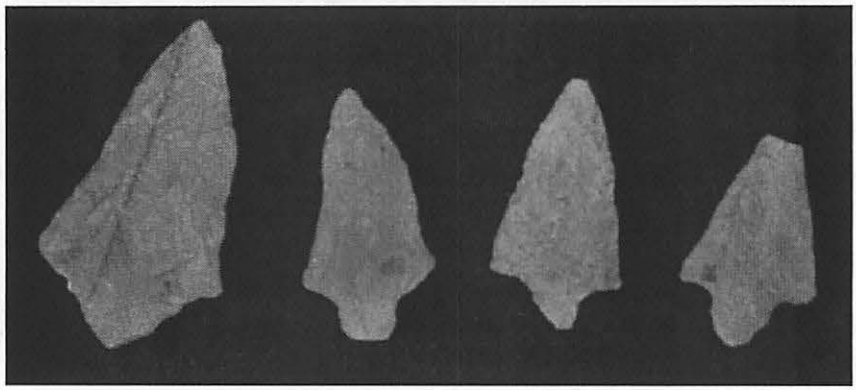


Plate 1: Middle Archaic contracting stem projectile points from the Erskine site (BfDd-5/6), Gaspereau Lake, Kings County. Photo by John Erskine.

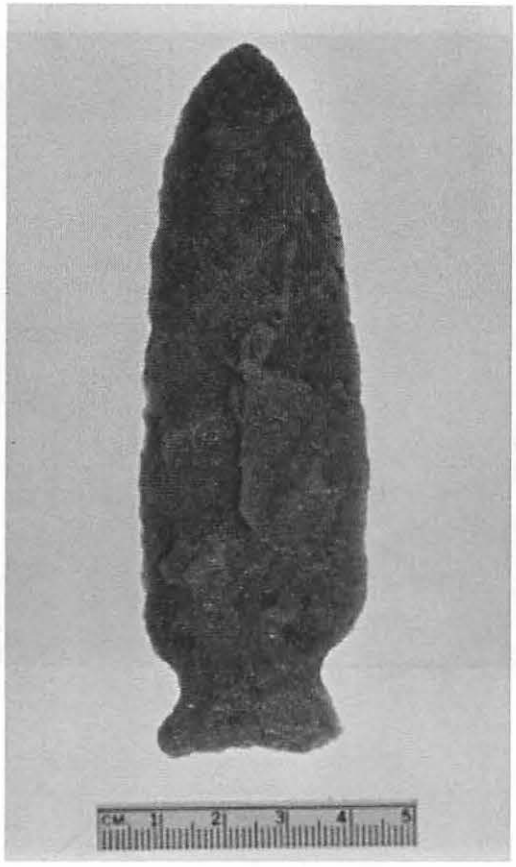


Plate 2: Large side-notched Laurentian Archaic projectile point from Scots Bay, Kings County. Nova Scotia Museum Photo.

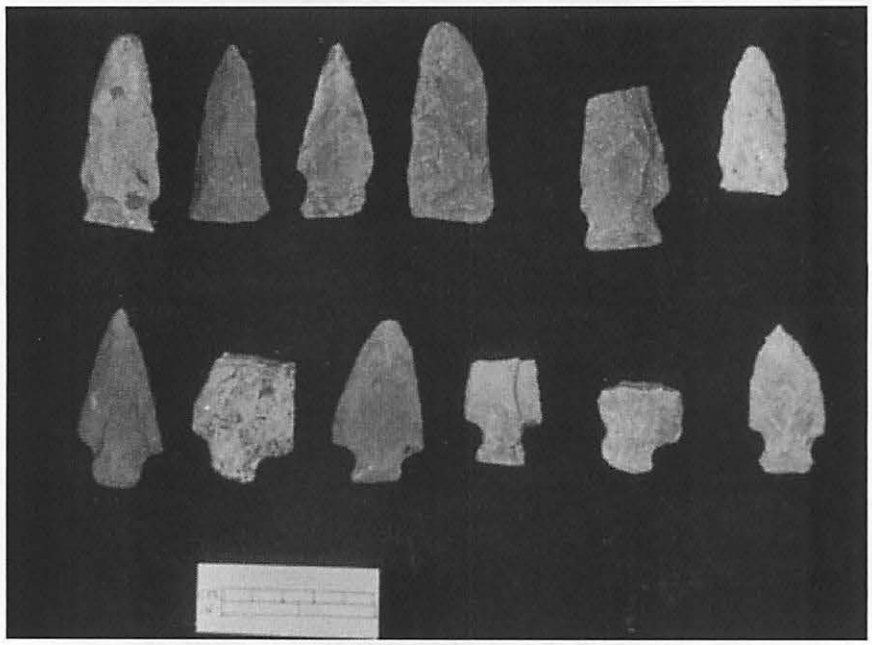


Plate 3: Late Archaic eared (top row) and broad bladed (bottom row) projectile points from the Erskine site, Gaspereau Lake, Kings County. Photo by John Erskine.

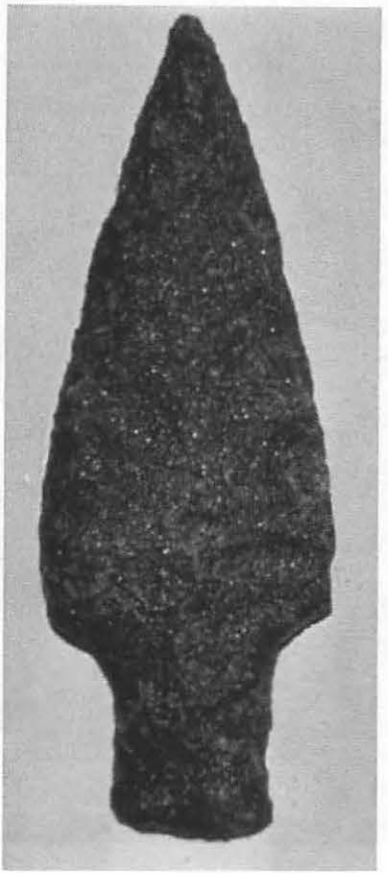


Plate 4: Late Archaic narrow stemmed projectile points from site BfDd-3, Gaspereau Lake, in Jim Legge Collection. Photo by Michael Deal.

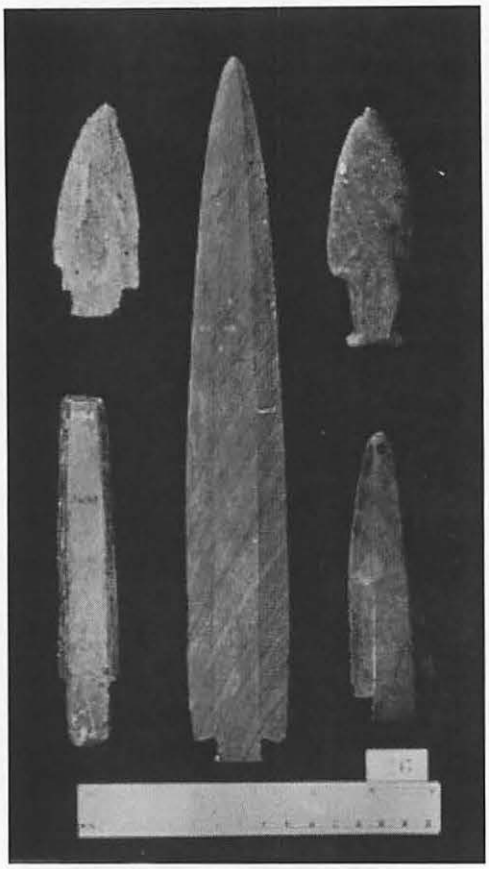


Plate 5: Slate bayonets in the Nova Scotia Museum Collection. The specimen on the lower left represents the long narrow bladed style. The large specimen in the centre is from Milton, Queens County. It represents the large subclass of the broad bladed bayonet, while the remaining specimens are examples of the small version of this style. Photo by John Erskine.

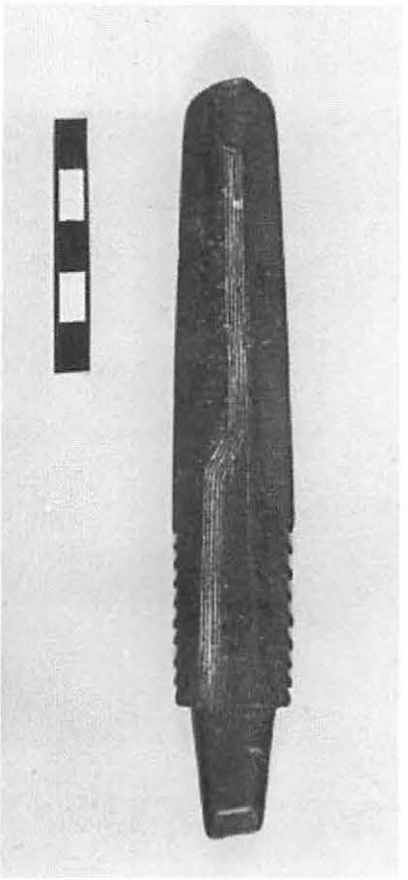


Plate 6: Narrow bladed slate bayonet from Indian Gardens, Queens County, Nova Scotia Museum Collection. Note linear incised decoration and notching along lower blade. Nova Scotia Museum Photo.

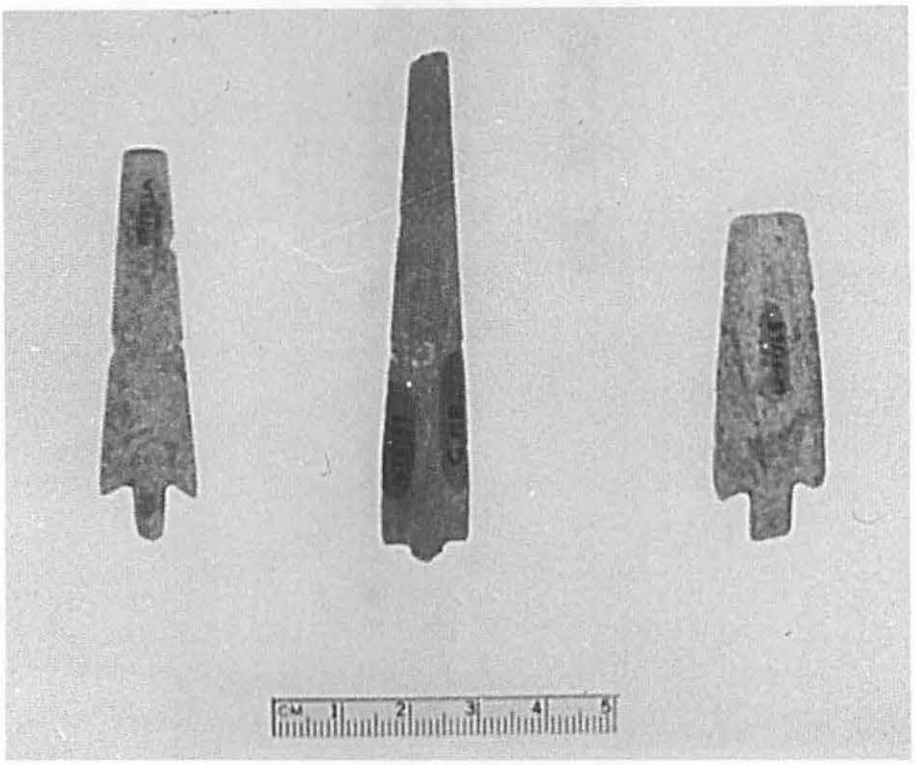


Plate 7: Late Archaic slate projectile points from Barren Lake, southwestern Nova Scotia, in Wilbur Sollow's Collection. This photo is an enlargement of the lower row of artifacts in Plate 2, Davis 1991b.

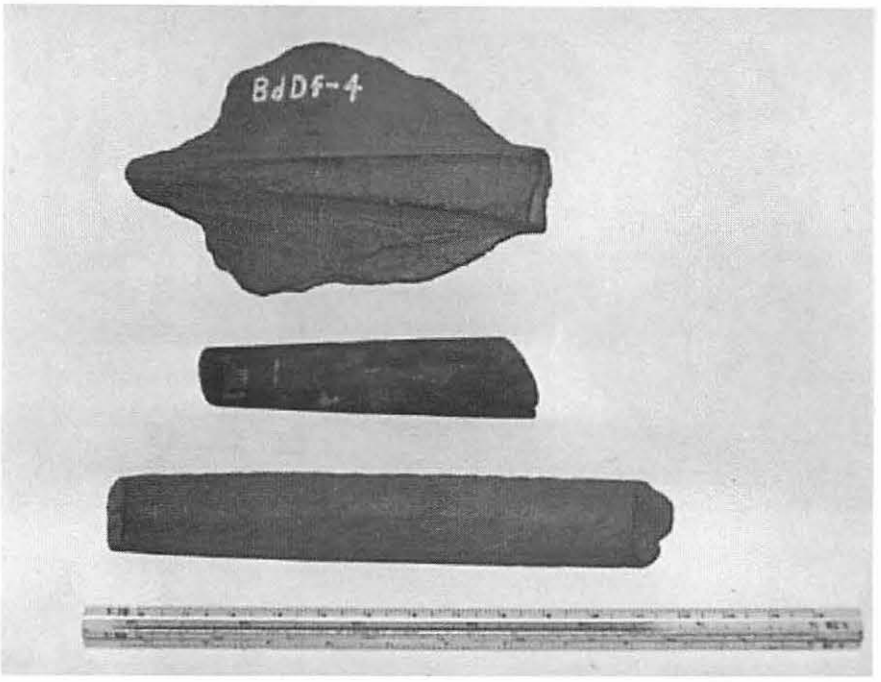


Plate 8: Selected specimens from the Jim Legge Collection, from site BfDd-4, Gaspereau Lake, including Upper: portion of winged atlatl weight; Middle: tip of narrow bladed bayonet; Lower: section of rod. (Note that Borden number on atlatl weight is incorrect). Photo by Michael Deal.

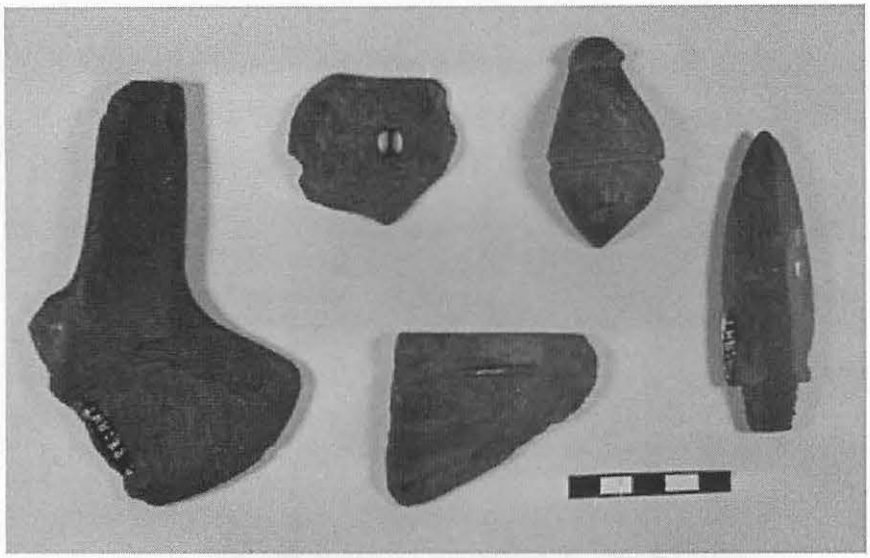


Plate 9: Selection of artifacts from the Thomas Raddall Collection, from Indian Gardens, Queens County, including Left: contracting stemmed ulu; Lower Centre: one half of an un-ridged ulu with hafting perforation; Upper Left: gorget fragment; Upper Right: plummet with two suspension grooves; Right: small broad bladed bayonet. Photo by Laird Niven.

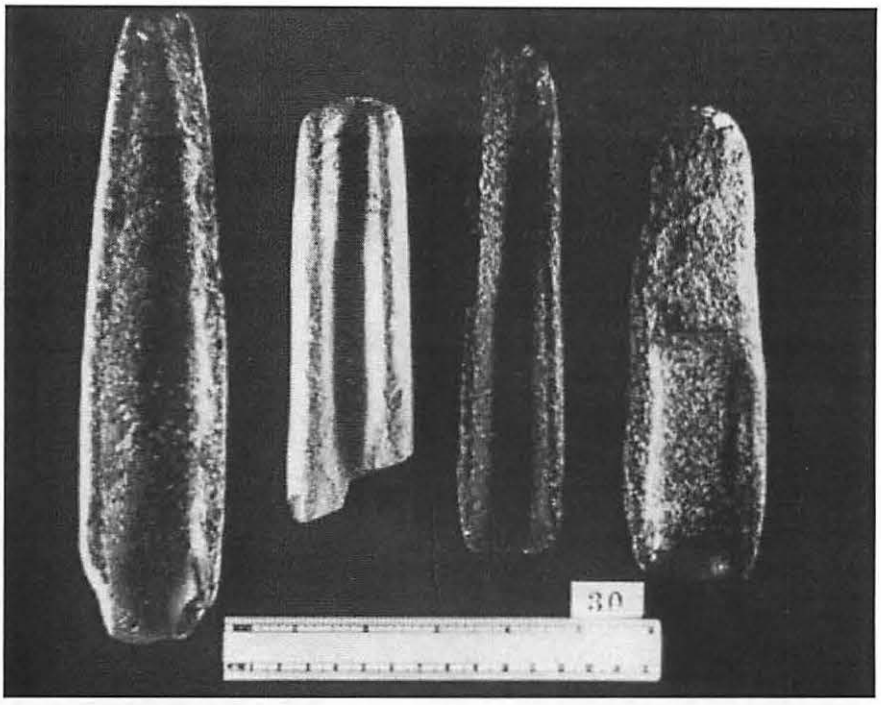


Plate 10: Gouges in the Nova Scotia Museum Collection. The specimen on the right represents the short deep grooved style, while the remaining specimens are examples of the long deep grooved style. Photo by John Erskine.

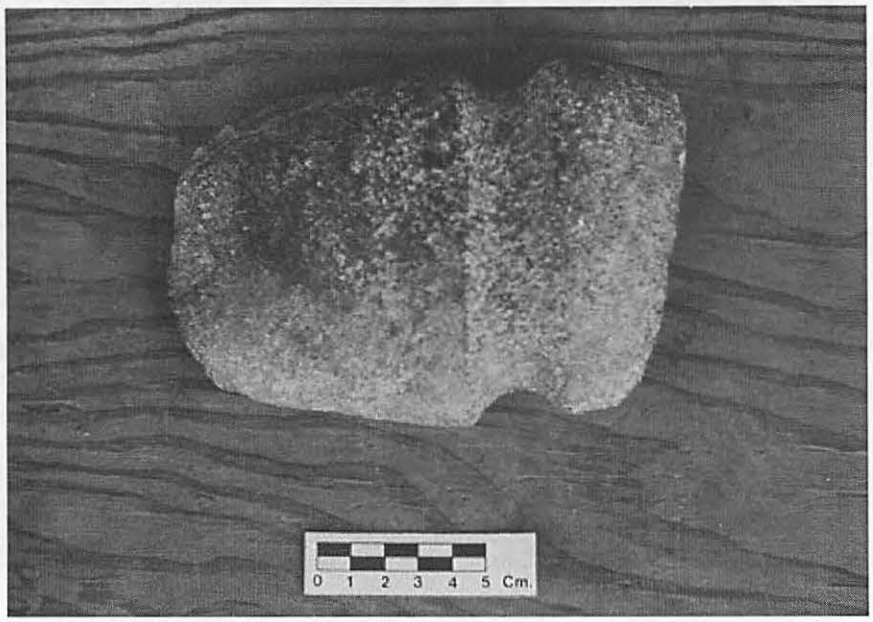


Plate 11: Fully grooved axe from Bloody Creek, Annapolis County. Note damage on head and blade. Photo by Michael Deal.

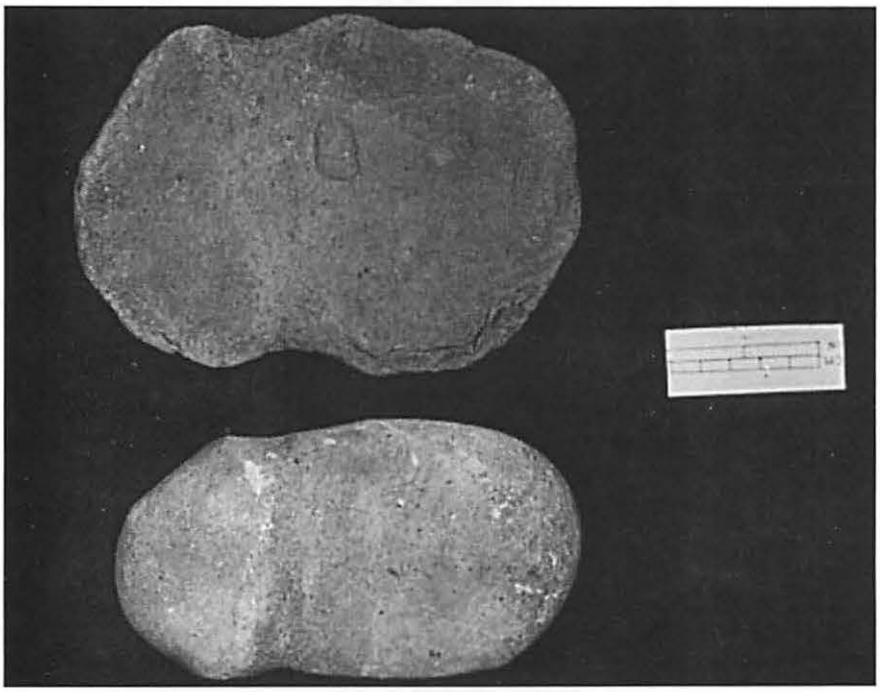


Plate 12: Fully grooved axes from the Erskine site, Gaspereau Lake. Photo by John Erskine.

Plate 13: Elongated style of fully grooved axe, from Canning, Kings County. Nova Scotia Museum Photo.

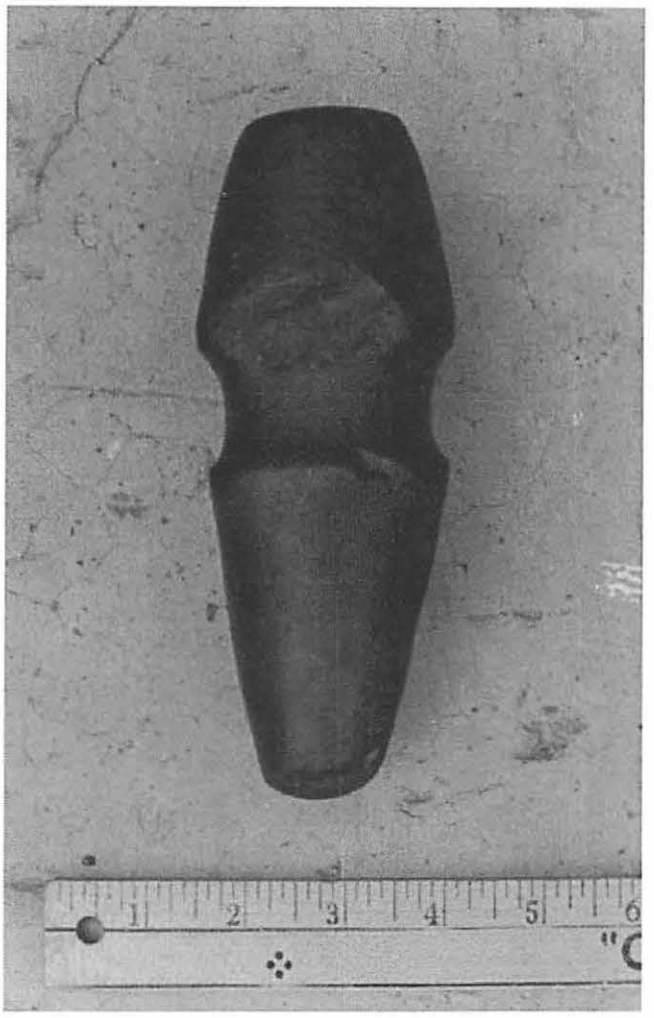


Plate 14: Three-quarter grooved axe from Melanson, Kings County, in the Ellis Gertridge Collection. Photo by Michael Deal.