Fort Lennox, Quebec

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The Archaeology of Fort Lennox, Ile-aux-Noix, Quebec, 1964 Season

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PARKS CANADA
DEPARTMENT OF INDIAN AND NORTHERN AFFAIRS
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Abstract

During the 19th century numerous buildings were built outside the area occupied since 1819 by Fort Lennox on Ile-aux-Noix, Quebec. These buildings include a bakehouse, a Royal Engineers store, brick sheds, a lime shed and kiln, a straw shed, a cookhouse, and garrison hospital. Other buildings or features also depicted on 19th-century plans of the island show a carpenter's shop, a gun shed, barracks, stable, forge, engine house, cemetery and others. In other words, Ile-aux-Noix, when garrisoned with troops and/or naval personnel, was a fairly self-sufficient working military community equipped to meet industrial, medical and other requirements.

The following report presents the results of archaeological research carried out by the National Historic Parks and Sites Branch in 1964 on 11 buildings/areas to the north of Fort Lennox: the 18th-century English fort (5G7), the garrison hospital (5G3, 11), the hospital cooking house (5G4), the garrison bakehouse (5G12, 15, 18), the barracks (5G14), the gun shed (5G6, 9), the ordnance store (5G13, 16), the forge and smith's shop (5G19), a lime kiln area (5G20), a well area (5G17), and a possible canteen - root house area (5G10). All are of 19th-century date with the exception of the English fort.

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During the late spring and summer of 1964 an archaeological field school was conducted on Ile-aux-Noix, Quebec, by the National Historic Parks and Sites Branch, Parks Canada, under the supervision of the author, Marshall Becker and Ian Rodger. The program had two main objectives: to train Canadian students in archaeological field and laboratory procedures, and as part of the training process, to excavate as many 18th-century and/or 19th-century structures as possible in the area north of Fort Lennox on Ile-aux-Noix. Both objectives were achieved. Fourteen students enrolled in the field school and received instruction in basic archaeological techniques. The students were: Bruce Batchelor, Micheline Bouchart d'Orval, Mary Cherry, Louis Chevrette, Judy Chute, Karalee Coleman, Pierre Hébert, James Moscovich, Christopher Turnbull, Bryan Visser, Elizabeth Wylie, and Carole Yawney.

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With the exception of the historical illustrations from the Public Archives of Canada, the line drawings were done by the author and the sewer reconstruction drawings (Figs. 8-11) by Pierre Hebert. The artifact photographs (Figs. 107-135) were taken by Michael Siede; all other photographs were taken by members of the 1964 field crew.

Last but not least, my wife Anne deserves my gratitude for her support of and assistance with the project.
History of Ile-aux-Noix

Ile-aux-Noix, because of its strategic location in the Richelieu River valley, was important to the armies of New France, Great Britain and the United States in the 18th and 19th centuries. (This historical summary is based on Lee 1965.)

The French became involved with Ile-aux-Noix in 1759 when they built a fort on the island for the purpose of controlling water communication between Lake Champlain and the St. Lawrence River. The French thereby hoped to prevent or retard any English attacks against Montreal. However, in August 1760 the English were able to force the French to evacuate the island. The English, under Amherst, later destroyed the French fortifications on the island. By the summer of 1761 Ile-aux-Noix was empty.

Ile-aux-Noix became important again during the years of the American Revolution. Americans used the island on several occasions. It later served as a base for the major expeditions of Carleton and Burgoyne.

An American force under Major General Philip Schuyler, assisted by Brigadier General Richard Montgomery, arrived at Ile-aux-Noix on 5 September 1775. Schuyler's objective was to enlist Canadian help to attack Montreal. Using Ile-aux-Noix as a base, Montgomery soon captured St. Jean, Chambly and Montreal. A raging smallpox epidemic and the advancing English made the Americans decide to evacuate Ile-aux-Noix for Crown Point in the summer of 1776.

The English seriously set about fortifying Ile-aux-Noix in order to prevent American penetrations into Canada. By 1779 the island was considered secure against any short-term attack. By 1782 the British began to build stronger fortifications on the island. Apparently the defensive works were never finished and were allowed to go to ruin after the war. By 1809 Ile-aux-Noix had been abandoned.

Ile-aux-Noix was reoccupied in 1812 to serve the British in their struggle with the United States. The Lake Champlain-Richelieu River approach made Montreal still vulnerable to American invasion. The island was also well suited for launching attacks on Vermont and New York. The old earthworks and redoubts on Ile-aux-Noix were put into order.
Ile-aux-Noix soon became the Canadian centre of a naval arms race to control Lake Champlain. A shipyard was constructed in 1813-14, as were naval barracks, a hospital and storehouses. Numerous gunboats were built at Ile-aux-Noix.

In peacetime the British felt obliged to maintain the island fortifications against possible future American incursions and especially to protect the naval yard. By circa 1819, the British began to construct a large fort on Ile-aux-Noix, to be called Fort Lennox, which actually took nearly ten years to build. However, as time passed, less and less attention was paid to Fort Lennox and Ile-aux-Noix. In 1834 the naval station was closed. The number of troops on the island gradually decreased. By 1858 the island and its buildings were taken over for service as a reformatory for juveniles.

The threat of American reprisals after the "Trent Affair" resulted in the reoccupation of Ile-aux-Noix in 1861-62. The buildings and works of Fort Lennox were repaired, but repairs were not completed until 1866. Soon after this, in 1870, Ile-aux-Noix was abandoned. It was not used as a military base again.
The Old English Fort

The British fort built on Ile-aux-Noix between 1780 and 1783 had adapted earlier French earthworks into a smaller, more easily defended fortification. The fort included glacis, covert way and ditch. Inside them were several buildings which are shown in the same positions on maps of 1783, 1789, 1809 and 1814; however, only on one map (1814) are the buildings labelled as to use. These include the following which would be situated outside the present fort: a commissary store, barracks, officers' quarters, magazine, privies, mess house and a guardhouse. This fort was removed around 1819 to be replaced by the larger Fort Lennox (Lee 1966).

Forty-one excavation trenches of various sizes were dug in 1964 in the grid area 80N-50S, 290W-420E. It was necessary to remove up to 7 ft. of overburden in the south portions of the excavations due to the glacis of Fort Lennox. Structural and artifact evidence was found for the 18th-century fort although the limited time available did not permit adequate or complete excavation so that final interpretation of the remains is not possible.

The structural remains found were as follows: the stone foundation walls of a building, a gravel area or pavement with associated beams or logs, and a drainage-sewer system (Fig. 5).

The Building
A long narrow building, oriented northeast-southwest, was partially exposed. The northwest, northeast and southeast corners and portions of the east wall were excavated, revealing a stone foundation wall laid on clay and sand, 3 ft. below ground surface (Figs. 5, 12, 13). It should be noted that ground level varies in the area because of the earthworks of Fort Lennox. The wall averaged 2 ft. in width and 1.5 ft. of wall remained standing, the stones laid together with mortar.

The building measured 110 ft. by 18 ft. From its size and orientation, one can reasonably presume this building to be the "commissary store" of the late 18th-century British fort.
Approximately 15 ft. to 30 ft. to the east of the stone building was found a complex of features: a gravel pavement, a sewer and a drain.

Gravel Pavement
A thin (0.5 ft.) layer of gravel, approximately 1.0 ft. to 2 ft. below the present ground surface, extended over a maximum horizontal area of 65 ft. square although the exact limits were not delineated. Immediately upon this gravel was found the remains of approximately 22 wooden beams or planks, in various stages of preservation, lying in a roughly north-south direction, parallel with but not necessarily equally spaced from one another. The longest beam measured circa 9 ft. in length. Fragments of beams were also found to the immediate west of the gravel area (Figs. 6, 15, 16).

Sewer System
Immediately to the west of the main group of beams and situated near the supposed western edges of the gravel pavement was a stone drain which was situated nearly parallel with the foundations of the commissary and circa 30 ft. to the east. The drain was traced for a distance of nearly 50 ft. In most cases the gravel layers abut the west and east edges of the drain and are at the same level as the drain surface. The drain itself, lying at angles with the wood beams, is 2.4 ft. wide, made of a single course of small stones with a central line of bricks on the interior, bounded by larger flat stones which form the edges (Figs. 17, 18).

The south end of the stone drain stops where an east-west oriented wooden sewer begins (Fig. 1). This wooden sewer was in a remarkable state of preservation due to the extremely wet clay in which it was imbedded. The sewer consisted of two basic parts: an inlet box covered with an iron grill and a carefully constructed tunnel-like structure through which water and/or waste materials flowed (Figs. 7-11, 19-25).

The inlet box was found in a collapsed state, as was the sewer in general, approximately 2 ft. to 3 ft. below the level of the gravel layer and stone drain. Because of the presence of the iron grill, it must be assumed that the top of the inlet box was originally at gravel or ground surface level in the late 18th century, probably slightly below the level of the stone drain from which it received water or waste. Thus the inlet box must have originally been 2 ft. to 3 ft. in height, that is, 2 ft. to 3 ft. of space between the grill and the top of the tunnel section of the sewer.
The iron grill or grating was composed of nine flattened and closely-spaced iron bars flanked on two sides by parallel hinges attached to pintles, enabling the grill to be swung open at one side (Figs. 19-20). The iron bars measured 1.75 ft. in length with a diameter of circa 0.1 ft. The terminal ends of each bar were thin and flat and of a rounded spatula-shape with a nail hole in the middle. Each bar was nailed to wood with one nail at each end. The entire inlet box measured circa 1.9 ft. square.

The main sewer was well constructed of dressed wood logs and planks. Only 10.4 ft. of sewer was excavated, but it seems very probable that the sewer continued to the east, but not to the west as the western end of the sewer is vertically walled, that is, not open (Fig. 2). As is shown in Figures 8 to 11 and 19 to 25, the sewer system was probably built in 8-ft. sections, the various sections being joined together by a slotted wooden upright. The floor of the sewer was made of short, circular logs (0.4 ft. to 0.6 ft. in diameter) flanked on each side by larger (0.75 ft. in diameter, 10.4 ft. in length) logs. Slotted uprights (circa 0.6 ft. square) were set into the edge basal logs, circa 8 ft. apart. Four dressed logs, bevelled at opposite edges with morticed ends, were stacked upon each other and fitted into the slotted uprights. The top surface or roof of the sewer was formed by horizontal planking and logs. The entire sewer, as found, measured circa 10.4 ft. in length by circa 3 ft. square.

With the very limited amount of excavation carried out, one can only speculate as to how the stone drain and wooden sewer were used. One question immediately comes to mind. The complimentary position of the stone drain to the wooden sewer (that is, the stone drain ends and leads to the opening or grill of the sewer) certainly implies contemporaneity between the two. One wonders then why the drainage or sewer system was not entirely above ground as an above-ground system would have been much easier to construct than an underground system. With a partially above-ground system, one would think that waste materials would not be the drainage involved. Perhaps the underground sewer extended beneath a structure of some sort while the ground-level stone drain immediately flanked a structure, being a receptacle for roof rainwater runoff. However, no clear archaeological evidence for such a structure was found in the immediate vicinity of the sewer with the possible exception of the wooden beams found lying on the gravel pavement.

Trench
The final feature to be discussed are two ditches/trenches which postdate the features previously discussed. A shallow
trench of grey earth circa 6 ft. in width was found in the eastern portions of the excavations. A smaller trench (circa 2 ft. wide) connects with this trench and runs at right angles toward the west for a distance of circa 80 ft. The north-south trench cuts into the gravel pavement. The smaller east-west trench cuts into and thus postdates the gravel, the stone drain and the east wall of the supposed commissary store (Figs. 14, 18).

The age and function of the trench are not known.

Artifacts
Of the datable 18th-century artifacts found on Ile-aux-Noix during 1964, the majority were found in the fort area excavations. Many were found in the topsoil as the construction of Fort Lennox and possible later disturbances have in many cases disrupted the stratigraphy of the area. Late 18th-century artifacts include numerous free-blown glass wine bottles, feather-edged creamware, tin-glazed earthenware, a fine silver spoon, clay smoking pipes, shoe buckles and several buttons, including one from the Royal Provincial (circa 1776-83).

The majority of artifacts found in the area were, however, 19th century in date.

Structural Hardware
Brace or Bracket. A wrought-iron strap with fastening holes at one end.
Grating. A complete sewer grating (see above).
Hinges. A butterfly hinge, folded, measures 4.5 cm by 3 cm (Fig. 127g); also one fragment of an HL hinge.
Key. A fragment of an iron key, with an oval bow twisted out of shape and a tooled solid shank (Fig. 131a).
Latch. One latch of the bar type, with one end circular and flat, rivet hole in centre.
Lock. A rectangular flat lock plate, iron, with two of the four corners truncated; plate measures 6.8 cm by 6.2 cm and has eight holes for fastening.
Pintle. Three pintles made of one piece of wrought iron measure 10 cm to 13 cm in length (Fig. 127a).
Staple. One U-shaped staple, wrought iron.

Household - Maintenance and Repair
Pin. One brass straight pin with a flat head.

Household - Furnishings
Lock. A fragment of an iron chest lock.
Household - Food

Bottles. Glass wine bottles made by the free-blown technique predominate and seem to date by shape to the fourth quarter of the 18th century. One bottle fragment has the date "1779" pecked into the side. Two-hinge mould bottle glass is also present in the upper levels of the excavated area.

Fork. Two forks with rat-rail tang and two tines (Fig. 116a).

Knife. A table knife with a straight-backed blade and rat-rail tang for handle attachment; on one side of the blade the letters BE?? are stamped perpendicular to the blade length (Fig. 117b). Two folding knives, both with pistol-grip, bone-covered handles, were found. One knife has the word DIXON stamped on one side of the blade (Fig. 117f, g).

Pottery. Eighteen varieties of pottery were found, including 18th-century creamware plates, white salt-glazed stoneware, black basaltes ware, a green-glazed redware and tin-glazed earthenware. Nineteenth-century ceramics found in the area include black-glazed redware, mocha ware, a variety of pearlware vessels, including non-decorated flatware, blue handpainted ware, delicate-painted, sponged, gaudy-Dutch, "annular" ware, shell-edged plates and transfer-printed earthenware. Brown to grey stoneware blacking vessels and a few porcelain sherds were also recovered (Figs. 109-115).

Spoons. A fine silver spoon measures 11.6 cm in length and has the single letter P impressed on the back of the upper handle as well as the maker's mark TW and "Lyon Passenth" in relief at the narrowest part of the handle back. The initials possibly refer to Thomas Wynne, 1754, London, or Thomas Wallis, 1758, London. "Lyon Passenth" denotes a sterling alloy of 92.5 silver and 7.5 copper. The spoon probably dates to the circa 1765-70 period (Fig. 118).

Other spoons, all fragmentary, include two complete oval bowls made of iron (Fig. 117h) and a bowl-handle fragment of tinned iron; the flat handle of this spoon expands toward the terminal end.

Stemware. Twelve glass vessel fragments of three types were found in the area:

a) nine vessels each have a conical, folded foot, a stem with a slight knop near the foot and a trumpet-shaped bowl.

b) one stem fragment is similar to those described except for the addition of vertical fluting on the knop.

c) two vessels have plain stems with trumpet bowls and solid conical feet.

Tumbler. Eight plain tumblers of clear glass range in basal diameter from 2 in. to 3 in., with slightly outsloping side walls; two tumblers have mould-made decoration in the form of equal concave panels.
Craft - Tools

Awls, Wrought-Iron. a) a rectangular shaft 16.8 cm in length, pointed at one end, with ferrule intact; possibly a scribe or a shoemaker's awl (see Mercer 1960: 64, 177). b) a bi-pointed shaft circa 15 cm long (Fig. 134e).

File, Iron. a) a half-round file, double cut on the flat surface and single cut on the round surface; gradually tapering tang (Fig. 135j). b) a flat file with both sides double cut (Fig. 135h).

Pike, Wrought-Iron. Bevelled piece of iron with upper end bent around to form a socket for wood shaft; length: 15 cm (Fig. 134g).

Pitchfork, Wrought-Iron. Two-pronged, with open tang to receive wooden handle; the prongs are flattened, rectangular in section and bevelled; total length: 35 cm (Fig. 133a).

Wedge. A small wrought-iron wedge (Fig. 134c).

Weapons

Balls. Three cast-iron balls range in diameter from 3 cm to 4.7 cm. Eleven lead musket balls are circa 70 calibre (Fig. 132j).

Gunflint, Flint. Six gunflints each measure circa 3.5 cm by 3 cm; four of the flints are made from blades and are black in colour; two flints are gunspalls, of dark grey flint (Fig. 132i).

Gunflint Patch, Lead. A possible gunflint patch, made of a folded piece of lead, circa 3 cm square, with a notch at one edge to accommodate vise jaw screw of cock. Gunflints were often held between such pieces to achieve a better grip.

Personal - Activities

Pipe, Clay. Excavations in the general 18th-century fort area produced both 18th- and 19th-century artifacts including white clay tobacco pipes. A total of 454 pipe fragments were found: 20 pipe bowl fragments, both plain and moulded, 431 plain pipestems and 3 marked pipestems. Makers' marks appearing on the bowl fragments: TD within a circle (in relief); TD impressed on the back of the bowl with T and D in relief on the spur; TD impressed with WG in relief on the spur; WG impressed within a circle of the bowl back. WG may be William Goulding Jr., a London pipemaker of 1733-62 (Oswald 1975: 137). Pipestems with makers' names impressed on the sides: A. COGHILL/GLASGOW (1826-1904), HENDERSON/MONTREAL (circa 1848-80), MCDougall/GLASGOW (1847-68) (Fig. 119).
Personal - Grooming

Brush, Bone. Two hairbrush fragments. One is a handle, broken where the brush begins; five longitudinal grooves on the upper surface begin on the handle and run onto the brush surface; maximum width: 2.2 cm (Fig. 126b). The second example is a brush fragment with the handle missing. Six grooves run longitudinally on the upper surface; numerous cone-shaped holes are drilled into the grooves; fibre (?) of the brush is evident in the majority of holes; 2.4 cm wide (Fig. 126c).

Combs, Ivory. Two fragments, one of which is from a fine-toothed comb (Fig. 126g).

Razor, Iron. A razor blade with a portion of the tang broken; present length is 13.6 cm, maximum width is circa 1.5 cm. Stamped on one side of blade is ML[?] DUBLIN (Fig. 120e).

Personal - Clothing

Buckles. Two shoebuckles and one waistbelt buckle, all of copper alloy:

a) a complete but bent shoebuckle is rectangular and measures 5.8 cm by 4.2 cm, designs in the upper surface consist of a straight raised band in the middle with a wavy line down each side at the buckle edge, between a portion of the design is a space about 1.0 mm in width, lower than the rest, with a design of very fine ribbing. The pin terminal style is of a post-1770 type (Abbitt 1973: Fig. 8B) (Fig. 123b).

b) an incomplete rectangular shoebuckle decorated on its upper surface with raised squares, dotted lines and ridges; the pin terminal style is of a post-1770 type (Abbitt 1973: Fig. 8B). Dimensions: circa 8.6 cm by 4.5 cm (Fig. 123a).

c) a waistbelt buckle, rectangular, 5.6 cm by 3.6 cm, with a central bar and evidence of an iron tongue (Fig. 123e).

Buttons. A total of 17 buttons were found in the excavation area: 3 bone, wood or shell buttons and 14 metal buttons including 6 buttons with regimental markings: the 13th (1813-15), the 60th (circa 1821-76), the Royal Provincials (1776-83 period), the Canadian Militia (1812-15) and two buttons from the Royal Marines (1812-34). Four solid cast buttons, each with a plain face and iron eye cast in place and with or without a mould seam visible, probably date to the 1776-81 period. Four brass buttons, two with the words DOUBLE GILT stamped into the back, date to the 19th century (Fig. 124).

Shako Plates, Brass. Seven plates or ornaments worn on military shakos were found in the area of the 18th-century fort excavations, by far the most from any area during the 1964 season:
a) a fragment of the crown from the top of a hat plate; the top of the crown, which would be a Maltese cross, is missing; greatest width of the crown is 4.9 cm; probable date: War of 1812 period or 1829-44 (Calver and Bolton 1950: 209, Pl.; Cattely 1936) (Fig. 122b).
b) a shield-shaped plate from the shako of the Royal Regiment of Artillery. In the centre are the incomplete remains of a GR cypher surrounded by a garter with the words ROYAL REGT OF ARTILLERY; garter is buckled at the lower left of the oval; below all this is a representation of a cannon or mortar; plate originally was surmounted by a crown, which is now missing; the design is in relief. The plate was attached to the shako through four small holes (Fig. 122d). The Royal Regiment of Artillery is listed as being at Ile-aux-Noix in the years 1813, 1843, 1849, 1850, 1862, 1864 and 1868 (Lee et al 1967).
c) a fragment of the left side of another shako plate, identical to no. b described above; possibly also of the Royal Regiment of Artillery.
d) a fragment of the left portion of a shako plate, consisting of the edge and part of the raised GR cypher (Fig. 122c).
e) small fragments of a shako plate consisting of the top loop of the GR cypher.
f) a probable plate fragment bearing the number 3 and above to the right a raised curve which may be part of a GR cypher; below the numeral 3 is a curved edge of the sort found on shako plates of the War of 1812 period. If the numeral 3 refers to the 3rd Regiment of Foot, the fragment then dates to the 1814-15 period (Stewart 1964: 84).
g) a fragment of a lion's head side ornament identical to a complete ornament found in the hospital (Fig. 122f). The remaining design consists of a right side of the lion's eye, mane, nose and upper lip. Date: 1816-29 (Cattely 1936: 194).

Conclusions
The stone building excavated in 1964 is nearly identical in size and orientation to one of the 18th-century British fort buildings shown on the 1783, 1789, 1809 and 1814 maps of the island and therefore can be presumed to be the "commissary store." Artifacts dating to the late 18th century were found in relative quantity.

The dating of the other features found to the east of the stone building cannot be definitely ascertained. The gravel pavement and log beams possibly predate the drainage-sewage system and are contemporary with the stone building since the trench dug for the wooden sewer seems to have cut through the gravel layer. However, if this is the case, we
have no way of knowing how much difference in age there is between the two. Presumably both could have been constructed in the 1780-83 period.

The exact dating of the drainage system (wooden sewer, stone drain) is also in doubt. Two possibilities arise, considering the fact that both 18th-century and 19th-century artifacts were found in direct association with the stone drain and with the grill work and "tunnel" section of the sewer: 1, the drainage system was built during the British fort period (1780-83) but remained open or in use until the construction of Fort Lennox; 2, the drainage system was constructed in the early 19th century, after the demise of the 18th-century British fort but before the 1819 construction of Fort Lennox. Either of the above possibilities could account for the mixture of 18th- and 19th-century artifacts in the drainage system if one keeps in mind that the glacis of Fort Lennox (1819-28) covers the drainage system. However, the association of mid-19th-century artifacts (two-hinge mould glass, a McDougall/Glasgow pipestem, etc.) with the wooden sewer raises problems which cannot be explained at the present time.
The Garrison Hospital

Historical maps of Ile-aux-Noix dated 1814, 1816, 1819, 1823, 1830, 1833, 1842, 1863 and 1870 indicate a rectangular "Garrison Hospital" in the area of the 1964 excavations. An architect's plan and elevation dating to 1823 labels the same building as the "Military Hospital" (Fig. 26). The hospital was apparently a frame (and brick?) building measuring 100 ft. by 24 ft., with one and one-half to two storeys, a pitched roof, dormers, numerous windows and a chimney and fireplace toward each end of the building. Two doorways are shown on the 1823 plan and there are two rooms at each end of the building with two larger rooms separated by a hallway and staircase in the central hospital interior. The hospital was apparently built or completed in 1814 and stood until 1870 (Lee 1966).

The archaeological explorations carried out in 1964 revealed a building nearly identical in dimensions to the "military" or "garrison" hospital described above; however, only foundations for the walls and fireplaces remained (Figs. 27, 28). The archaeology revealed nothing that would either substantiate or disprove the above-ground historical architectural evidence.

Stratigraphy

The soil stratigraphy of the hospital area was as follows:

1. Humus, 0 ft. to 0.5 ft. in thickness.
2. A debris stratum, consisting of rock, red brickbats and mortar fragments, 0.8 ft. to 1.5 ft. in thickness, underlies humus. The maximum density of this stratum was near the two fireplace foundations. The thickness and density drop considerably towards the centre of the building where very few bricks were found. Within the debris were numerous fairly thick lenses of white mortar.
3. A grey-brown sandy clay, occurring in the hospital interior and the immediate exterior. This stratum, which supported the debris stratum, was very hard, possibly indicating the ground surface at the time of hospital construction. The foundation trenches cut through this stratum.
4. A greyish-yellow sterile clay, mottled with rust-coloured sand. Foundation walls and fireplace foundations cut into and rest within this stratum or the next lower stratum.
5. A reddish-brown sand, sterile.
6. A grey clay mottled with a rusty colour, sterile.

Foundation Walls
Foundation walls uncovered form a rectangle with the long axis oriented slightly east of magnetic north (Fig. 29). The north and east walls are better preserved than the west and south walls. The building measured 101 ft. (north-south) by 25 ft. (east-west). The corners of the buildings were situated at the following grid coordinates: northeast corner - 515.5N, 63W; northwest corner - 515.5N, 88W; southeast corner - 414.5N, 64W; southwest corner - 414.5N, 89W.

The foundation walls were made mostly of uncut field stones with a few stones being roughly faced, all set with mortar. The walls averaged 2 ft. in thickness with a maximum height of circa 3 ft. The original height is not known; however, stratigraphy in one area showed the stone foundation to extend above the probable 19th-century ground surface (grey-brown sandy clay) - circa 0.4 ft. of the wall extended into the debris stratum above this ground surface with 2 ft. of the walls in sterile strata.

The foundation walls had been set within a foundation trench, the trench being only slightly wider than the walls. A brick footing was used for the foundation walls and the footing had been placed at the bottom of the trench in a very haphazard fashion. The bricks used were mostly broken pieces or bats, apparently thrown into the trench hurriedly as there was a lack of symmetry throughout the brick base. In only one excavation trench were the bricks found to be in order (Figs. 30, 31). No mortar was used with the bricks.

The foundation walls, like the brick footing, had been constructed with a lack of care. The profile of the wall was never perfectly vertical even where the wall had not been disturbed (that part in sterile strata).

Along one part of the east wall, from the northeast corner to a point 30 ft. south of this corner, was a slight shelf or ledge on the interior face (Fig. 32). The shelf was below the level of the probable hospital floor.

Adjacent to the north, east and west foundation walls, at the mid-point and exterior of each respective wall, evidence of stair or porch foundations was found, indicating probable entranceways or doors to the hospital at these points (Figs. 33, 34). The east and west doors were directly opposite one another, each represented by a squared-U-shaped stone configuration measuring 4.5 ft.
(north–south) by 6.5 ft. (east–west). The east door stair foundation is of better construction than its western counterpart. Both were built after the main foundation walls as the former abut the latter. Handles, hinges and latches were found in both foundation areas.

A third probable stair foundation was found on the exterior of the north wall. It measured 5 ft. by 6 ft. and was not as well defined as the previously described foundations. The foundation is off-centre, its west edge being 8 ft. from the west wall and its east edge being 13 ft. from the east wall. However, some stones seem to have been removed from the east side of the foundation.

The area outside of the south wall was not completely excavated.

**Fireplace Foundations**

Two fireplace or hearth foundations were found on the interior of the hospital, one near each end of the structure (Figs. 35–37). Each foundation was situated 8 ft. from the end walls, but were slightly off-centre relative to one another. Each measured 6 ft. square, 2 ft. in thickness, being constructed of a field stone interior with roughly-faced stone on the outside (Fig. 37). The surfaces of the fireplace foundations were relatively level and of approximately the same elevation as the foundation walls.

No artifacts were found in association with the foundations; however, a large number of bricks, each averaging 0.65 ft. by 0.32 ft. by 0.2 ft., with mortar adhering, were found around both fireplace foundations, especially on the north side of each foundation. This probably indicates brick chimneys that at one time collapsed to the north.

**Other Features**

Two soil stain features or trenches found in the area predate the construction of the hospital.

In a greyish-yellow sterile clay, immediately below a dark brown sterile stratum, was found an unusual circular soil stain (Figs. 37, 38). It was situated in the interior of the hospital immediately adjacent to the south portion of the north fireplace foundation. The soil stain is 0.8 ft. wide, 0.3 ft. deep and 15 ft. in diameter. No artifacts were found within it. Although situated within the hospital, it probably has no relation to it as the north fireplace cuts through the north portion of the ditch, signifying that the ditch is older than the fireplace. Its purpose remains unknown.

A second much larger ditch was also defined. It was 3 ft. in width, 1.5 ft. deep and was filled at the bottom with
brick and mortar debris. The ditch begins under the east foundation wall of the hospital, extends across the hospital interior a few feet north of the south fireplace base, passes under the west foundation wall and then turns a 90-degree angle and parallels the west foundation wall for a distance of 61 ft. (Fig. 37).

Stratigraphically, this ditch cuts through the same strata as does the foundation wall trench of the hospital. It is of the same size and shape as the hospital trench, but predated the latter as the foundation walls and west porch foundation cut into it. Either a building existed in the area prior to the hospital or the hospital construction went through at least two building phases.

Superstructure
Archaeological evidence for the type of superstructure is virtually nonexistent. The main walls were probably of wood although only minor wood remains were found. The amount of brick debris found on the hospital interior was certainly not enough to account for a brick building. In addition, very few bricks were recovered on the exterior of the hospital. Unless numerous bricks were looted from the collapsed building, the hospital was probably of wood construction.

Artifacts
Approximately 9,000 artifacts were found during the excavation of the hospital. Fifty per cent of these artifacts were pottery fragments and pane glass. No artifacts were found which are specifically medical in nature with the possible exception of an iron forceps and certain glass bottles.

All of the artifacts recovered were 19th century in date with the exception of a few 18th-century finds. Many of the artifacts which could be more or less closely dated, such as an 1815 coin, were found in the topsoil. The majority of artifacts were recovered from the brick-mortar debris level.

The artifacts have been grouped into broad functional categories. All hardware and tools are made of wrought iron unless otherwise identified.

Structural Hardware
Braces or Brackets. Three fragments of elbow-shape with nail or screw hole.
Gratings. a) cast-iron, two specimens. A heavy bar with shaft triangular in cross-section, basal side flat; upper surface is truncated and the shaft is curved slightly
longitudinally; at each end of the shaft is a flattened rectangle one-half the height of the shaft; probable complete length is 51 cm; maximum shaft width is 2.7 cm; maximum rectangle width, 5 cm; maximum shaft height, 5.5 cm.

b) a flat bar, 35 cm by 2.5 cm with 12 square holes. There is evidence of iron rods (broken) in 8 of the 12 holes; possibly part of a grating (Fig. 129a).

Hinges. Fragments of two HL or H hinges, one strap hinge, one T hinge and two cast-iron butt hinges (Fig. 127f).

Hooks. a) a J-shaped wall hook, with a pointed shaft at right angles to the J (five specimens).
b) four gate, door or shutter hooks, with one end turned at right angles to shaft, opposite end eyed; length from 7.5 cm to 27 cm; several hooks have staples attached through the eye (Fig. 130).

Keys. a) a complete key with oval bow, drilled circular shank tooled near the bow; bit has one notch and is grooved on one side; 7.5 cm in length.
b) two fragments, each with oval bow, circular shank, with two-notched bit.

Keyhole Cover. Made of brass, this cover measures 6.1 cm by 2 cm; the front is decorated and the hollow back shows a remnant of probable iron pin (Fig. 131f).

Latches. Four latch specimens.
a) a latch and latch plate. The latch bolt is complete, but bent, with an original length of circa 51 cm. The bolt is bent at right angles at one end, onto which is attached a flat, round knob to form a handle; the opposite end of the latch bolt is widened to form a latch stop; the bolt is attached to two latch plates, one is large (23 cm by 3 cm) with six fastening holes; the other is smaller and diamond-shaped with two fastening holes (Fig. 128f).
b) a second latch is of a flattened bar-strap type, 18 cm in length, attached at one end to an iron latch plate with a rivet. Two additional bars of this type were also found in the hospital area.

Locks. a) two complete bolts from a probable door lock measure 17 cm and 18 cm in length; both bolts are rectangular in section with toothed projections at one end.
b) the front plate of an iron padlock with keyhole measures 8 cm by 7.5 cm (Fig. 131d, e, h).

Pintles. One pintle of two-piece construction has a pin 5 cm long inserted into a pointed gudgeon; length is 11.5 cm. Five other pintles are of one-piece construction. One specimen has a broad-arrow mark stamped on the shaft below the pin (Fig. 127a, b).

Shutter Dog. A shutter holder is S-shaped with the middle part of the S thickened to receive a bevelled pin. Length of the shutter dog is 13.5 cm, width is 5 cm (Fig. 129d).

Staples. U-shaped or squared U-shaped with pointed ends, varying in length from 4 cm to 10 cm (three specimens) (Fig. 129c).
Household Items for Maintenance and Repair

Pins. Two straight pins, brass, with flat heads.

Scissors. a) scissor blades triangular in cross-section, with shank of handle circular in section; handle loops oval; overall length, 13 cm.
b) oval loops with shank expanding and partially threaded; flat blades.
c) scissors with flat blades and a round tup shank with double bow loops; 16 cm in length (Fig. 116d).

Thimble. A brass thimble has a decorative band around the base, above a rolled edge, with a floral design and the words I WELCOME THEE.

Household - Furnishings

Lamp Chimneys, Glass. Fragments of long cylinders of thin clear glass with a straight rim and a mouth diameter of circa 3 cm.

Household - Food

Bottles. A variety of glass bottles were associated with the hospital: free-blown wine and medicine bottles, wine bottles made in dip moulds and three-hinge moulds, and two-hinge mould-made vessels including square, octagonal, circular and oval shapes. Some bottles may have been used specifically for hospital functions such as certain wide-mouthed, wide-based, three-hinge mould bottles.

Bottle Stoppers. Two stoppers are made of clear glass. One stopper is short and 3 cm in diameter with a square handle. The exterior surface of the stopper is ground. The second stopper is 1.3 cm in diameter with a squared handle wider than the stopper plug.

Forks. a) two forks with flat handle tang with two half-round pieces of cut bone riveted onto the tang; forks are two-tined with a circular shank; handle is often decorated.
b) one two-tined fork with a rat-tail tang.
c) one three-tined fork with a long, flat tang and three fastening holes in the tang; entire fork is flat, but curved at tine-handle juncture; fork is 18 cm long (Fig. 116).

Knives. Table knife fragments, one with a straight-backed blade and flat tang for handle attachment; another table knife has a rat-tail tang for handle attachment.

Pottery. Of the 27 pottery types discerned at Ile-aux-Noix, 21 were found in the hospital excavations. Tablewares consist of creamware, mocha, slip-banded, plain, and decorated pearlware, including varieties classified as blue handpainted, delicate-painted, sponged, shell-edged, gaudy-Dutch, "annular" ware and transfer-printed, the latter being
by far the most common. Cruder redware includes slipped redware vessels, glazed redware and slip-decorated redware, all possibly Canadian-made (Table 6). A few white salt-glazed stoneware sherds of mid-18th-century date and numerous 19th-century brown to grey stoneware blacking bottle fragments were recovered from the debris stratum as well as porcelain and ironstone fragments (Figs. 109-115). Spoons. Spoons made of brass, iron or whitemetal were found.

a) three brass spoons have a fiddle-type handle and measure 13 cm to 15 cm in length.
b) seven iron spoon fragments are from large spoons; one spoon handle is flat with a spatula-shaped flaring terminal; estimated length is 22 cm.
c) a whitemetal spoon has an oval bowl, an expanded handle rounded at the end and ridged on the back side; impressed on the back of the widest part of the handle above the ridge is the name THOMAS YATES and below the ridge WIDE LINED; length is 14.5 cm (Fig. 117j, m).

Stemware, Glass. Three vessels have stems with a slight knop, conical, folded feet and trumpet-shaped bowls; one vessel has a plain stem with a trumpet bowl and a plain conical foot.

Tumblers, Glass. A minimum of eight tumblers, from 2 in. to 3-1/2 in. in diameter; six are plain and two have moulded decorative panels or planes; five of the plain tumblers have pontil marks present and on one the pontil mark has been ground off.

Craft - Tools

Caulker. A possible caulking tool, made of wrought iron. A heavy trowel-like device 23 cm in length; an anchor mark is stamped into the handle (Fig. 134i).

Dividers, Wrought-Iron. Large dividers 18.5 cm long; the two halves are hinged with an iron pin; each shaft is widest near the top, with pointed terminal ends (Fig. 132h).

Forceps, Wrought-Iron. Pinchers and shaft of handle are flattened on the inside edges with outer edges rounded; loops of handles are circular; length is 14 cm (Fig. 135l).

Hammer, Wrought-Iron. The complete head of a claw hammer, with two reinforcing straps. The head is octagonal in section with downcurving claws; wooden handle fitted between the iron straps or reinforcements and riveted onto latter. Marks are stamped on one side of hammer above reinforcements: a broad-arrow mark adjacent to what appears to be the letter E (Fig. 134a).

Hoe, Wrought-Iron. The shaft and portion of the blade of a J-shaped hoe.
Plane Blade, Wrought-Iron. Rectangular, measuring 12.5 cm by 6.2 cm, with a hole punched near the centre at one end (Fig. 134j).

Rules, Brass. a) the fragment of one scale of a sliding rule, 7 mm wide and 2 mm thick; inches are divided into eighths (Fig. 121d).
   b) the fragment of a graduated rule, 15 mm in width and 1 mm in thickness; the rule is made to measure in inches and eighths; fragment has the numeral 22 stamped into one side (Fig. 121c).

Weapons
Balls, Cast-Iron and Lead. Ten iron balls range in diameter and weight from 2.2 cm (35 grams) to 4.7 cm (418 grams). Twelve lead musketballs are circa 70 calibre (Fig. 132j).
Bullet, Lead. One Enfield bullet, .577 calibre, circa 1860-68 (Fig. 132k).
Gun, Floor Plate for Trigger, Brass. Oval in shape with rectangular slit in centre and screw hole in one end; 5.8 cm in length.
Gunflint, Flint. One flint, black in colour, made from a blade, 3.5 cm by 3 cm (Fig. 132l).
Scabbard, Brass with Gold Wash. Base of a sword scabbard, hollowed to receive end of sword blade; decorated with groups of transverse lines; 10.3 cm long, 2.3 cm wide (Fig. 123m).

Transport - Horse Gear
Axle, Wrought-Iron. A possible axle is a shaft 29 cm in length, with the middle 16 cm of the shaft square in section and the ends circular (Fig. 133d).
Strap, Wrought-Iron. A rectangular strap has ten holes in it, with a heavy eye riveted to the middle, onto which is attached an expanding strap with equally spaced holes in the centre; possibly a wagon fitting.

Personal - Activities
Crayons, Slate. Two specimens, each circa 0.5 cm in diameter (Fig. 120h).
Harmonica, Reeds, Whitemetal. The reed of a mouth organ or harmonica; a sloping rectangle, 8.1 cm long, pierced by ten rectangular slits (Fig. 120g).
Marbles. Two glass marbles with coloured swirls within, 2 cm in diameter; one clay marble (Fig. 1201).
Pipes, Clay Tobacco Pipes. 424 white clay pipe fragments
include 36 plain or mould decorated bowls and 388 stems (Fig. 119). Plain, non-decorated bowls include three without maker's marks, one of which may date to the circa 1730-80 period and another to the circa 1840-60 period, based on comparisons with pipes illustrated by Oswald (1975). On other plain bowl fragments, the TD maker's mark is predominant, mostly on the backs of bowls and/or spurs: TD within a circle, both impressed; TD (impressed); TD within a circle (in relief); TD in relief; TD impressed on the bowl, with WG in relief on the spur; and the initials M and G on the spur. The TD mark, as explained in the chapter on artifacts, may stand for Thomas Dormer, a mid-18th-century pipemaker from London; however, one pipe found in the hospital has an impressed TD on the bowl together with the mark HENDERSON-MONTREAL on the stem, signifying a circa 1848 to circa 1880 date for the pipe. The TD-WG marked pipe probably signifies William Goulding Jr., 1733-62 (Oswald 1975: 66, 67).

Pipes with a variety of moulded decoration were also found in the hospital, as were marked pipestems, including the following: R. Bannerman, Montreal (circa 1860s to circa 1889); Bell, Quebec (1850s – 20th century); A Coghill, Glasgow (1826-1904); Henderson, Montreal (circa 1848 to circa 1880); McDougall, Glasgow (1847-68); W. White, Glasgow (1805-1955).

Personal - Grooming
Razor, Iron. A straight-backed razor with a flat, hollow tang and pin hole; length: 14 cm; blade width: 2 cm (Fig. 120e).

Personal - Adornment
Beads, Glass. Two beads, both spherical, black in colour, 9 mm and 13 mm in diameter.

Personal - Clothing
Buckle, Brass. Possibly a man's trouser knee buckle, rectangular with rounded corners, 2.8 cm by 3 cm; in the centres of the short sides are pin holes. The buckle probably dates to the 1750-70 period (Cunnington and Cunnington 1964: 213; Calver and Bolton 1950: 220, nos. 4-6).
Buttons. A total of 32 buttons were found in the hospital excavations: 17 metal, 5 glass, 8 bone and 2 shell. Metal buttons include seven with regimental insignia: the 19th (1814-16), the 24th (1829-40), the 71st (1824-31 or 1838-52), and four identical buttons of the 100th Regiment of Foot (1866-68) (Figs. 124, 125).
The other metal buttons include four of whitemetal, solid cast and plain, probably dating to the revolutionary war period; one solid cast, plain brass button with a brass eye; two stamped brass buttons with WARRANTED NOT TO CUT on the face, and three iron buttons.

White glass buttons include two four-holed plain buttons with sunken faces and three cone-shaped buttons with an iron eye attached to the back. Eight bone buttons include one-, four-, and five-holed varieties. Two shell buttons each have four holes with star- or ray-patterned decoration on the face.

Heel Plates, Iron, Cast or Wrought. The heel plates are parabolic in shape and each heel plate measures circa 7 cm by 7 cm; one heel plate is made of cast iron with the shoe surface flat and the ground surface partially grooved, with nail holes in the groove. Two wrought-iron heel plates each have two flat surfaces with equally spaced nail holes (Fig. 120d).

Shako Plate or Ornament, Brass. Three military insignia or ornaments worn on a shako were found:

a) a fragment, being the front portion of the curved bugle worn by light infantry on shakos, probably between 1816 and 1830; the entire device consists of the bugle suspended from one or two thick cords tied in a bow at a point above the centre of the bugle, giving the impression that it is hung on a wall; the fragment is decorated with floral designs and a band, all raised; length: 4.2 cm; maximum width: 3.2 cm (Fig. 122e) (for American examples, see Campbell and Howell 1963: Figs. 39, 78, 79, 121, 191, etc.).

b) a complete ornament, circular, 3.6 cm in diameter; in relief, the head of a mournful lion with a mane which is arranged like a wreath at the edge; nose of lion is highest point, being 10 mm above basal parts (Fig. 122f). Between 1816 and 1829, shako side-ornaments were of the lion's-head type; in 1829, lions standing on crowns were introduced (Cattely 1936: 194).

c) nine fragments of a sun-burst star-type shako plate of the 65th Regiment. The crown which would surmount the plate is missing except for a part of the base (Fig. 122a). Cattely (1936) dates this type of plate to the 1829-44 period; however, the hospital specimen can be narrowed down to the time range 1838-41 for between these years the 65th Regiment of Foot was in Canada (Stewart 1964: 274).

Shako Scales, Brass. Half-round and crescent-shaped pieces of very thin brass, with three holes along one edge, measuring circa 2 cm by 1.5 cm (Fig. 123n). Four such scales were found in the hospital. Scales or leaves such as these were sewn overlapping to the shako chinstrap, above the peak of the shako, or looped over the cockade at the front of the shako. Scales of this type were found from
1829-35 on officers' and men's shakos. Chin scales were discontinued in 1842 and replaced with chain or a plain leather strap (Cattely 1936: Pl. II, 8).

Personal - Coinage

Coin, Copper. A Nova Scotia trade token, 2.7 cm in diameter and 2 mm thick. Obverse: George III, dexter, wreathed and robed; legend HALF PENNY TOKEN 1815; Reverse: a three-masted ship, full sail, with legend SUCCESS TO NAVIGATION AND TRADE.

Conclusion

In summary, it is certain that the archaeological investigations uncovered the garrison hospital built circa 1814. The location of the hospital and a comparison between the measurements of the building obtained archaeologically (101 ft. by 25 ft.) with those shown on historical maps (100 ft. by 24 ft.) forms the main evidence for this assumption.

The date of hospital construction could not definitely be ascertained from archaeological evidence; however, artifact remains seem to range in date between the historical dates given for construction, circa 1814 to circa 1870. The date of destruction of the hospital is suggested by artifacts found within the building debris level: two-hinge mould glass dates to circa 1840 or later (Lorrain 1968); metal buttons of the 100th Regiment of Foot date to the 1866-68 period. Crossmends with the nearby cookhouse establish a date of 1864 or later for the demise of the hospital, based on a knife fragment with the date 1864 stamped on the blade; several Henderson (circa 1848 or later) and McDougall (circa 1847 or later) pipestem fragments may also date to this period, but certainly date to post-1847. In sum, the demise of the hospital would seem to have been in the late 1860s, a date which agrees well with the historical date of 1870.

The artifacts are essentially the same types found in other structures on Ile-aux-Noix. Very few artifacts, if any, give the impression of a hospital with the possible exception of certain wide-mouthed glass bottles and the iron forceps previously described.
The Hospital Cooking House

A building labelled the "Hospital Cooking House" on an 1823 map of Ile-aux-Noix was the subject of intensive archaeological excavation in 1964. The cookhouse served the garrison hospital (Fig. 39). It was built in 1816 and supposedly was still standing in 1870 (Lee 1966).

The structural remains thought to be the cookhouse were uncovered within the grid area 47ON-503N, 161W-191W, some 73 ft. west of the military hospital. The corners were found and the interior of the building was completely excavated. The cookhouse structure measured 32 ft. (north-south) by 18 ft. (east-west). These measurements compare very favorably with the measurements ascertained from the 1823 map of the cookhouse: 30 ft. by 15 ft. It was apparently a small wooden structure supported by four stone corner foundations. A central back-to-back hearth or fireplace with a probable bake oven attached on the west side measured approximately 12 ft. square and backed on the west wall of the building. The building itself is oriented to face the east toward the hospital. A doorway was undoubtedly located on the east side (Figs. 40, 44).

Hearth

The most substantial structural feature found was the hearth - bake oven foundation, made of brick and stone, situated in the west-centre of the building, backing on the west wall of the building (Figs. 41-51). The hearth - bake oven foundation measures a maximum of 12 ft. square and was about 4.1 ft. in height (foundation stones: 2.6 ft. thick; brickwork: 1.5 ft. thick). The surface of the feature was at approximately the same elevation as the stone corners (circa 101 ft. ASL).

When first exposed, a large amount of brick and mortar rubble was found on the structure. Further investigation provided evidence that the structure was composed of two sections, a front, east portion or back-to-back hearth, and a back, west portion, or bake oven foundation (Figs. 41, 45). The hearth and bake oven had separate foundations and different patterns of brickwork.
The hearth is situated in the centre of the building, facing the hospital building. It measures 12 ft. (north-south) by 7.5 ft. (east-west) by 2.6 ft. in thickness. The hearth was constructed of four to five courses of foundation stones, large and small, the majority heavily mortared. On top of the foundation, laid on a thin bedding of reddish-brown sand, were up to four courses of brick set in mortar for the floor. The type of brickwork varies and four distinct construction patterns can be discerned:

1. The south and north flooring of the hearth are made of relatively soft brick, the average size of which is 0.75 ft. long, 0.4 ft. wide and 0.2 ft. thick. The bricks, laid on edge, formed a partial concentric square pattern. The joints formed in one row were laid opposite the middle portion of the bricks in adjacent and parallel rows. Complete stretchers and/or cut bricks were used. The bricks were set on a brownish red sand, beneath which was brick, mortar and artifact fill. The outer or southern 1.7 ft. of brick flooring was set on top of fill which was on top of sterile soil. The remainder was set on fill which in turn was on top of foundation stones (Fig. 47). In other words, the hearth pavement, measuring 12 ft. by 7.5 ft., extended beyond the foundation, which measures circa 8 ft. square, and sloped downward from the hearth centre.

The brickwork of the north portion of the hearth is identical to that described, but the extent of the north portion is narrower (Fig. 41).

2. Located in the flue area of the hearth is the second type of brick construction and the highest elevation of what remains of the hearth - 103.12 ft. ASL. Four complete, well-constructed courses of brick are set in mortar. Bricks measure 0.85 ft. by 0.42 ft. by 0.3 ft. ASL. This portion of the construction is bordered on each side by an east-west line of flat bricks placed end to end. The interior is constructed of whole and half-bricks, well mortared.

3. The third and fourth types of brick construction are situated to the immediate north of type 2 construction. Both consist of one or two courses of brick on top of reddish-brown sand and mortar, below which is the stone foundation. Type 3 consists of the same type of bricks as type 1, except they are slightly shorter, averaging 0.6 ft. in length. These bricks, together with brickbats, have been placed on their sides in lines running north-south, giving a total thickness of about 0.7 ft.

4. The same thickness of brick occurs for type 4 construction: end-glazed bricks set in an upright position on top of hearth sand and mortar. Bricks measure 0.7 ft. by 0.37 ft. by 0.2 ft.

The hearth structure had a chimney, probable archaeological evidence for which can only be discerned in a
pile of brick rubble found to the west of the hearth outside the west wall. However, a relatively small amount of brick was uncovered in this area.

The bake oven measures 10.3 ft. (north-south) by 4.5 ft. (east-west) and is constructed differently from the adjoining hearth. A plaster or mortar flooring covered a single course of brickwork. The brickwork slopes up gradually to meet the lower brick pavement of the hearth. A foundation of 11 courses of brick, resting on small stones with a course of brick beneath, supports the pavement (Fig. 48). The brick foundation begins at a depth of 0.5 ft. lower than the adjacent stone hearth foundation and extends 1.3 ft. further to the south than the latter. The back extension was poorly constructed in comparison with the finer work of the hearth. The bricks used are rougher and larger, and the brickwork is not as well defined. The bake oven runs up to what probably was the west wall of the building and it may have formed a portion of the west wall.

Numerous artifacts were found, especially among the top few courses of the brickfill. Here fragments of about 40 wine bottles, made in three-hinge moulds (circa 1810 or later), were found, many of which were partially filled and encrusted with mortar (Fig. 108). Apparently broken bottles had been thrown in during construction for use as fill.

The bake oven and the hearth are depicted on the 1823 architectural drawing. Both were planned units as of this date. Whether or not the bake oven was actually built in 1823 is debatable. The difference in construction techniques between the bake oven foundation and the hearth foundation is striking. The bake oven may be later than the hearth. Korvemaker (1972: 74) suggests that the original cookhouse may have burned down, that broken bricks from the collapsed chimney were used to construct the base for the bake oven which was to be added to the new cookhouse, and that a new hearth floor and chimney were made of brick at the same time.

The date of the bake oven foundation is perhaps suggested by a bottle fragment found within the foundation, found either among or below some 400 plaster-filled, three-hinge mould, 19th-century wine bottle fragments (field notes are vague on the exact location of the bottle). In raised letters on the bottle fragments are the words FARQUAR - WILSON "Est. 1845," referring to a specific manufacturer. This suggests that the bake oven foundation, and possibly the entire hearth area, was built in 1845 or after.

Corners
The cookhouse structure was apparently constructed of wood supported by four stone corner foundations (Figs. 40, 49-51). The L-shaped foundations were relatively small, both in
length (4.5 ft. both north-south and east-west), width (1.8 ft. to 2.2 ft.) and thickness (1.0 ft. to 1.5 ft.). The present top elevation averaged 101 ft. ASL, or approximately 2 ft. below the highest level of the brick hearth. The foundations were constructed of both large (up to 1.8 ft. by 1.4 ft. by 0.4 ft.) and small (0.4 ft. by 0.4 ft. by 0.2 ft.) stones, only one to two courses of which remained. The stones had been set in mortar. No bricks were used in the corner foundations. Evidence of wood was found on top of the stones of the southwest corner, together with portions of a vertical beam.

Wood Remains: Interior
Within the area bounded by the stone corner foundations, traces of wood were found, especially on the north, east and south sides of the hearth – bake oven structure. The wood undoubtedly represents the remains of sills and/or flooring as several pieces articulate with the hearth at about the level of the base of the brick hearth floor. Associated with the wood were iron nails and spikes.

Large wooden beams or sills probably ran from corner to corner. Evidence of probable sills was found on the west, east and south sides in line with the stone corner foundations. Traces of wood planking were also found which run east-west perpendicular to the probable north-south sills. These possibly represent girts which were probably fastened to the sills by a mortise and tenon joint. Floor boards and/or floor joists were probably nailed to the girts. Several pieces of wood were found to articulate with the hearth at about the level of the basal course of brick flooring, indicating the floor and upper hearth were probably at the same horizontal level.

Wood Remains: Exterior
Outside of the area bounded by the stone corner foundations was found evidence of wood planking. On the west exterior, 3.5 ft. west of the bake oven foundation, was found two overlapping planks with a total length of 11 ft. Similar planking scraps were found on the south side.

Remains of wood planking were most prevalent on the east exterior. Three groups, each consisting of three parallel planks, were found 3 ft. east of the stone foundations. Each group of planks, separated by 0.5 ft., measured 5 ft. to 7 ft. in length, stretching a total north-south length of 20.5 ft. Numerous nails were associated with the planking.

The wood planking was at the same elevation as both the interior wood remains and stone corner foundations – about 101.62 ft. ASL. It seems probable that the wood represents
the remains of a porch on the east side of the building - the side that faced the hospital structure. However, no evidence of foundation posts or corners was found in this area. The wood found west of the hearth is at a lower elevation (100.7 ft. ASL) and may represent collapsed boards of the west wall.

Soil Stains
To the immediate west of the cookhouse, running underneath both the southwest stone corner and a pile of bricks, was an irregular, shallow black clay soil stain approximately 11 ft. long with a width varying between 0.4 ft. and 8.5 ft. This may represent a portion of a drainage ditch.

Stratigraphy and Artifacts
The stratigraphy of the cookhouse area was as follows: a top humus layer; a series of brown sandy clays beneath the humus and overlying the structural features, containing brick and mortar debris; a series of brown and grey clays without brick-mortar debris.

The artifacts recovered were found mostly in the humus and debris layers and among the bricks of the hearth and bake oven foundations. The datable artifacts, especially glass and ceramic, ranged in date from the early 19th century to the last quarter of the 19th. Crossmends between areas of excavation in the immediate vicinity of the cookhouse were numerous, suggesting a relatively rapid demise and filling of the structure. Several military buttons with regiments numbers (15th, 59th, 65th, 89th, 100th) were found in the debris layers. The 100th Regiment of Foot, identified on the button as the Prince of Wales Royal Canadian Regiment, arrived in Canada in 1866 (Stewart 1964). If this date is correct, then the destruction of the cookhouse and the resulting debris level date to 1866 or later, agreeing with the historical date of 1870.

Another artifact tends to confirm this dating. A table knife, stamped with the date 1864, was found in a nearby level, some artifacts from which crossmend with artifacts from the debris level.

The quantity of artifacts recovered in the excavation of the cookhouse exceeded the number found in any other operation. Approximately 12,200 artifacts were found in the cookhouse: circa 2,000 pane-glass fragments, circa 5,000 pottery sherds and 5,200 other artifacts (metals, bottle glass, pipes, etc.).

Structural - Hardware
Brace or Bracket, Wrought-Iron. A squared, U-shaped fragment with a fastening hole in each arm.
Hasp, Iron. In the shape of a figure eight, 23 cm in length (Fig. 130c).

Hinges. Two strap hinges with flattened, circular terminals (Fig. 127h, i); a fragment of a T hinge (Fig. 127d); two HL hinge fragments, and three butt hinge fragments.

Hooks, Wrought-Iron. Gate, door or shutter hooks; length from 7.5 cm to 27 cm (four specimens) (Fig. 130a).

Keys. Two complete keys each with an oval bow, tooled shank and pin, 11 cm and 13 cm in length; another key is nearly complete, 6.5 cm long, with an oval bow, a circular shank which is hollowed out for one-half its length to fit on a drill pin, and a small bit with a single notch (Fig. 131a).

Knobs, Brass. Two complete door knobs with threaded iron shanks; knob diameters: 3.7 cm and 4.6 cm.

Latches, Wrought-Iron. a) a complete latch, including latch bolt, latch plate and loops or yokes; bolt length is 22 cm (Fig. 128g).

b) several bar latch fragments and one latch catch or guard were found (Fig. 128c).

Locks. a) a possible lock fragment is a thick piece of brass with a thin piece of wrought iron riveted to one side; numerous small holes have been partially drilled into the brass (Fig. 131c).

b) the front plate and side rim of a small padlock measures 2.5 cm by 2.3 cm (Fig. 131j).

Pintle, Iron. One pintle of two-piece construction measures 11.5 cm in length (Fig. 127b).

Staples, Wrought-Iron. U- or squared-U-shaped with pointed ends varying in size from 6 cm to 10 cm (four specimens) (Fig. 129c).

Household - Maintenance and Repair

Pins. Five brass straight pins with either flat heads (two) or wire-wrapped rounded heads (three).

Scissors. Two pairs. One has rounded blades with rounded terminal ends, oval bows, an ornamental shank and a length of 11 cm. The second pair has a flattened shank with a threaded neck; length 12 cm (Fig. 116d).

Thimble. Of brass, lettered and flowered border around the base above a rolled rim; lettering is only partially legible: HONOUR THE? ? (Fig. 120f).

Household - Furnishings

Gear Wheels, Brass. A possible gear wheel from a clock; wheel consists of a thin outer gear with 30 teeth (2.6 cm diameter) and a smaller (9 mm) adjoining gear wheel with eight teeth.

Handles, Iron. Several probable drawer handles:
a) an elongated C-shaped handle 10 cm in length.
b) a probable C-shaped handle attached to a rectangular plate (10 cm by 4 cm), the latter having four fastening holes; the broad-arrow mark within a circle is stamped on the plate (Fig. 132c).
c) a fragment of a small brass handle.

Lamp Chimneys, Glass. Fragments of long cylinders of thin clear glass with straight rims, flat lips and mouth diameters of circa 3 cm.

Lock, Iron. A chest lock, with a portion of the front plate and cover plate missing; the front plate is rectangular with four fastening holes; a drill pin projects beyond the cover plate (Fig. 132a).

Household - Food

Bottles. The largest amount of bottle glass found at Île-aux-Noix was associated with the cookhouse. Wine bottles were the most plentiful, some having been used as fill for construction. Other two- or three-hinge mould bottles occur in a variety of colours and shapes, including some with raised lettering; one two-hinge mould bottle has the wording RRR RADWAY & CO NEW YORK; another has a broad-arrow mark above the letters WD; a three-hinge mould soda bottle reads FARQUAR & WILSON EST 1845 MONTREAL (Figs. 107, 108).

Bottle Stoppers. Two clear glass stoppers with rectangular or circular hand-holds.

Bottle Tops. A tin bottle top is circular and circa 2.3 cm in diameter. A seal on top consists of a feline head surmounted by the top half of a fleur-de-lis with the remainder of the fleur-de-lis below, all in the top half of the design; around the top of the circle are the words PATENT TRADE MARK CAPSULE; under the feline are the words TRADE MARK; below this in a dashing script are the words BETTS LONDON MAKER with London in larger letters; seal is offset by a very narrow raised edge.

A second tin bottle top has the words TRADE MARK CAPSULE over a face view of a lion-like head, below the words TRADE MARK, a signature, then LONDON.

Colander(?), Brass. A colander-like device, 14.7 cm in diameter, consisting of a number of wires stretched across a circle made of a larger wire, forming a mesh.

Forks. a) three forks with flat handle tang, with cut bone riveted onto tang to form handle; handle is often decorated with incised lines; one handle has H873 cut into one side; another handle has two nails at far end, indicating that the handle was once capped with metal; two- or three-tined with circular shank.
b) one three-tined fork with a rat-tail tang.
c) fragments of a four-tined fork (Fig. 116).
Knives.  a) five table knives with flat tang for handle attachment and straight-backed blades; one fragment has the following stamped on one side of the blade: HUNTER SHEFFIELD C&M 1864.
b) two table knives with rat-tail tang for handle attachment; swayback or straight-backed blades.

Pot. A basal fragment of a cast-iron pot (circa 22 cm basal diameter) and a lid fragment.

Pottery. Twenty-two of 27 pottery types were found in the cookhouse excavations. Redwares, probably Canadian-made, include slipped and slip-decorated wares and other finer black-glazed and lustre wares. English tablewares include a variety of decorated and non-decorated pearlwares: blue handpainted, delicate-painted, sponged, gaudy Dutch, shell-edged and "annular" wares. Creamware, mocha and a slip-banded ware made on a yellow body also were found.

Stonewares include black basaltes, one piece of a lead-glazed stoneware, a yellow stoneware and brown to grey blacking bottles and containers (Figs. 109-115).

Spoons. Several iron spoon bowls are oval and have been tinned.

Stemware, Glass. Two vessels each have stems with a slight knop near the conical, folded foot and a trumpet-shaped bowl; one vessel has a plain stem, trumpet bowl and plain foot.

Tumblers, Glass. Nine tumblers were found, six of which are without decoration and three of which are mould-decorated.

Craft - Tools

Chisel. A wood chisel of wrought iron with a plated ferrule attached at the blade-tang juncture; length: 17 cm (Fig. 135c).

File, Iron. A flat file with straight, tapering edges; double cut (Fig. 135i).

Saws, Wrought-Iron. a) saw fragment with uneven teeth; two small haft holes near one end; 21 cm long with maximum width of 7.5 cm (Fig. 135a).
b) a small fragment of a toothed saw blade, possibly a coping saw.

Shovel, Wrought-Iron. A fragment of a probable shovel or spade with a hafting socket 3.6 cm in diameter.

Weights. Two possible lead weights; rectangular with hole at one end (Fig. 134k).

Weapons

Balls. Three cast-iron balls are 2 cm to 3 cm in diameter.

Eight lead musketballs are circa 70 calibre (Fig. 132j).

Bullets, Lead. Two Brunswick belted rifle balls, 70 calibre, date to circa 1845 or later.
Transport - Horse Gear
Buckles, Harness. Two buckles made of brass; one buckle is rectangular with a roller; the other is oval with a dropped centre bar and iron tongue.
Strap Bolt, Wrought-Iron. Object is 24.5 cm long with two holes; a threaded bolt is forged to one end of the object; possibly used on a wagon (Fig. 133c).

Personal - Activities
Crayons, Slate. Ten specimens (Fig. 120h).
Domino, Ivory. A thin rectangle measuring 4.5 cm by 2.2 cm; on one half of upper surface, five cone-shaped depressions; on other half of same surface one cone-shaped drilled depression; a 5:1 domino (Fig. 126h).
Ice Skate, Blade, Cast-Iron. Blade is thickest at the base; front end of blade curves upward; length: 28 cm (Fig. 120b).
Marbles. Nine clay marbles ranging in diameter from 1 cm to 1.7 cm. One specimen is painted.
Pipes, Clay. A total of 757 white clay tobacco pipe fragments, both plain and with moulded decoration, were found in the cookhouse excavations: 701 pipestems, of which 32 were marked, and 56 pipe bowls and fragments. Pipe bowl shapes, when compared to those illustrated by Oswald (1975), seemingly cluster toward the mid-19th century. One bowl (no spur) has the words "LO" and "STRAND" impressed on the back of the bowl.

The following initials occur on bowls and/or spurs found in the cookhouse: TD within a circle (impressed); TD (impressed); TD within a circle (in relief); TD in relief; and on a spur, the initials M and G.
Marked pipe stems are as follows: A. COGHILL/GLASGOW (1826-1904); HENDERSON or HENDERSON'S/MONTREAL (circa 1848 to circa 1880). MCDougall/GLASGOW (1847-68); MURRAY/GLASGOW (1830-61), W.WHITE/GLASGOW (1805-1955) (Fig. 119).
Wheel, Cast-Iron. A complete spoked wheel, 5.1 cm in diameter; probably a wheel from a toy (Fig. 120i).

Personal - Grooming
Brushes, Bone or Wood. The handle of a hair brush is concavo-convex in section with a drilled hole at one end; two crude incisions are present on the upper surface; the handle is 3 cm wide (Fig. 126a). The small fragment of a wooden brush, probably a toothbrush, has numerous very small cone-shaped holes drilled into it. A second more complete toothbrush, 1.0 cm wide, has 40 small holes in one surface, with four narrow slits in the opposite side (Fig. 126d).
Personal - Adornment
Bead, Glass. One spherical, frosted glass bead, 7 mm in diameter.

Earring or Sleeve Link (?). A brass fixture, 9 mm in diameter, is crimped into a stone; the stone is white and alabaster-like and circular (7 mm diameter) with a flat top. In the centre of the stone is a small blue circle within which is a gold-speckly material. An eye is attached to the brass backing to which in turn is attached a circular brass link (Fig. 125g).

Personal - Clothing
Buckles. Two metal buckles.
a) a shoe buckle, fragmentary and bent, made of a copper alloy. The upper surface of this rectangular shoe buckle is decorated with intertwining cords. The pin terminal is of a style common throughout the 18th century (Abbitt 1973: Fig. 8A). The buckle may date to the revolutionary war period (see Cunnington and Cunnington 1964: 229).
b) a rectangular waist- or sword-belt buckle with three teeth.

Buttons. A total of 72 buttons were found at the cookhouse, by far the largest number recovered from any excavation at the site. Twelve glass, 21 bone, 20 shell buttons comprise 73 per cent of the total number of buttons; 19 metal buttons include 11 whitemetal or brass buttons with regimental markings: the 15th (1830s); the 59th (1814); the 65th (1838-41); the 71st (1824-31, 1838-52); the 89th (1812-15, 1841-47); the 100th (1866-68); the Royal Regiment of Artillery (1813-68); the Canadian Militia (1812-15); the Royal Marines (1812-34), and a probable regimental button with the word DONNEGAL over a crown (Fig. 124).

Four brass buttons, dating to the circa 1800 to circa 1830 period, are stamped with the words GILT or DOUBLE GILT.

Heel, Leather with Iron Nails. A U-shaped shoe heel, measuring 4.5 cm by 4.3 cm, consists of four thin layers of leather and 15 square-headed, small nails driven into the leather; nail length is circa 3 cm.

Heel Plates, Iron. Three heel plates, each parabolic in shape with maximum overall dimensions of circa 7 cm square and 1.0 cm in thickness; two plates are of cast iron with the shoe surface flat and the ground surface grooved to contain nails; one heel plate is of wrought iron, flat on both surfaces, with equally spaced nail holes (Fig. 120d).

Shako Plate, Brass. A probable shako side-ornament is circular, 4.4 cm in diameter and slightly convex. The GR (George III) cypher is raised above a background of fine horizontal lines (Fig. 122g).

Shako Scales, Brass. Half-round pieces of very thin brass, with three holes along one edge, measuring circa 2 cm by 1.5
cm. These scales were sewn onto shako chinstraps or other parts of the shako and date from 1829-35 on officers' and men's shakos. Chin scales were discontinued in 1842 and replaced with chain or a plain leather strap (Cattely 1936, Pl. II, 8). Four shako scales were found in the cookhouse (Fig. 123n).

Personal - Coinage
Coins. Three coins and tokens.

a) a copper halfpenny, English coin, 27 mm in diameter and 1.0 mm in thickness. Obverse: laureate dexter bust of George III, draped; reverse: Britannia seated. Probable date of circa 1812 (Howorth 1890a; 1890b: 47-53).
b) copper token, 27 mm in diameter, 1.5 mm thick. Obverse: eagle displayed with legend HALF PENNY TOKEN 1814; reverse: Britannia seated, holding an olive branch, in a wreath of oak leaves. Tokens of this type first issued in 1813 by a Boston merchant who had settled in Montreal; lightweight specimens dated 1813, 1814 and 1815 are local imitations (Charlton 1969: 55).
c) a copper halfpenny token, 28 mm in diameter, 1.5 mm thick; in poor condition. Obverse: a sinister head surrounded by lettering; the only readable letters are UC I and CO; reverse: traces of lettering.

Miscellaneous
Umbrella Brace, Iron. A long straight shaft, square in section, with one end flattened and pierced by a tiny hole; the opposite end of the shaft is U-shaped, with an iron pin linking the arms. Length: 28 cm, maximum width: 9 mm; the shaft is 3 mm square (Fig. 120a).

Conclusions
A comparison of the historical drawing of 1823 with the archaeological data leaves no doubt as to the belief that the excavated structure is the "Hospital Cooking House."

The 1823 architect's drawing (Fig. 39) shows a one-storey building with a single entranceway on the side opposite the hearth, confirmed by archaeology to be thus facing east toward the hospital (that is, fireplace or hearth backed up on the west wall of the building). The wooden structure, built on stone corner foundations, had three windows and a large central fireplace and oven.
Historical maps of Ile-aux-Noix locate numerous buildings on the western portion of the island to the north of Fort Lennox. One building in this area is of particular interest, the "Garrison Bake House," which is shown in maps dated 1814, 1823, 1830 and 1833 (Lee 1966). It is portrayed in more detail on the Durnford drawing dated 24 September 1823: a one-storeyed frame structure with two chimneys, consisting of three rooms and what appear to be two large ovens (Fig. 52). The largest room measures 24 ft. square and a second room, with a fireplace in one corner, measures 16 ft. by 15 ft., while the smallest room is 16 ft. by 10 ft. The three rooms together cover an area 40 ft. by 25 ft. Built on one side of the largest room is the double oven structure, measuring 27 ft. by 16 ft. in overall length and width. In the plan view, each oven is oblong, narrowest where it meets the largest room of the structure. The actual oven cavities measure approximately 14 ft. by 9 ft. to 10 ft. by 2 ft. high.

The bakehouse is shown to have a peaked roof (highest elevation is circa 19 ft.) with the oven structure slanting away from the main building (elevation of 6 ft. to 10 ft.).

As previously noted, one chimney connected with a fireplace in the medium-sized (16 ft. by 15 ft.) room. The other chimney served the oven structure.

During July 1964, building foundations were investigated on the western part of the island. The measurements and characteristics of the foundations correspond very closely to the 1823 bakehouse previously described.

Two types of foundation walls were found, stone and brick, and both joined on the west side of the building. The stone foundation walls supported the frame building and the brick foundation walls were the basal portions of the ovens (Fig. 53).

The stone foundation walls were not completely excavated, but the horizontal extent of the foundation can be ascertained as three corners were exposed (the southwest corner was not exposed). The structure measured 42 ft. (north-south) by 26 ft. (east-west). The foundation rested
upon a sterile clay 3.4 ft. below ground surface. No foundation trenches could be discerned. The walls as found measured an average of 2.5 ft. in height.

Each foundation wall was of similar construction: four to five courses of stone remained, with each wall being two to three stones wide (circa 2.0 ft. to 2.4 ft.). Large field stones, some roughly squared, were held in place by mortar. In general, stones on the wall exterior were slightly larger (average 0.8 ft. by 1.4 ft. by 0.6 ft.) than those on the interior. Smaller stones or pieces of brick had been used as chinking (Figs. 57-61).

The west stone wall was slightly wider (circa 3 ft. wide) at its base than the other walls due to an additional row of stones. The bricks of the oven foundations overlapped these basal stones.

Red bricks were found on top of the east wall, forming course no. 5 of this wall (Figs. 59, 60). The bricks were scattered in haphazard fashion with the exception of the south-central portion of the wall where two courses of brick were found. Upon a flat bedding of stones and mortar a row of stretchers lay along the edge of the wall, flanked on its west by a row of headers. To the west of the headers and at the same level was a row of stones which formed the west edge of the wall (Fig. 55B). The opposite arrangement of headers and stretchers occurred in the brick layer above (Fig. 55A).

The building under discussion may well have had a brick façade of some sort on its east side. Very few bricks were found in the north and south walls and none in the west wall.

Several interesting features were found within the area encompassed by the stone foundation walls: two areas of brick pavement, two small brick features and a dark soil stain composed largely of charcoal debris.

1. Brick pavement or floors. Four excavation squares in the southern one-third of the building yielded evidence of a brick pavement at 0.6 ft. below ground surface (Figs. 53E, 62, 63). The majority of bricks were oriented with their long axis north-south. In the area excavated, the brick debris extended at least 14 ft. (east-west) by 15 ft. (north-south). Whether all of this area was actually a fitted brick pavement or simply brick rubble is not known. The south edge of the pavement ended at a point where the stone wall should have been. The north edge was 15 ft. north of the south wall. At the north edge the pavement was 1.3 ft. in depth, consisting of four courses of brick. The brick was oriented as follows (beginning at the base): headers laid flat, on top of which were three rows of headers set on edge. It is probable that the brick was the foundation for a fireplace as a fireplace is shown for this area on Durnford's 1823 plan.
A similar brick pavement was found to abut the west stone wall (Figs. 53D, 64). Again only a small portion was investigated. This pavement was thicker (2.2 ft.) and the brickwork consisted of seven courses, oriented differently from the bricks of the pavement previously described (beginning at the base): headers set on edge, stretchers on edge, headers flat, two rows of stretchers flat, headers flat and stretchers (?) flat. The pavement extended 3 ft. to the east of the west stone wall. Later excavations by Korvemaker (1972: 45) revealed this brick area to be 25 ft. long by 4.5 ft. wide, paralleling the west stone foundation wall. This brick pavement may have been a platform or foundation in front of the bake ovens.

2. In the eastern one-third of the building, three features were found, all at the same elevation as the brick pavements, but out of line with the main foundation walls. Two small squarish concentrations of brick and mortar were separated by a large area of charcoal and burned soil.

The north feature was fairly well defined. A layer of brick together with a great deal of mortar formed a small structure 4 ft. square. In the centre of the square was a "horseshoe" made of half-bricks set on edge. The opening of the "horseshoe" pointed south. Within the brick "horseshoe" was a concentration of ash. The area between the "horseshoe" and the outer brick was composed of brick rubble and mortar (Figs. 53H, 60, 65).

The east edge of this feature was 1.8 ft. from the east stone wall and the north edge was 5.5 ft. from the north wall.

A second less-definite feature, possibly the remains of a hearth, was situated 8.5 ft. south of the above feature, oriented in a more northeasterly direction. It also measured approximately 4 ft. by 4 ft. The west side was defined by a double row of brick, the south side by alternating headers and stretchers. The north side consisted of a double row of squared stones 1.5 ft. in width. The east side could not be defined, only brick rubble being present. Within the centre of this ill-defined feature was a concentration of ash, together with various artifacts (pipestems, nails, glass) (Figs. 53F, 66).

3. A dark grey soil stain, containing charcoal and deposits of what appeared to be burned earth, was found between the two small brick features described above. The east side of the stain apparently had been cut into by the east stone wall for reasons to be described below. Thus, the original shape of the soil stain could not be determined, but it was either square or rectangular. The present long axis measures a maximum of 7 ft. The stain is approximately 1/2 ft. in thickness and rests upon a sterile soil (Figs. 53G, 66).

The soil stain is situated beneath the two brick and/or
stone features flanking it and is therefore earlier. The charcoal layer was found to extend east of the east stone wall where it lies immediately beneath a small brick pavement (Fig. 531). The soil stain has been disturbed in this area so its exact outline could not be ascertained.

The charcoal earth appears intermixed with the bottom two courses of the east stone foundation wall in the area of the soil stain. It is probable that the soil stain predated the foundation wall. When the east wall was constructed, a foundation trench was probably dug through a portion of the stain. Then the wall was constructed and some of the charcoal earth was thrown back into the trench, thus becoming intermingled with the lower stones of the wall.

The soil stain may represent a trash pit. Artifacts found within the charcoal matrix are not fireburned, suggesting that burning did not take place in the present location. Debris was probably burned elsewhere and deposited in this spot prior to the construction of the bakehouse.

The interior building features previously described were situated at approximately the same elevation, on a horizontal plane roughly equal to the upper surface of the third course of the stone walls (circa 0.6 ft. to 1.0 ft. below the top of the wall). This would tend to indicate that the walls were sunk approximately 2 ft. into a foundation trench if the elevation of the features is equal to the original floor surface of the structure.

The interior hearths (?) (Fig. 53F, H) may predate the main foundation walls as does the soil stain as previously mentioned. All of these features are out of line with the main building and none are shown on Durnford's 1823 plan. If this is the case, one may argue that the floor level of the bakery was above these features.

On the exterior of the building, nine pieces of wood planking, portions of a brick pavement and a lead pipe were found at slightly lower elevations than the interior building features.

Wood planking was found in the following locations, possibly indications of a former sidewalk immediately outside structures 1 and 2:
1. four planks faced north-south on the east side of the building, paralleling the stone wall (Fig. 53). The two largest planks, measuring 3 ft. by 0.8 ft. and 4.6 ft. by 1.0 ft., were 1.5 ft. distant from the wall. The smaller planks, 3 ft. away from the wall, measured 1.2 ft. by 0.4 ft. and 2 ft. by 0.6 ft.
2. two planks, only partially uncovered, paralleled the north wall, oriented east-west. One plank, measuring 1.0 ft. in width, was 2 ft. north of the wall. The other plank was 3.6 ft. distant from the wall. A third plank, measuring 2.6 ft. by 0.8 ft., lay 1.8 ft. north of the junction of structures 1 and 2.
3. on the south side of the brick structure, portions of two planks were excavated. Both lay parallel to the south wall.

What appeared to be a portion of a brick pavement was found to the east of the soil stain (described previously) on the east exterior of the building (Fig. 53I). The bricks lay upon a dark sandy charcoal material, probably a portion of the soil stain (Fig. 53G). The bricks are definitely set in place and extend to within 0.5 ft. of the stone wall. The eastern limit of the bricks is not known.

The brick pavement as found covers an area of only 4 ft. (north-south) by 5 ft. (east-west). Some significance may be attached to it in that it is situated at the mid-point of the east stone wall. Perhaps this is a portion of a stair support or a sidewalk.

A lead pipe, 2 cm in diameter and encased in a wooden box 0.3 ft. square, was found lying in a roughly east-west direction (Fig. 53J). The west end of the pipe, which had a fitting attached, lay between the second and third courses of the east stone wall of structure 1 near its northeast corner. The upper courses were out of place, obviously disturbed. Stratigraphy indicated the pipe intrusion to be recent (that is, the trench associated with the pipe cuts through all layers except the topsoil) and the pipe itself to have been later than the building.

The oven foundation, formed of five brick walls, abutted the west stone foundation wall. Three of the red brick walls of the oven foundation were east-west oriented, two of these forming north and south boundary walls, the third being an interior wall. The two remaining brick walls were oriented north-south and formed the western boundary. The overall dimensions of the ovens were 26.7 ft. (north-south) by 13.3 ft. (east-west). The two ovens each measured 10.4 ft. (east-west) by 9.1 ft. to 9.6 ft. (north-south), the variation in the north-south dimensions occurring because of the slightly northeast-southwest orientation of the interior brick wall which separated the two rooms. Only the south oven (Fig. 53B) was completely excavated, with the top of the walls (walls 3 and 5) being partially exposed in the north room (Figs. 67-73).

Individual wall dimensions are summarized in Figure 56. The east-west oriented walls (walls 1, 2, 3) were each 13.3 ft. in length, with the two exterior walls being the thickest (wall 1, 2.8 ft.; wall 3, 3 ft.; wall 2, 2.2 ft.). Walls 4 and 5 apparently were the latest of the five walls to be built as they abut walls 1, 2 and 3. The latter three walls were built after the stone foundation as the brickwork in some areas overlaps the stones of the west stone foundation wall.

Approximately seven to nine courses of brick remained in each brick wall, with the average brick size being 0.6 ft.
by 0.3 ft. by 0.2 ft. The bricks, showing traces of mortar, had been laid in a generally haphazard non-patterned fashion:

Wall 1. The bricks are mostly stretchers, but occasional headers do occur, especially in the top layer of brick exposed. Many of the headers were set on edge, especially on the wall edges, but others were laid flat.

Wall 2. The central or interior wall had been built in a much more orderly fashion. The wall was made of alternating courses of headers and stretchers, the latter forming the bottom course. Headers were either whole or half-bricks.

Wall 3. Was not investigated.

Wall 4. Mostly stretchers were used in this wall but there was more use of headers set on edge than in wall 1. Half-bricks were used in abundance.

Wall 5. Only the top surface of the wall was exposed and was found to be mostly headers with occasional stretchers along the west side. Headers were set on edge on the interior side of the wall.

All of the brick walls of the oven foundations were uneven horizontally; that is, the courses of brick undulated over the extent of each wall (Figs. 69-71). Walls 1 and 2 were particularly uneven, the eastern one-half of wall 2 dipping toward the east. This situation can perhaps be attributed to inadequate footing preparation. No foundation trenches were discernible. Brick walls had been laid directly on a dark grey sandy soil 0.5 ft. to 1.0 ft. in thickness, beneath which was a sterile clay subsoil (1.8 ft. below surface). The dark grey sand contained pieces of white mortar, brick chips and small stones, once again suggesting a possible earlier structure predating the bakery. The vertical weight of the brick walls, sitting upon an unstable footing, undoubtedly caused sagging in portions of each brick wall. The absence of a solid footing for the brick walls, together with the resulting sagging or unevenness of the brick courses and the generally variable pattern of brick placement, suggests fairly rapid, careless, construction techniques.

The south oven foundation was completely excavated. Lying upon the same dark grey sandy soil and covering the extent of the south "room" was a layer of large field boulders, not shaped in any way (Figs. 71, 72). The boulders, generally larger in size than the stones used for the stone foundation wall, definitely lay against the brick walls, thus having been placed in their positions after the walls had been constructed. The boulders undoubtedly represent a footing to support the oven above.

In conclusion, a comparison of the archaeological measurements of the building with those obtained from the 1823 drawing show significant similarities (see Table 1).
The similarities of dimensions are striking and beyond coincidence. Based upon the comparative measurements, one can say that the 1964 excavations were carried out in the "garrison bake house." This statement cannot be adequately corroborated by the artifact evidence with possibly one exception. Bottle glass, ceramics, pipestems, occasional iron hardware, etc., were found throughout the excavation, as they were on other parts of the island; however, three wrought-iron objects were found immediately outside the south wall of the oven foundation near the southwest corner, at a depth of circa 1.0 ft. below the top of the wall. The objects are heart-shaped, with tangs at opposite ends. Individual dimensions are as follows: 1.5 ft. by 1.2 ft., 1.6 ft. by 1.3 ft., 1.9 ft. by 1.4 ft. The thickness of each object varies, being thickest at one end (23 mm to 28 mm) and sloping to a thinness of 5 mm to 6 mm at the opposite end. All three objects were found lying on top of each other (Fig. 73). Their function is not known, but possibly they are in some way connected with a bakehouse operation.

Crossmends of artifacts were found between the strata which lay against or on top of the walls of the building. It appears that the building, when in ruins, was levelled and covered over relatively rapidly with earth and building debris. Strata were markedly similar on the interior and exterior of the building. A yellowish-grey clay subsoil lay circa 2.5 ft. to 3.1 ft. below ground surface. Above this a series of grey sandy soils were encountered, all of which contained red brick fragments, white mortar chunks and/or small pieces of charcoal or wood.

The majority of artifacts recovered from the excavation came from the grey sandy soil levels, all of which date to the demise of the building. A knife fragment, with the date 1864 stamped into the blade, was found in the building debris level, signifying the date of devastation of the building as 1864 or later. One can infer that the bakery, like many buildings on the island, was probably in use to circa 1870.

Artifacts

Structural Hardware
Grating, Cast-Iron. A T-shaped device with a rectangular slit in the middle and evidence of breakage at all ends, suggesting a part of a grate.
Hinges. Fragment of an H, HL or T hinge; also one butt hinge was found.
Pintles. Four pintles, each made from one piece of wrought iron.
Household - Maintenance and Repair

Pin. A brass straight pin, tin-plated, with a wire-wrapped head.

Scissors. A nearly complete pair with oval loops to the side of a slightly curved shank.

Household - Furnishings

Lock. Fragment of an iron chest lock.

Household - Food

Bottles. Bottle glass found in the bakery includes octagonal two-hinge mould bottles, three-hinge mould bottles of blue colour and free-blown wine bottles. Compared with the hospital-cookhouse complex, relatively few bottles were recovered from the bakery.

Knife. Fragment of a blade and flat tang with the following stamped on the blade: HUNTER SHEFFIELD C&M 1864.

Pot. Rim fragment of a cast-iron pot.

Pottery. The bakery excavations yielded 15 pottery types as classified in this report. Finer wares include a variety of creamware, mocha ware, slip-banded ware, plain and decorated pearlware, including transfer-printed, blue handpainted, delicate-painted, sponged, gaudy-Dutch, shell-edged and "annular" wares. Two slip-decorated varieties of redware are probably of Canadian manufacture of the later 19th century. Stoneware blacking vessels and a few sherds of 19th-century porcelain were also found.

Stemware, Glass. Two vessels with plain stems, trumpet bowls and plain conical feet were found; nine vessels have trumpet bowls, slightly knopped stems and conical, folded feet; one vessel is similar to the previously described vessels except for the addition of vertical fluting on the knop.

Stove. Fragment of edging of a cast-iron stove.

Tumblers. Fourteen glass tumbler fragments with flat bases and slightly outsloping side walls. Thirteen are plain and one is mould-decorated with the side walls divided into eight equal flat planes.

Craft - Tools

Dividers, Iron. Dividers are 11.5 cm in length with the two halves hinged with an iron pin. The numeral IX or XI is scratched into the shaft (Fig. 132g).

Weapons

Bullet, Lead. One Brunswick-belted rifle ball, 70 calibre, dated to circa 1845 or later.
Gunflint, Flint. One gunspall of dark grey flint (Fig. 132i).

Transport - Horse Gear
Buckles, Harness. Two rectangular iron buckles with central bar having two or three teeth.

Personal - Activities
Iron, Cast-Iron. A small iron, probably a toy; the main body is V-shaped in plan with a handle extending 4 cm above the body. Length: 7.4 cm; width: 4.5 cm (Fig. 120k).

Pipe, Clay. The bakery excavation produced the largest number of white clay tobacco pipe fragments, a total of 1,375: 23 pipe bowls, both plain and mould decorated, 1,325 plain stem fragments and 27 marked stems. Certain bowl shapes seemingly date to the mid-19th century as one at least is similar to a 1840-60 pipe illustrated by Oswald (1975).

Bowl and spur marks are limited to the following: TD within a circle (impressed); TD within a circle (in relief); TD in relief; TD impressed on back of the bowl, and W and G on the spur sides; WG impressed within a circle; on a spur fragment, the letters M and G in relief. The TD mark could date from the mid-18th century well into the 19th century (Oswald 1975: 67). WG may refer to the London pipemaker William Goulding, Jr., 1733-62 (Oswald 1975: 137) (Fig. 119).

Marked pipestems are mostly from Glasgow, with five from Montreal: A COGHILL GLASGOW (1826-1904); HENDERSON'S MONTREAL (circa 1848 to circa 1880); McDOUGALL GLASGOW (1847-68); MURRAY GLASGOW (1830-61); W.WHITE GLASGOW (1805-1955).

Personal - Clothing
Buttons. A total of 19 buttons were found in the bakery excavations: 2 glass, 3 bone and 14 metal. One whitemetal regimental button is from the 65th Regiment (1838-41). A brass button bears the markings of the Royal Regiment of Artillery (1813-68). Five plain whitemetal buttons, solid cast, date to the 1776-81 period. Two brass buttons are lettered with TREBLE GILT, and date to the circa 1800 to circa 1830 period or later (Figs. 124, 125).

Shako Plate, Brass. A fragment of a shako ornament consists of the portion of a crown which would surmount a shako plate possibly of 1812 date although they were also used on star-shaped plates which lasted until 1844 (Cattely 1936). The fragment is the right-hand part of a crown and the bottom
ring which would rest on the head. The maltese cross, fleur-de-lis and lining of crown are all present. The bottom of the crown appears to be unusually curved so it may have come from a star-shaped plate.

Personal - Coinage

Coins. Six coins and tokens were found in the bakery excavations.

a) a Spanish silver coin, 1.7 cm in diameter, worn and patinated. Obverse: dexter bust of Charles III of Spain; legend - CAROLUS III DEI GRATIA 1774; reverse: quartered arms surmounted by a large crown of eight spokes, supported by two columns crowned and with a banner loosely falling around; legend - HISPAN ET IND REX Y l R (Y and l are dubious). Arms are those of Spain - Castille and Leon - the small circle at the bottom is for Grenada (Lafuente y Zamalloa 1889; Craig 1966; Rolland and Rolland 1967).

b) copper coin, English, 27 mm diameter, 1.5 mm thickness, design very faint. Obverse: a sinister bust, possibly clothed in a uniform and with a sailor's pigtail, of Lord Nelson (?); reverse: date of 1811 and design which may be an anchor.

c) copper coin, probably English, 27 mm diameter, 1 mm thick. No readable legends or dates, but with designs seemingly similar to coin b above; probable date, 1811.

d) two identical copper halfpenny tokens, Canadian, 28 mm in diameter, 2 mm in thickness, with unmilled edges. Obverse: a Canadian habitant, standing; legend - PROVINCE DU BAS CANADA...UN SOU; reverse: the arms of the city of Montreal; the ribbon bearing the name of the issuing bank is found inscribed in sunken letters, QUEBEC BANK, date of 1837; around the top edge is written BANK TOKEN, around the bottom edge is written HALF PENNY.

e) copper coin, English, 27 mm in diameter, 1 mm thickness, poor condition. Obverse: dexter bust in uniform (?), hair tied in a queue; around the left edge GEORGIVS; no date or indication of which George, but probably George III; reverse: Britannia seated; no signs of a legend or date. Coin is probably a halfpenny dating to the 1770-75 period (Seaby 1968: 206).

Miscellaneous

Can Lid, Iron, Tin-Plated. A lid or cover from a blacking can, 9 cm in diameter. Words in relief on surface, within a raised circle; around edge near circle the following words: WARRENS ORIGINAL MILITARY PASTE BLACKING; in centre, numeral 72 below which is HERCULES BUILDINGS, 1867, WESTMINSTER ROAD, LONDON; above numeral 72 is ROB WARREN.
A men's barracks-storage building is shown on several maps of Ile-aux-Noix (1814, 1816, 1819, 1823 and 1829) and an 1842 map designates the spot as the "site of Burgoyne's old barracks," which would indicate that the building was built circa 1776 (Lee 1966). This date is apparently substantiated by the fact that the building appears on the earliest English map (1783) of the island. From circa 1812 to 1833, the structure was used for storage purposes. It is not shown on the 1852 and 1863 maps of Ile-aux-Noix.

In summary of the historical evidence, very little is known of the building under consideration. Its length of use as a barracks is not known, but it may be assumed that some time between 1833 and 1852 the building went out of use. Nothing is known concerning construction details, except that it was a two-storeyed building.

Rough measurements of the rectangular building can be obtained from two of the historical maps: 1816, circa 160 ft. by circa 35 ft.; 1823, circa 150 ft. by circa 30 ft.

Twenty-five exploratory excavation trenches were placed in the area 360-560N, 216-288E in order to locate remains of the men's barracks-storage building. Geohm readings had indicated the presence of resistant material in this area. Unfortunately, little of the building was found and the limited amount of excavation raised more questions than it answered. Further archaeological work is necessary in this area.

The following archaeological evidence was recovered (Fig. 74):  
1. soil stains extending grid east-west at 374N and 556N, presumably the north and south walls of the barracks building.  
2. a series of disconnected soil stains extended grid north-south along lines 226E and 258-262E, presumably the east and west walls of the building.  
3. two stone fireplace or chimney bases.  
4. segments of well-preserved wood beams.  
A building roughly 182 ft. (north-south) by 32 ft. to 36 ft. (east-west) is indicated by the archaeological remains.  

From the stratigraphic evidence, all features appear to be contemporary. All soil stains immediately underlie the
grey topsoil and cut into a yellowish-brown sandy clay stratum below the topsoil.

The North and South Walls
No brick or stone walls were found; only soil stains marked the former location of walls. Presumably the soil stains mark the location of foundation trenches, the stone or brick of the walls having been removed for reuse in other buildings at some time in the past.

Two excavation squares (5G14G, 5G14J) revealed east-west oriented soil stains at a depth of 1.2 ft. below surface, presumably the south wall (Fig. 76A). The stains measured 1.6 ft. to 2.0 ft. wide, with a vertical extent of 0.6 ft. to 1.0 ft. The stain in 5G14G was located circa 2 ft. south of the stain in 5G14J. This variation in east-west alignment cannot be explained at the present time.

Soil stains which appear to mark the northwest and northeast corners of a building were uncovered in 5G14R and 5G14S. The stains, running north-south and east-west to form corners, measure 3 ft. to 4 ft. in width and circa 1.0 ft. in depth, and are larger than the south wall stain.

Complications arose in the archaeology of the north wall area. Scattered stones, presumably remnants of a wall, lay on top of the north wall soil stains in a roughly east-west line. However, the stones, as well as soil stains of a different colour, continued beyond the northwest and northeast corner stains. In a northeast excavation square (5G14U), the stones ended at a point where a soil stain turned north. The latter stain was 4 ft. to 5 ft. wide and 2 ft. in depth.

From the limited amount of digging done in this area, it appears as if the walls of two buildings overlap: an earlier building, the barracks, represented by the east-west soil stains which turn south, and possibly a joiner's shop, represented by the stones which continue beyond the above stains and other east-west soil stains, which in 5G14U turn northward, forming a probable southeast corner (Fig. 75A). An 1814 map of the island shows the barracks and joiner's shop adjacent to one another.

From the soil stain evidence, it appears that the north barracks wall was extended to the east and west to form the south wall of the joiner's shop. The supposed northwest and northeast corner barrack stains were clearly discernable as corners in contrast to the obliteration of these stains that one might expect had the entire joiner's wall been of new construction.

The above discussion is based on meagre archaeological evidence. Further excavation should be carried out in the joiner's shop area to clear up the problems relating to the barracks area. Geohm readings revealed much resistance in the area north of the barracks.
The East and West Walls
The supposed east and west walls of the barracks were uncovered in ten excavation squares. They consisted of square or rectangular soil stains averaging 4 ft. in width, 4 ft. in length and 2 ft. in vertical extent (Fig. 75B, 76A, B). All were separated by intervals of between 2 ft. to 3 ft. Several of the stains contained wood chips and remains of wooden boards. All occupied the same stratigraphic position, immediately beneath the topsoil.

The function of the soil stains remains unclear. They were undoubtedly foundation pits into which large wooden posts had been set or in which small stone support pillars had been built. The use of posts is suggested because of the evidence of wood within the soil stains.

The total number of support pillars, if evenly spaced (circa 3 ft. apart) for the entire length of the building, would approximate 25 for each wall.

In summary, the exact nature of the barrack walls remains indefinite. Seemingly continuous foundation trenches mark both north and south walls while discontinuous foundation pits mark the location of the supposed east and west walls. Why these differences exist cannot be explained.

No information is available on the intersection of the north and south walls with the east and west walls. In 5G14G, a square which was located near the supposed southeast corner of the barracks, only an east-west stain was found and no north-south stain.

Another problem is that the northeast corner stain is circa 4 ft. east of the line formed by the east wall foundation pits. However, the northwest corner stain is in alignment with the west wall remains.

The Fireplaces
Two chimney or fireplace foundations were found within the building about 1.0 ft. below ground surface. The north base was not excavated, but its dimensions were found to be 10 ft. square.

The south foundation was completely excavated. It was constructed of large roughly-hewn stones and mortar. It measured 11.2 ft. (maximum north-south dimensions) by 9.3 ft. (maximum east-west dimensions) with a vertical extent of about 2 ft. (five to six courses of stone) (Fig. 78).

In section, the lower portions of the foundation sloped inward (Fig. 77). No definite foundation trench could be discerned, but the stones undoubtedly had been forced or laid into a pit the size of the base. The exterior and surface of the base was coursed stone with the interior being essentially rubble fill.
The surface of the base was uneven and little evidence of fire was found.

The position of both foundations was equidistant from the supposed building walls. The south building wall is 40.2 ft. south of the south foundation while the north wall is 39 ft. north of the north foundation. The north foundation is situated 77 ft. north of the south base. The east and west walls of the building are both exactly 8.4 ft. distant from the south foundation.

Slightly east of centre on the south side of the south foundation was found a small (3.6 ft. long), poorly constructed north-south stone wall. The wall is separated from the foundation by less than 0.5 ft. It is one course thick and one stone wide; its surface being slightly below the surface of the chimney base.

Two feet west of centre on the north side of this same foundation was found a similar wall. Perhaps both walls once ran the entire length of the building and, if so, were undoubtedly used as floor supports.

Nearly 2 ft. below the above wall (2.3 ft. below the top surface of the south fireplace foundation) and parallel with the south side of the south base (running east-west) was a large, perfectly preserved, square-cut wood beam (Fig. 79). The beam measured 0.9 ft. by 0.9 ft. and its length was continuous across the 15-ft.-wide excavation square. The same beam was also found some 8 ft. to the east, making the total length of the beam at least circa 25 ft. (Figs. 80, 81). The beam stopped at the outer edge of the east wall soil stain. Although the wooden beam stopped abruptly at this point, the east-west trench in which it originally had been placed continued 7 ft. to the east of the east wall soil stain, where it joined wooden planks oriented north-south (Fig. 82). The exact stratigraphic relationship between the east-west beam and the so-called east wall of the building was not ascertained as no evidence of a "pillar" stain was found in this immediate area. However, both features immediately underlie topsoil and cut into the same strata.

The east-west beam lay 0.6 ft. south of the south fireplace foundation. At the point where it extends beneath the north-south wall (the supposed floor support wall) mentioned previously, the beam was reinforced by two additional parallel beams immediately to the south and a piece of board to the north, all at the same level as the large beam.

The larger beam had several mortise holes in it, all of which measured approximately 0.9 ft. by 0.3 ft. by 0.5 ft. deep. Peg holes were noticeable in two of the three mortise holes, round wooden pegs being still intact within the holes.

It is certain that we are dealing with mortise and
tenon joints in this beam. One of the smaller beams mentioned previously, lying parallel and south of the large beam, had been tenoned on one end (Fig. 79). However, there is no evidence, stratigraphic or otherwise, to suggest that this smaller beam or any other beam had ever been tenoned to the mortise hole of the large beam. Possibly old beams, reused from other buildings, were laid below the chimney base for support-reinforcement-stabilization purposes. This supposition is further suggested by the fact that one of the mortise holes in the large beam was situated immediately below the "floor support" stone wall (the other holes were 7 ft. to the west and 14 ft. to the east), indicating that a vertical post could not have been tenoned into the beam. (The tenoned beam mentioned above was 2.5 ft. in length, too long to have fit into the space between the support wall and the mortise hole.)

As previously mentioned, several north-south oriented wood planks were found at the east end of the beam trench (Fig. 82). The planks were seemingly supported at 5-ft. intervals by east-west oriented logs (only two logs were found in the area excavated). The planks lay 21 ft. east of the south chimney base and 8 ft. east of the location of the supposed east wall of the building. On the assumption that the planks might represent the true east wall of the building, an excavation square (5G14X) was dug where this wood would presumably intersect the south wall; however, no additional evidence was uncovered relating to the planking although the south wall stain was found to extend beyond the east wall soil stains (to at least 268E).

Artifacts
A variety of artifacts - metal, glass, ceramic - were uncovered. Of the approximately 1,300 artifacts found in the barracks area, nearly all came from the topsoil, a layer which was clearly above or later than the soil stains, beams and chimney bases. Numerous modern artifacts were recovered from this stratum and thus it cannot be used for dating purposes. However, many of the artifacts found in the topsoil may originally have been associated with the barracks as the island has been plowed by farmers with resulting disturbance of lower levels. Only a few pipe bowls and buttons date to the fourth quarter of the 18th century. The majority of artifacts are of 19th-century date, from which the latest datable artifact, a button of the 100th Regiment of Foot (circa 1866 to circa 1868), coming from the topsoil.
Structural Hardware
Hinge. A flaring strap hinge, of wrought iron, has two impressed marks, a broad arrow and a large E.
Hook. A gate, door or shutter hook with one end turned at right angles to the shaft and the opposite end eyed.
Key. A fragment, 6 cm in length.
Pintles. Two pintles of one-piece construction. One pintle has a broad-arrow mark stamped on the shaft (Fig. 127a).
Staple. One U-shaped staple of wrought iron (Fig. 129c).

Household - Maintenance and Repair
Scissors. An incomplete pair, iron, with oval handle loops and a round tup shank with a flat blade.

Household - Food
Bottles. Very few glass bottle fragments were uncovered from this limited excavation. Finds include square two-hinge mould bottles, as well as free-blown wine bottle fragments.
Knives. A folded iron pocketknife with a pistol-grip bone handle; two additional knife fragments have criss-cross incised decoration on the handle.
Pottery. Ten pottery types were found in the area of the barracks: several slip-decorated redware sherds, probably Canadian in origin of the late 19th century; creamware pottery fragments; undecorated pearlware vessel fragments; blue handpainted dishes; delicate-painted vessels; sponged ware; transfer-printed and shell-edged sherds. Brown stoneware blacking bottles and vessels were also associated with the barracks area.
Tumblers. Three plain glass tumblers have a flat base and a probable height of 3 in. to 4 in.

Craft - Tools
Chisels, Wrought-Iron. One chisel has an expanding blade 4.5 cm in maximum width (Fig. 135b). A second chisel has a flat blade of equal width, which is bevelled, and a short shaft with a blunted head; length of 10.6 cm.
File, Iron. A fragment of an half-round file (Fig. 135d).

Weapons
Gun, Upper Vise Jaw, Iron. From a flintlock musket.

Transport - Horse Gear
Buckle, Harness. An oval brass buckle, with a dropped centre bar, 3.5 cm by 2.9 cm.
Personal - Activities

Pipes, Clay. A relatively large quantity of white tobacco pipe fragments was found. A total of 684 pipe fragments include 13 bowls and 671 plain stems. One nearly complete bowl closely resembles a circa 1760-1800 bowl shape illustrated by Oswald (1975: Fig. 4, no. 23). However, the pipe may be of Canadian manufacture and of a later date (Fig. 119).

Maker's marks on pipe bowls include the following: TD within a circle (in relief); TD impressed on the bowl back and the letters T and D in relief on the spur; TD impressed on the back of the bowl with the letters W and G on the spur (in relief); on a spur fragment, the letters S and E in relief.

Personal - Adornment

Perfume Lid, Tin or Aluminum. A circular cover of light-coloured metal, from a perfume jar or bottle, with a diameter of 4.9 cm and a thickness of circa 1.0 mm; a circular design is stamped into the surface; in a circle around the edge is written, in capital letters, E. COUDR? Y PARFUM at the top, and at the bottom PARIS; within this is a design of two flowering branches tied at the bottom, surrounding the letters CC in Old English and surmounted by a crown.

Personal - Clothing

Belt Plates, Brass. Two oval cross-belt plates, measuring 6.9 cm by 5 cm. The surface of each is convex and plain. One of the belt plates is impressed on the back side with a fouled anchor. On the back are two projections or studs for belt attachment, with an opposite belt hook broken off (Fig. 123j).

Buttons. Of the 14 buttons found, five are regimental buttons: one whitemetal button, with an upright, fouled anchor impressed on the face, is probably of the Royal Marines or Royal Navy (1812-34); the 62nd Regiment (1776-83); the 15th (1830s); the 100th (1866-68); and the Royal Regiment of Artillery (1813-68). Four plain, solid-cast whitemetal buttons probably date to the 1776-81 period. Four brass buttons, with words such as BEST PLATED on the backside, date to the first half of the 19th century (Fig. 124).

Heel Plate. One wrought-iron heel plate is parabolic in shape and flat on both surfaces; overall dimensions: 7 cm by 7 cm (Fig. 120d).
Coinage

Coins. a) a silver two-real Spanish coin, 27 mm in diameter, 1 mm thick, in very good condition. Obverse: arms, probably royal, surmounted by an eight-armed crown but unsupported; on the left side of the shield are the letters II R*S and to the right P; legend *PHILIPPUS*V*D*G (asterisks indicate six-petalled rosettes); reverse: quartered arms inside an eight-lobed figure rather than an escutcheon, with castle and lion rampant; legend is HISPANIARUM*REX*1733; the letters go to the right, always with the top of each letter toward the coin edge (Lafuente y Zamalloa 1889; Craig 1966; Rolland and Rolland 1967).
b) a copper token, 27 mm in diameter, 1.5 mm in thickness, with milled edges. Obverse: eagle displayed with the legend HALF PENNY TOKEN 1814; reverse: Britannia seated, holding an olive branch, in a wreath of oak leaves. This type of token was first issued in 1813 by a Boston merchant who had settled in Montreal. Lightweight specimens dated 1813, 1814 and 1815 are local imitations (Charlton 1969: 55).

Conclusion

There is no valid archaeological evidence to substantiate or disprove that the building under question was built in the last quarter of the 18th century as historical sources indicate.

Archaeological investigation has uncovered the remains of a poorly defined building which measures approximately 182 ft. (north-south) by 32 ft. to 36 ft. (east-west). This compares favorably with measurements of the building taken from historical maps - circa 160 ft. by circa 35 ft. Because of the substantial chimney bases found, the building may have functioned as a barracks at one time and perhaps later as a storage area. The majority of artifacts found are of a domestic or personal nature, ranging in date from the late 18th century to the 1860s.

Before definite conclusions can be reached, more archaeological work is needed on the following:
1. the north stone wall is in need of further investigation in order to establish a more definite relation between the "barracks" and the "joiner's shop," if such a relation does in fact exist.
2. the wooden beams and planking should be traced more extensively and additional work should be done to try to ascertain their relationship to the fireplaces and soil stains.
3. the north fireplace/chimney base should be completely excavated and checked for the presence of beams and floor support walls.
4. the east and west wall soil stains should be completely uncovered. Are they in fact foundation trenches for stone or wood pillars?

In short, much more information is needed on the exact relationships between all the features uncovered in 1964: the wooden beams and planking, the chimney bases, the soil stains and the stone wall.
The Gun Shed

The archaeological remains thought to be the gun shed were situated in the grid area 257N to 285N, and 5E to 88E. Thirty-one archaeological squares were systematically placed so that the horizontal-vertical extent and character of the building could be ascertained with a minimum of effort. A rectangular building, measuring 82.5 ft. (east-west) by 27.5 ft. (north-south) was found in this area (Fig. 83).

The remains of four foundation walls and one interior wall appeared at a depth of circa 0.5 ft. below ground surface. The stone walls were of fairly crude construction, being only one or two courses high, measuring a maximum of 1.0 ft. in vertical extent (Figs. 87-94). The elevation of the walls varied between 101.02 ft. to 102.32 ft. ASL. The walls consisted of large and small angular stones, among which occasional traces of mortar were found. Varying in width from 2 ft. to 3 ft., the walls sometimes had no distinct interior or exterior face. The four corners formed by the exterior walls were merely continuations of the same pattern of construction; that is, one wall did not specifically abut another wall to form a corner. Builders or foundation trenches were not readily discernable.

The east and west exterior walls were nearly completely excavated. No breaks or gaps were found in the walls. Archaeological squares were placed every 15 ft. to 20 ft. during the excavation of the north and south foundation walls. Wall remains were found in every square at the expected place. From the archaeological evidence alone, the location of entranceways is not known.

The foundation walls rested upon wood footings consisting of one wide board or two narrower boards paralleling one another. The board footings, running lengthwise beneath the wall, sometimes did not extend the entire width of the wall. Individual boards measured from 0.4 ft. to 1.0 ft. in width and 0.1 ft. in thickness. When two boards were used as a footing, the average combined width was 1.5 ft., with a space of 0.05 ft. to 0.3 ft. separating the boards (Fig. 95). At wall corners, the wood footings lay at right angles to one another (Fig. 84). In 5G6D, which exposed the southeast corner of the building, both footings were single boards. Several nails were imbedded in the southern end of
the east board. Since the footings did not touch, that is, one board was not fastened to the other with nails, it is possible that old boards with a few nails remaining in them were sometimes used for footings.

Although wood footings were exposed in only three trenches (5G6D, 6E, 6G), it is assumed that boards lay beneath the full extent of the exterior stone walls. The length of individual boards was not determined.

An interior stone wall bisected the building lengthwise (Fig. 91). This wall did not exactly parallel the north and south foundation walls, being circa 0.5 ft. more to the north at its west end than at its east end. Some portions of the wall were entirely missing, the stone possibly having been removed and reused in the construction of other buildings. However, traces of mortar often continued where the stone wall had once presumably been.

The interior wall was very crude, being a ragged line of odd-sized stones. It was one course in height, made of angular stones, some of which had been vaguely squared. Brickbats were sometimes associated with the wall, but in no particular pattern.

Neither a builders' trench nor wood footing were present for the interior wall. The wall itself abutted the west and east exterior walls.

In addition to the structural remains, a series of trenches or ditches were found in the excavation area. A trench 1.1 ft. wide runs in a north-south direction parallel to the east foundation wall on the interior of the building. It runs under the south foundation wall and is probably earlier in date than the building. This trench may be a continuation of a similar trench found in 5G1 (Figs. 93, 94).

Two other trenches occur outside the building on its south side. These trenches run east-west, paralleling the foundation wall (Fig. 85A). Trench A, 5 ft. in maximum width and 2.3 ft. deep, predates the foundation wall. Trench B, 1.6 ft. wide and 2 ft. deep, cuts into trench A, but its debris overlies and thus postdates the foundation wall. The total horizontal extent of trench A is not known, but it may possibly be related to the north-south oriented trench previously mentioned.

All trenches, with the exception of trench B, predate the building and may have been part of a drainage system that possibly extended over large parts of the island.

In summary of the structural features found, only the bottom portions of the foundation walls and an interior wall remained. The walls were of stone construction. Brick was not a major building material in this particular structure although some brickbats were found in association with the walls.

Compared with the other structures excavated on
Ile-aux-Noix, the structure under consideration yielded few artifacts. Comparatively few ceramic or vessel-glass materials were recovered. Fragments of pane glass, found in the majority of archaeological trenches, testify to the presence of windows. The scarcity of artifacts plus the almost complete lack of military items makes it impossible from archaeological evidence alone to state that this building was a gun shed; however, the minimal amount of domestic refuse as compared with other buildings and the lack of fireplaces or chimneys within the structure certainly suggests a storage area such as a gun shed.

Artifacts

Structural Hardware
Hinges. A portion of a T-hinge, 25 cm in length (Fig. 127c); a second hinge is of the H-L type, folded, with a total of ten holes for fastening (Fig. 127e); several butt hinges of cast iron were also recovered.
Lock. A complete bolt from a probable door lock measures 16 cm in length.

Household – Food
Bail Ear and Handle Fragment. Of wrought iron.
Bottles. The majority of glass bottle fragments found in association with the gun shed were made by various 19th-century moulding techniques, including dip mould, three-hinge mould, and two-hinge mould. Wine bottles, including some free-blown examples, are in the majority as at other sites on the island.
Pot. A rim fragment of a cast-iron pot, with the lip of the pot flattened and recessed for a lid; pot diameter: 12 cm.
Pottery. Twelve of 27 identified varieties of pottery were found in the gun shed excavations: a slip-decorated redware, possibly Canadian-made, late 19th century; four fragments of English lustre ware; mocha ware; a variety of wares made of a pearlware body, including plain vessels, a delicate-painted ware, vessels with sponged or "annualar" banded decoration, shell-edged ware and a gaudy-Dutch-like ware. Brown to grey stoneware blacking bottle fragments were also found.
Stemware, Glass. One glass with a trumpet bowl, a slightly knopped stem and a conical, folded foot.
Tumbler. One plain glass tumbler with pontil marks present on the base (fragment).
Craft - Tools
Chisel, Wrought-Iron. A chisel with a tang for handle attachment; blade length is 7.6 cm.

Weapons
Balls. Seven cast-iron balls (3 cm to 4 cm in diameter) and eight lead musket balls (circa 70 calibre) were recovered from the gun shed excavations.
Gun, Upper Vise Jaw Screw, Iron. A crudely-made screw with a slit at the top of the screw; length: 4.3 cm.
Gunflints, Flint. Two flints, black in colour, made from a blade.

Personal - Activities
Pipes, Clay. Tobacco pipe fragments totalled 123, of which 114 are plain stems, 3 are marked stems and 6 are pipe bowl fragments. The bowl fragments are marked as follows: TD within a circle (impressed); TD within a circle (in relief); TD (in relief); TD impressed on back of bowl, with W and G on spur (in relief) (Fig. 130). The marked stems identify one Canadian pipemaker: HENDERSON or HENDERSON'S/MONTREAL (circa 1848 to circa 1880).

Personal - Clothing
Buttons. Eight buttons were found in association with the gun shed: one glass, three bone, two shell, and two metal buttons, the latter with regimental markings. A whitemetal button has the numeral 3 and the motto VETERI FRONDESCIT HONORE. The 3rd Regiment of Foot was in Canada in 1814-15. The second metal button, brass, is of the 65th Regiment (1838-41) (Figs. 124, 125).
Heels, Leather with Iron Nails. Several U-shaped shoe heel fragments measure circa 4.5 cm by 4 cm.
Shako Scales, Brass. Two fragments were found (Fig. 123n).

Miscellaneous
Umbrella Brace, Iron. A long straight shaft, square in section, with one end flattened and pierced by a tiny hole; the opposite end of the shaft is U-shaped with an iron pin linking the arms of the U; length: 28 cm; maximum width: 9 mm; shaft is 3 mm square (Fig. 120a).

The majority of the artifacts were found in the topsoil layer, which postdates the foundation walls. One may assume, however, that many of these artifacts were used by occupants of the gun shed structure or were a part of that structure.
A brown sandy clay layer, below the topsoil, is probably contemporary with the gun shed. This layer contained few artifacts: pane glass fragments, 19th-century ceramics, wrought-iron nails, two lead musket balls, a pipestem fragment marked HENDERSON/MONTREAL (circa 1848 to circa 1880), a brass button of the 65th Regiment of Foot (1838-41) and a fragment of a Farquhar and Wilson glass bottle with the notation "established 1835" on it.

The artifact evidence suggests a post-circa 1848 date for the demise of the gun shed. Historical map evidence agrees with this dating. A number of 19th-century maps (1823, 1829, 1830, 1851, 1863 and 1870) show a building labelled "gun shed" in the same area as the excavations. The main axis of this building runs east-west as does the building found archaeologically. The earliest map to show the gun shed dates to 1823 although maps dating to the 1814-19 period do exist for the island. On this basis we can assume the gun shed to have been built somewhere between the years 1819-23. However, the year of construction was perhaps closer to 1823 by evidence of a drawing which shows the plan, elevation and section of the gun shed in question (Fig. 86). It is dated 2 September 1823.

The latest map to show the gun shed is dated 1870. Thus, the building (or portions of it) stood until at least 1870, but its length of use as a gun shed was presumably ended in or before 1863. On a map of Ile-aux-Noix dated 1863, the following note refers to the gun shed in question: "Old Tumble down Sheds used as cow house and O'Garns[?] stable." Thus, somewhere between 1823 and 1863 the building ceased to function as a gun shed.

Conclusions
In conclusion, although artifacts found within operation 6 do not prove the structure to have been a gun shed, a comparison of historical maps with the archaeological evidence suggest that the operation 6 remains were the gun shed. As mentioned previously, various historical maps place the gun shed in the same location as the archaeological excavations. Also, the dimensions of the structure as shown on the 1823 drawing (Fig. 86) and as measured archaeologically compare very favourably: 81 ft. by 25 ft. versus 82.5 ft. by 27.5 ft.

The substructure of the the gun shed consisted of stone foundation walls which were of fairly crude construction and wooden board footings beneath the stone walls. An east-west interior wall, on the same level as the foundation walls, was undoubtedly a base upon which rested wooden beams, which in turn supported floor boards.

Details of the superstructure of the gun shed can be surmised from the 1823 drawing (Fig. 86). The building was
of wood construction, rising circa 21 ft. above the stone foundation walls and having a pitched roof. It was two-storeyed with an attic and outside gables. One side of the gun shed was broken up into ten doorways or entrances, each 6 ft. in width. The entrances were separated by wooden beams which rested upon the foundation wall.

It is possible that the gun shed was divided into ten separate rooms, each room corresponding with one entranceway. An alternative to this is that the ground floor was one large room as is suggested by the plan, with numerous entranceways constructed so as to guarantee easy access to the equipment stored in the room. Lack of interior subdivisions would allow more storage space. Neither of these assumptions can be supported by archaeological evidence since only foundation walls were uncovered.

The gun shed was undoubtedly a storage area for ordnance and other military equipment. The building may once have housed items similar to those mentioned in a report dated 2 October 1819 "One shed on Ile-aux-Noix, containing field Service guns, carriages, fire engines, and carts. The loft over this building is occupied with...other stores" (Canada. Public Archives, RG8, C Series, Vol. 407, pp. 18-9).
From 23 July to 6 August 1964, archaeological excavations were directed toward locating one or more ordnance stores which are known to have existed on Ile-aux-Noix. Maps of the island dating between 1823 and 1842 show three such buildings, built close together in a single row (Fig. 96). On the 1823 map the buildings are labelled "Temporary Ordnance Stores," apparently having been moved, along with other buildings, to this location from the first British fort on Ile-aux-Noix (Lee 1966).

An 1823 architect's drawing illustrates a plan, section and elevation of the ordnance stores. All are of wood construction, with doorways on the west side and pillars running longitudinally in the centre of each building (Fig. 97). Each building is 18 ft. in width (east-west), but variation occurs in length: the north ordnance store (no. 16 on map) is 84 ft. long, the centre building (no. 17) is 114 ft. long and the south ordnance store (no. 18) is 70 ft. in length.

Information gathered through the 1964 archaeological work can add very little to the historical descriptions. Excavations were carried out in the grid area 384-484N, 108-179E, as the resistivity meter had encountered very high resistance in this area.

A total of 38 excavation squares were investigated (Fig. 98). Stratigraphy was uniform over the entire area: 1) 0.0 ft. to 0.5 ft. below ground surface - a dark brown topsoil; 2) 0.5 ft. to 1.0 ft. b.s. - a light brown loam; 3) 1.0 ft. to 1.5 ft. b.s. - a yellowish grey sandy-clay subsoil. Nineteenth-century artifacts, such as vessel glass, a variety of ceramics, a few clay pipe fragments, etc., were found throughout the upper two strata, as were metal items: in the topsoil - iron scissors, fork, gudgeon, spike, file, shot, ring; in layer 2 - iron forks, buckle, spoon, nails, heel plates, shot, hinges, washer, currycomb, gudgeon and an 1814 copper coin. The artifacts are of the type found in other structures on the island so they are of no help in determining the function of the building under investigation although it is assumed to be one or more of the ordnance stores previously mentioned.

No distinct walls were found in the area. Scattered
stone and brick fragments formed no discernable patterns. Numerous soil stains, of a brown loam, were found on the surface of the lighter subsoil. The soil stains were scattered over the entire excavation area and in general formed no discernable building patterns or outlines. The stains were usually of irregular shape, non-extensive horizontally and in most cases the stains did not line up with one another. No definite corners were found. A few small stains, possibly postmoulds, square, rectangular, or irregular in shape and non-uniform in measurement (1.6 ft. square, 2 ft. by 1.3 ft., 1.0 ft. by 1.2 ft., 3 ft. by 0.7 ft., etc.), were found to be roughly in line (north-south) on the west part of the excavations, spaced 10 ft. to 11 ft. apart. However, they do not seem to correlate with any of the other soil stains. Only a few of the stains found contained wood, brick and/or stone fragments.

Artifacts

Household - Maintenance and Repair
Scissors. Complete scissors, 17.5 cm in length, with loops of handle oval and off-centre, and a round tup shank with a flat blade.

Household - Furnishings
Handles. Two probable brass drawer handles each measure 8.2 cm in length.
Lamp Chimneys, Glass. Fragments of long cylinders of glass, with a straight rim, flat lip and mouth diameter of 3 cm.

Household - Food
Bottles. Dark green wine bottle glass was the most common form of glassware found in the ordnance excavations. Bottles were either free-blown, dip-mould made or made in a three-hinge mould. Other bottles include square, octagonal, circular and oval shapes made in two-hinge moulds.
Forks. A two-tined and a three-tined fork, each with a circular shank and a two-piece bone handle riveted to the flat handle tang.
Pottery. Seventeen types of pottery were found in the ordnance area. One tin-glazed earthenware sherd as well as white salt-glazed stoneware and black basaltes date to the 18th century. Other wares are 19th century in date and include a variety of pearlwares: plain, transfer-printed, blue handpainted, delicate-painted, sponged, shell-edged, "annular" and a gaudy-Dutch-like ware. Brown stoneware blacking bottles were also found.
Stemware, Glass. Three vessels have stems with a slight knop near the foot, trumpet-shaped bowls and conical, folded feet; one vessel has a trumpet bowl, plain stem and a solid conical foot; one vessel is represented by a hollow stem fragment with a baluster knop. Tumblers, Glass. Six tumbler fragments are plain and five are mould-decorated. Basal diameter range from 2 in. to 3-1/2 in. and bases vary in thickness from 8 mm to 17 mm.

Crafts - Tools
Bit, Wrought-Iron. An open cylinder ending in a twist, with a flattened and bevelled hafting tang. Length: 21.5 cm (Fig. 135g).

Weapons
Gunflint. One gunflint made of black flint, rifle size.

Personal - Activities
Pipes, Clay. Thirty-one white clay tobacco pipe fragments were excavated: 4 pipe bowl fragments, 23 plain stems and 4 marked stems of HENDERSON MONTREAL (circa 1848 to circa 1880). Only two pipe bowl fragments are marked, with a TD mark impressed on the bowl back. This may be a pipe made by Henderson as a similar TD mark occurs on a pipe found in the hospital. The latter pipe has the name Henderson on the stem (Fig. 119).

Personal - Clothing
Buttons. Eleven metal buttons were recovered from the excavations: two plain, whitemetal buttons, probably of circa 1776-81 date; one brass button of the Royal Regiment of Artillery (1813-68), and eight brass buttons with lettering (GILT or TREBLE GILT) on the back of the buttons. The latter buttons date to the first half of the 19th century.
Heel, Leather with Iron Nails. A U-shaped shoe heel fragment measures 5.5 cm by 5.5 cm.
Heel Plates, Iron. Four shoe heel plates measure 7 cm by 7 cm in overall dimensions and are parabolic in shape. Two plates are of cast iron with a groove for nail heads in the ground-side surface. The other two heel plates are flat on both surfaces, of wrought iron, and have equally spaced nail holes (Fig. 120d).
Personal - Coinage

Coin. A copper token, 27 mm in diameter and 1.5 mm in thickness, with milled edges. Obverse: eagle displayed with the legend HALF PENNY TOKEN 1814; reverse: Britannia seated, holding an olive branch, in a wreath of oak leaves. This token was first issued in 1813 by a Boston merchant who had settled in Montreal. Lightweight specimens dated 1813, 1814 and 1815 are local imitations (Charlton 1969: 55).

Miscellaneous

Umbrella Brace, Iron. One long, straight shaft, square in section, with one end flattened and pierced; the opposite end of the shaft is U-shaped with an iron pin linking the arms. Length: 28 cm; maximum width: 0.9 cm; shaft is 0.3 cm square (Fig. 120a).

Conclusion

Archaeological evidence in the form of soil stains and artifacts seems to indicate that a building of some sort once stood in the area. The indefinite nature of the evidence makes it impossible to draw valid conclusions about the building(s) and whether or not it has any relation to the ordnance store shown on the historical map. No ordnance materials were actually found. However, negative evidence may give more meaning to this situation. The lack of fireplaces may add credence to the remains having been an ordnance repository as no fireplaces are indicated on the 1823 architect's drawing nor were any found in the excavation of the gun shed (5G6), a building similar in nature to the ordnance store. The lack of any definite walls or features may support the temporary nature of the building(s).

The date of destruction or disuse of the structure is unknown. The latest datable artifacts (marked pipestems) found in an undisturbed context indicate the building was probably still occupied in the 1848 period or later.
For one week in August of 1964, excavations were carried out in the grid area 332-357N, 262-290E. A forge and smith's shop was once situated in this general area, as indicated on maps of Ile-aux-Noix dating between 1814 and 1830 (Lee 1966).

Archaeological exploration was narrowed down to this area because of high geohm readings. Eleven squares of varying sizes were excavated. From the moment the first inches of topsoil were removed, an appreciable quantity of iron artifacts began to appear. From the limited amount of archaeological work done, there seems to be little doubt that the early 19th-century forge-smith's shop has been located.

All features were found between ground surface and 2 ft. below surface (Figs. 99, 100). The soil situation was as follows: layer 1: 0.0 ft. to 0.4 ft. b.s. - topsoil; layer 2: 0.4 ft. to 1.2 ft. b.s. - a mixed soil with occasional brick and mortar detritus, and layer 3: 1.2 ft. to 2 ft. b.s. - a greyish-yellow clay.

The main feature that testified to the former existence of a forge was a concentration of debris at the base of layer 2. A stratum of white mortar (0.1 ft. to 0.3 ft. thick) lay 1.5 ft. below surface, intruding into the sterile yellow clay. Immediately above the mortar and grading into it was a very dense layer (0.4 ft. to 0.6 ft. thick) consisting of iron bars and broken iron tools, wood chips, charcoal, stones, brick and mortar. The stone and brick were concentrated toward the outer fringes of the debris. The iron artifacts in the debris layer were of the type one would expect to find in a forge: circa 50 bars or blanks, circular in section, each 1.0 in. to 4 in. in length, of various weights not exceeding circa two pounds; circa 200 scraps of iron, mostly broken tools or other broken artifacts - bolts, nuts, scissors, hinges, augers, locks, spikes, chisels, keys, staples, buckles, eyes, nail headers, etc., and miscellaneous copper scrap. Since iron was a relatively valued commodity and a substance which could be reused, broken, nonusable artifacts were very probably saved and delivered to the local blacksmith. These items were melted down and shaped into convenient bars of iron which
could be forged at a later date into other tools.

Immediately above and within the layer of debris were heavy concentrations of charcoal.

The debris had extremely well-defined horizontal limits, forming a very regular rectangle, measuring 10 ft. (north-south) by 12.5 ft. (east-west) (Fig. 99). There seems no doubt that these remains have something to do with a forge. The question remains whether the rectangle of debris is the entire forge or whether it represents only one portion of the forge interior. The latter is probably the most plausible suggestion, for the following reasons:

1. Because of the type of activity that goes on in a typical forge-smith's shop, it is inconceivable that such a building could measure only 10 ft. by 12.5 ft. More likely, the entire building approximated the size given in a historical reference. An architect's drawing dated 24 September 1823 (Ile-aux-Noix), shows a plan, section and elevation of building no. 20, the "Black Smiths Shop R. E. Dept" (Fig. 101). The one-storeyed building has two chimneys, that is, two fireplaces and/or hearths. The building measures circa 44 ft. by circa 25 ft. The largest chimney base or hearth measures approximately 6 ft. by 10 ft.

2. No indications of a wall were found in the excavations.

In conclusion, it seems most probable that the rectangle in question represents a hearth situated within the forge shop. The size of the rectangle and its characteristics - the bricks and stone toward the bottom and outside, the mortar, wood chips, heavy deposits of charcoal and abundance of iron blanks and broken iron artifacts - attest to this supposition. This type of concentration was the only one of its kind found during the 1964 work on the island.

Additional excavation is needed around the vicinity of the rectangle of debris in order to define the actual limits of the forge-smith's shop.

The relatively few non-metal artifacts found were bottle glass, pottery and stemware, all food-related items.

**Household - Food**

*Bottles.* Glass bottle finds in the forge are limited to a few free-blown wine and medicine bottles, fragments of wine bottles made in a dip mould, and octagonal two-hinge mould vessels.

*Pottery.* Seven pottery types were found in association with the forge: a slipped redware made in the late 19th century in Quebec or the Maritimes; plain and blue handpainted pearlware; shell-edged ware as well as transfer-printed earthenware. A few fragments of porcelain as well as a small quantity of brown salt-glazed stoneware blacking bottles were also recovered.
Stemware, Glass. One vessel with a trumpet-shaped bowl, a stem with a slight knop near the foot and a conical, folded foot.

The artifact evidence suggests the forge was in operation at least until after the mid-19th century. The date of construction is unknown except for a possible map reference. A map of Ile-aux-Noix dated 24 September 1823 gives the following reference: "no. 20. Black Smiths Shop R.E. Dept"; however, the map fails to pinpoint the exact location of no. 20. Thus, this reference either refers to the forge-smith's shop under discussion (5G19) or to a similar structure on the island.
The Search for A Lime Kiln

The excavations designated 5G20 were instigated to investigate a circular structure shown on the 1816 and 1819 maps of Ile-aux-Noix. This structure might have been a lime kiln as it was situated near (circa 50 ft. away) a building designated "lime shed" on the above maps. A smaller structure labeled "civil workmen" was located circa 100 ft. to the north of the circular structure (Fig. 102).

Archaeological trenches were placed within the area 920N-968N, 220W-264W. This location was marked by a mound rising approximately 2 ft. above the surrounding field. Two cross-trenches were excavated through the mound, one north-south, the other east-west (Fig. 103).

The most productive and informative portion of the mound was the western one-half. Perhaps the most tangible evidence of a structure was found there in trenches 5G20F, 20H and 20L at 2.6 ft. below surface. One course (0.3 ft. thick) of crumbly orange-red brick, interspersed with a few hard, well-fired red bricks, measured 4.5 ft. (east-west) by 3.6 ft. (north-south) in horizontal extent (Fig. 104A). The bricks were not randomly placed, but had definitely been fitted into a pattern. A wood plank, measuring circa 3 ft. by 0.5 ft. and running north-south, lay directly beneath the brick at its west end. Also in association with the brick was a burned area consisting of a greasy black soil within which were lenses of mortar, sand and loam. This black stain was readily noticeable but irregular in extent, occurring mostly around the brick area, but also to the east of it in square 5G20C (Fig. 103).

The following artifacts were found in the vicinity of the brick area:
1 iron pintle,
1 iron hinge,
1 iron lock,
104 clay pipe stems,
1 clay pipe bowl,
14 pipe bowl fragments,
miscellaneous pane and vessel glass.

Further evidence of possible structural remains was found 11 ft. to the east of the brick area in 5G20C. A group of circa eight shaped stones in association with sheet
metal, pane glass and wood fragments was exposed at 2.6 ft. below surface. The stones were in no definite pattern and were not traced to the north. Consequently, their horizontal extent is not known (Fig. 104B).

A definite stone wall corner was exposed in 5G20B, circa 13 ft. north of the previously-mentioned stones and circa 16 ft. northeast of the brick area. The stones were faced on the east and south sides and the corner measured 1.6 ft. in vertical extent. The corner was overlain by a light brown loam which contained numerous chips of brick and mortar (Fig. 104C).

In the excavation squares immediately to the north and west of 5G20B (that is, 5G20J, 20K) additional stonework was found in association with scattered red brick remains. Probing in non-excavated areas revealed much rubble. As judged by this evidence together with the stone corner found within 5G20B, a square or rectangular building probably once stood in this area.

All of the stone and brick remains discussed occupied a similar stratigraphic position beneath a light brown loam. It is probable that all were in use at the same time.

Scattered throughout the light brown loam on the north and southeast sides of the mound (5G20B, 20C, 20D) were numerous fairly large pieces of sheet iron. None was found near the brick area.

Artifacts
From the vicinity of the brick area:

Structural Hardware
Hasp. A fragment, wrought iron.
Hinges. A long (56 cm) expanding strap hinge with the narrowest end expanding into a flattened oval. Three large clinched wrought nails are still intact. A second hinge is of the double strap variety.
Lock. A door lock with a rectangular cover plate has the bolt in place.
Pintle. A one-piece pintle of wrought iron.

Household - Food
Bottles. Free-blown glass wine bottle fragments were found in the area of excavation.
Knife. One folding knife fragment.
Pottery. Six pottery types were found: creamware; plain, shell-edge, and delicate-painted pearlware; transfer-printed earthenware, and a gaudy-Dutch-like ware.
Stemware. One glass vessel with trumpet bowl, plain stem and plain foot.
Personal - Activities

Pipes, Clay. Fourteen pipe bowl fragments, plain or moulded, are of a spurless type. On five bowls, the name VINER is impressed within a rouletted circle on the back of the bowl. On the spur are the initials A and V on opposite sides. Anne Viner of Bristol manufactured pipes in the 1775-1805 period (Oswald 1975: Fig. 9). One bowl fragment has the word STRAND impressed below the blurred letters ??LO. The use of a full name on the bowl back dates from circa 1770-80 to circa 1850 or later (Oswald 1975: 67).

Personal - Clothing

Button. One brass button is ball-shaped and hollow.

Conclusion

The excavation yielded only "bits and pieces" of evidence, nothing complete or definitive. No circular structure was revealed nor were any soil stains found that indicated a circular building. The brick area together with the black, burned soil suggests a fire area, but not necessarily a kiln. The artifacts found in the brick area suggest a domestic structure once stood in the area. The brick remains may represent remnants of a fireplace or possibly a kiln. If the latter is correct, perhaps the kiln was almost totally dismantled in post-1819 times as it does not appear on subsequent historical maps of the island.

On the basis of the artifacts as well as the stone wall corner found to the north of the brick area and the scattered rubble in the immediate vicinity, it is probable that a building stood in this area. In what ways it was connected with the brick area is not known; however, both occupied the same stratigraphic position.

In summary, until further archaeological work is done in the area under consideration, the identification of the remains uncovered in 1964 must remain in question. The remains could be those of either a lime kiln, a lime shed, the building designated "civil workmen" or some other structure not noted on the historical maps.
The Search for A Well

A well, located circa 200 ft. west of the cookhouse, is shown only on an 1870 map of Ile-aux-Noix and therefore it may be later in date than either the cookhouse, the hospital or bakery, all of which are shown on earlier maps of the island. The well, as shown by the 1870 map, was supposedly flanked by numerous structures - brick sheds, temporary huts and miscellaneous buildings.

Magnetometer tests conducted in the supposed area of the well located anomalies between grid 470-480N and 250-265W. Exploratory trenches were sunk in this area of high readings as well as in the general area 450-500N and 240-280W. No definite indication of a well was found; however, other structural features were located - various soil stains, two possible barrels and a stone pavement (Fig. 105). The functions all remain unknown since the excavation was of an exploratory nature and not definitive.

The features found were as follows:

1. a dark soil stain, running approximately grid north-south, was traced for 26 ft. and the end was not found. The stain was 1.0 ft. in width and was at least 2.8 ft. deep.
2. immediately to the west of the above feature was another soil stain, squarish although irregular in shape, approximately 6 ft. square and 1.2 ft. to 1.4 ft. deep.
   Centred in the southwest corner of this stain was another squarish stain, inside of which was found an iron strap or probable barrel hoop 2.2 ft. in diameter. A similar squarish soil stain and barrel hoop was found 8 ft. to the north, immediately west of the northwest corner of the 6-ft.-square stain. Traces of wood were found around the hoops and this evidence may represent the remains of wooden barrels once sunk partially (circa 1.4 ft.) into square holes. The soil inside the hoops was packed with brick and mortar rubble.
   The northwest corner of the large soil stain protruded circa 1.0 ft. beyond the 6-ft. square. Brick dust was found around the edges and much charcoal in the centre.
3. immediately to the west of one barrel hoop and stain was found a nicely constructed stone pavement measuring 6 ft. (east-west) by 4 ft. (north-south). The pavement was made of two to three courses of squared field stones measuring...
1.0 ft. to 1.5 ft. in overall thickness. Several stones were large - 3 ft. by 2 ft. by 0.7 ft. The stones were well mortared and had been laid on a wood foundation consisting of four wooden beams running east-west. The boards were 0.5 ft. to 1.2 ft. in width and 0.05 ft. thick. Several nails were in evidence.

It seems unlikely that this stone pavement represents a hearth or fireplace foundation because of the use of wood under the stone and because the foundation beneath the stones is of a different construction than was found for hearths on other structures excavated. Five excavation trenches were dug in the vicinity of the stone pavement in order to locate possible walls and/or corner foundations, but nothing was found.

As mentioned previously, the function of the above features is not known. All are probably related to one or more structures. Whether or not they have anything to do with a well is not known at this time.

A brownish-black sandy clay containing brick and mortar rubble was the main artifact-bearing layer in the area of excavation. The types of artifacts found in this layer together with the rubble suggests a structural function for the features uncovered. Domestic refuse suggests people lived in the immediate area. The artifacts found were as follows:

**Structural Hardware**

Hook. A gate, door or shutter hook with one end turned at right angles to the shaft and an eye at the opposite end of the shaft.

Latches. A bar-type latch fragment and one rectangular latch catch or bracket were uncovered.

Pintle. Of one-piece construction, 13 cm in length.

Staple. One U-shaped staple.

**Household - Food**

Bottles. Free-blown glass wine bottle fragments were found as well as wine bottles made in a dip mould and two-hinge mould.

Bung Handle. An ornate T-shaped brass bung handle, 7.1 cm in length.

Forks. One three-tined fork with a circular shank widest in the middle and constricted near the tines and tang; another fork fragment has a two-piece bone handle riveted onto an iron handle tang.

Pottery. Fifteen pottery types include redware from Quebec or the Maritimes; creamware; mocha ware; a variety of pearlwares, including plain vessels and vessels with delicate-painted, sponged, shell-edged, "annular" or
transfer-printed decoration. Some black basalte ware as well as stoneware blacking vessels and porcelain were found. Stemware, Glass. One stem fragment with an annular knop and a bucket-shaped bowl. Tumblers, Glass. Sixteen tumblers were found in this excavation. All are plain or non-decorated and range in basal diameter from 1-3/4 in. to 3-1/2 in. Eleven of the 16 have had basal pontil marks ground off.

Craft - Tools
Files, Iron. A triangular file is 14 cm in length. A half-round-rasp - single-cut-file combination tool is 18 cm in length. Shovel, Wrought-Iron. A blade fragment is 18.5 cm in width and slightly convex in section. Wedge, Wrought-Iron. A wedge with a blunted head, possibly a broken axe reused as a wedge.

Personal - Activities
Jew's-Harp, Brass. Is 4.3 cm in length and 2 cm wide. Pipe, Clay. One white tobacco pipe fragment has the mark TD in relief on the probable bowl back.

Personal - Clothing
Buckle, Brass. A rectangular waistbelt buckle, 5.1 cm by 3.3 cm, with central bar and evidence of an iron tongue. Shako Scales, Brass. Portions of two were found.

Coinage
Coin. A copper coin, probably English, 28 mm diameter, 2 mm thick, in poor condition. Obverse: a sinister bust; legend is illegible. Probably a halfpenny token, early 19th century.

Miscellaneous
Umbrella Braces, Iron. Four specimens, complete and fragmentary. A long straight shaft, square in section, with one end flattened and pierced by a tiny hole; the opposite end of the shaft is U-shaped with an iron pin linking the arms. Length: 28 cm; maximum width: 9 mm; shaft: 3 mm square.
Canteen or Root House?

In the general grid vicinity of 240N and 40W a flat mound rises circa 1.0 ft. to 2 ft. above ground surface and measures approximately 20 ft. square. This mound or possible structure does not appear on any of the historical maps of Ile-aux-Noix. The nearest possible historical buildings to the area under investigation are a "Canteen," used from 1830 until 1863 and a small "root house" which stood to the east of it in 1842 and 1852 (Lee 1966). The archaeological finds of operation 10 could represent the structural remains of either building, but the evidence is too inconclusive and the artifacts too meagre in number to enable any conclusions to be reached. No interpretations will be made except to state that the mound was man-made and that at some time in the past a structure probably stood at this spot.

Scattered rock, brick and wood fragments were found in the various trenches of the eight suboperations. A grey clay stratum covered the same horizontal area as that covered by the mound. This clay underlies a brown topsoil and is situated above a yellow subsoil.

The main features of any consequence found were a series of seven nearly identical soil stains comprised of a mixture of grey and brown clays, averaging circa 3 ft. long (east-west) by 2 ft. wide (north-south) by circa 2 ft. deep (Fig. 106). The stains cut through the grey clay into the yellow subsoil. The stains may represent holes or ditches dug for posts which would have been placed 2 ft. - 3 ft. apart (north-south) and ca. 5 ft. apart (east-west).
The Artifacts

During the 1964 excavations on Ile-aux-Noix, a total of 36,705 artifacts were recovered. The majority of artifacts were found in the hospital-cookhouse complex - 21,200 artifacts or 58 per cent of the total. The cookhouse itself yielded 12,200 artifacts (34 per cent) and 9,000 artifacts (24 per cent) were found in the hospital. A few thousand artifacts were found in association with each of the following excavations: the old English fort, the bakehouse and the barracks. Artifacts were not as numerous in the remaining excavation areas.

Glass bottle fragments (circa 4,000 or 11 per cent), pottery sherds (21,745 or 60 per cent), pane glass fragments (circa 6,000 or 15 per cent) and tobacco pipe fragments (3,904 or 11 per cent) were the most common artifacts found and represent 35,649 specimens or 97 per cent of the total assemblage. Given the large number of pottery and bottle glass fragments (71 per cent of the total), the majority of artifacts fit into the "Household - Food" category as previously defined. The remaining 1,056 artifacts (three per cent) are mostly metal tools, weapons, structural items or personal articles. Relatively few military artifacts besides buttons were found.

The following discussion will summarize the characteristics and distribution of glass bottles, buttons, pottery, stemware, clay tobacco pipes and glass tumblers.

Bottle Glass

Free-Blown
Free-blown bottles, having no mould marks present, were relatively common. A minimum of 87 free-blown bottles were found from all sites, with concentrations in the old English fort. These bottles can be classified as wine bottles, medicine bottles, square case bottles and possible decanters.

Wine bottles constitute circa 72 bottles of the total sample. Two nearly complete bottles can be dated by shape to the circa 1790 to circa 1810 period (Fig. 107a). Seventy
other bottle bases are similar in shape. One incomplete bottle, of a squatter shape dating to the circa 1770 to circa 1780 period, has the date 1779 pecked into one side.

Medicine bottles are thin, small (basal diameter of 3/4 in. to circa 2 in.), light green or clear vessels, usually with a pontil mark in the middle of a raised base. A minimum of ten vessels were found.

Only a few square case bottle fragments were found. Dark green in colour, the walls slope outward from bases 1-1/2 in. to 3-1/2 in. square. Large pontil marks are noticeable on most bases.

Several wide-mouth decanter fragments of dark green metal have gently-sloping and short necks, everted or thickened rims and mouth openings of ca. 1-3/4 in.

**Dip-Moulded**

One nearly complete wine bottle, dark green in colour, measures 11-3/4 in. in height and 3 in. in basal diameter (Fig. 107b). The basal kickup is regular with a pontil mark in the centre (Fig. 108). The surface of the glass has a hammered metal appearance. An additional 11 bottle bases are identical in characteristics to the nearly complete specimen. Bottles made in dip moulds date from circa 1790 until sometime after 1810 (Lorrain 1968: 38).

**Three-Hinge Moulded**

A minimum of 83 bottles were found which were manufactured in a three-part hinged mould and therefore date to circa 1810 or after (Lorrain 1968). The majority of these bottles, circa 54 in number, are of dark green colour, uniform diameter (3-1/4 in.) and height (circa 10 in.) and can be termed wine bottles. Bases are indented and exhibit a small nipple of glass in the centre of the indentation. The majority of bases are plain, but a few have the words IMPERIAL PINT in raised letters (Fig. 108). Of the circa 54 bottle bases, 48 are from the cookhouse, 5 are from the adjacent hospital and only one comes from another building, the ordnance store.

Other three-hinge mould bottles resemble wine bottles in shape, but are light green or dark blue in colour. A minimum of 16 bottles are of this type, with basal diameters of circa 3-1/2 in. and a probable height of over 7 in.

Ten additional bottles are wide vessels with wide mouths and short necks. Two nearly complete vessels have a basal diameter of 4-1/4 in., a mouth diameter of 1-5/8 in. and a height of 8-3/4 in. They are of light green colour and have a shallow, regular kickup in the base, without a pontil mark (Fig. 107c).

Three bottles can be classified as soda bottles. These
round-bottomed, aqua-coloured bottles are circa 9 in. high and 3 in. in diameter (exterior). Raised lettering runs vertically on the bottle: FARQUAR & WILSON, ESTABLISHED 1845, MONTREAL.

Two-Hinge Moulded
Square, octagonal, circular and oval bottles were found in the excavations. The bottles are aqua, light green, light blue, or clear.

1. Square bottles have flat sides with short necks and slightly raised bases. One bottle, of clear metal, measures only 1.0 in. square at the base, circa 3 in. in height and decreases in size towards the neck. Writing appears on the four sides in raised letters, one word per side: FREEMAN'S GUTTA SALUTARIS PRICE 20d. A minimum of eight square bottles were found.

2. Octagonal bottles, with unequal or equally wide sides, are relatively small in size, varying in maximum basal width from 3/4 in. to 2-7/8 in. and in height from 5 in. to 6 in. (Fig. 107d). Examples of writing or lettering appearing on the 24 bottle fragments include the following: a, LONDON; b, WD; c, MUS TARD; d, PHEELER LIVERPOOL; e, R.R.R. RADWAY & CO. NEW YORK PA Td ACORD TO ? CONGRESS.

3. Circular bottles. A minimum of six bottles are circular in shape with flat or slightly raised bases and measure circa 2 in. in diameter. Two soda bottles, light green or aqua in colour, have pointed bases and measure circa 3 in. in exterior diameter.

4. Oval bottles are light green or aqua in colour, with one bottle of amber colour. Fragments from at least six bottles have slightly raised flat bases with one exhibiting a pontil mark. Maximum basal size is 3-3/4 in. by circa 2-1/4 in. and a circa 6-1/2 in. height.

Two-hinge mould bottles began to replace three-hinge mould bottles between 1840 and 1850 (Lorrain 1968).

Miscellaneous
Miscellaneous glass includes fragments of four bottle stoppers of clear or light green colour. One stopper from the cookhouse has raised lettering around the top: LEA & PERRINS. It measures 1-3/8 in. in height and 1.0 in. in diameter.

Buttons
A total of 196 buttons were found in all areas except the well area and forge site. Of this total, the majority of
buttons were found in the cookhouse (72) and hospital (32). Metal buttons (99) and bone buttons (51) were most common. Thirty-seven of the metal buttons were marked with regimental or other military insignia. Eighteen regiments are represented in the sample.

Whitemetal

A Solid cast buttons, no mould seam visible, with an iron eye cast in place. The face of the button is convex and decorated; the back is rimmed with a large boss to which the iron eye is attached; lettering on back of button.

1. In centre, a dragon in relief, surrounded by a garter, within which, in Roman letters, is the motto VETERI FRONDSCIT HONORE; the numeral 3 below the garter. Lettering on button back: McGOWAN LONDON. 16 mm diameter (Fig. 124v). According to Stewart (1964: 84) the 3rd Regiment of Foot (East Kent Regiment, The Buffs) was in Canada in 1814-15. Gunshed.

2. On a plain background, within a depressed circle, the numerals 13 surrounded by an eight-pointed star, in relief. Back is unreadable. 16 mm diameter (Fig. 124c). The 13th Regiment of Foot (Somersetshire Light Infantry) in Canada in the 1813-15 period (Stewart 1964: 114-6). On 27 July 1813, one officer and 180 men of this regiment were at Ile-aux-Noix and on 25 September 1813, 16 officers and 322 men are listed as being on the island (Lee et al 1967). Old English fort.

3. On plain background, within a foliole, an eight-pointed star, in relief with laurel wreath in centre, in which are the numerals 15. Back is not readable. 19 mm diameter (Fig. 124b). The 15th Regiment of Foot (East Yorkshire) was at Ile-aux-Noix in 1830 and 1838 (Stewart 1964: 120). A detachment of the 15th was at the island on 31 October 1832 (Lee et al 1967). Cookhouse.

4. The numeral 24 within a wreath. On the back of the button is NUTTING LONDON. 19 mm diameter. The 24th Regiment of Foot (South Wales Borderers) was in the Montreal area between 1829 and 1840 (Stewart 1964: 148). Lee et al (1967) lists a Captain George F. Stark of the 24th Regiment as the Officer Commanding at Ile-aux-Noix on 29 May 1831. Hospital.

5. The numerals 60 within a wreath. Back unreadable. 18 mm in diameter. The 60th Regiment of Foot (King's Royal Rifle Corp) in America and Canada 1755-1824, in Canada 1844-47 and 1866-76 (Stewart 1964: 258-9). Lieutenant Colonel A. Rumpler of the 60th Regiment was Officer Commanding at Ile-aux-Noix beginning 11 April 1821 (Lee et al 1967). Provenience unknown.
6. The numerals 60 in relief surmounted by a crown, surrounded by a double band within which is the motto HONI SOIT QUI MAL Y PENSE. 16 mm in diameter (Fig. 124f). See description of button no. 5 above for information on the 60th regiment. Old English fort.

7. The numerals 65 within a circle, in relief. The back has the raised letters NUTTING LONDON. 19 mm diameter (two buttons) (Fig. 124h). The 65th Regiment of Foot (York and Lancaster Regiment) was in Canada in the 1838-41 period (Stewart 1964: 274). Bakehouse and operation 1 area.

8. Upright anchor with a rope border around the button edge, both impressed. Back unreadable. 23 mm diameter (Fig. 124z). Probably Royal Marine or Royal Navy button, both of which were active on Ile-aux-Noix in the 1812-34 period (Hooper 1967: Lee et al 1967). Old English fort.

9. Upright, fouled anchor impressed on face of button. Back is unreadable. 22 mm diameter. Barracks.

B Solid cast buttons, no mould seam visible, with iron eye cast in place. Face is flat to slightly convex, back probably spun, with a large boss. No writing on back.

1. The letters RP in relief, 5 mm high, surmounted by a crown. Back is plain. 22 mm diameter (Fig. 124y). Identical to a button shown and described by Emilio (1911: 104, no. 582):

A general service button of the loyalist soldiers who are referred to as "Royal Provincials". These buttons were probably on the yearly supply of thousands of uniforms made by contract in England and sent to America for all the loyal enlisted men or organizations, except those forming the very few loyalist corps that had regimental buttons. The button probably dates to the 1776-81 period. Old English fort.

2. On a plain background, the figures 62 in relief within a foliole, with a dot at the top opening. Back very corroded (Fig. 124g). The 62nd Regiment of Foot (Wiltshire Regiment) in Canada 1758-59, 1814-23, 1856-64, and mentioned as being at Ile-aux-Noix in the fall of 1776 (Stewart 1964: 265). Barracks.

3. Eight buttons with plain faces and backs, diameters ranging between 14 mm and 23 mm. Old English fort, ordnance store, barracks, bakehouse.

The whitemetal buttons of Category B resemble those described by South (1963: Type 7, 1726-76 context) and Olsen (1963: Type D, 1760-85). They probably all date to the 1776-81 period.

C Solid cast buttons, mould seam and plug visible, back has boss with iron eye cast in place; button is flat and plain.
Nine buttons of this type were found, ranging in diameter from 16 mm to 21 mm. They are similar to buttons described by South (1963: Type 8, 1726-76 context) and Olsen (1963: Type C, 1760-90 context). Hospital, old English fort, bakehouse.

D Solid cast buttons, eye and button one-piece cast whitemail, plain or decorated.
1. The face has the numerals 71 within the curve of a bugle and circle, a crown above, in relief. Back is plain. 20 mm diameter (Fig. 124j). The 71st Regiment of Foot (Highland Light Infantry) in Canada in 1824-31 period and 1838-52, with a detachment sent to Ile-aux-Noix in 1827 (Stewart 1964: 295). A Major E. White of the 71st was the Officer Commanding at Ile-aux-Noix, 28 August 1841 (Lee et al 1967). Hospital.
2. Two buttons, both surfaces plain. 20 mm diameter. Barracks.

Brass
A Brass buttons, two-piece domed and hollow, with face overlapping back and crimped onto back; back slightly domed with groove running across back, with eye looped over groove inserted into holes on each side of groove; writing on back of button with insignia or numerals on front in relief.
1. Two buttons. In centre of a plain background, three fieldpieces with crown above, in relief. On back the words SMITH & WRIGHT BIRMINGHAM. 16 mm and 22 mm diameter (Fig. 124n, o). Buttons are identical to no. 701 of Emilio (1911) which are identified as Army, Royal Regiment of Artillery, 1820-40. This regiment was in Canada from 1724-1907 (Stewart 1964: 41-56) and was listed at Ile-aux-Noix in 1813, 1843, 1849, 1850, 1862, 1864 and 1868 (Lee et al 1967). Cookhouse, ordnance store.
2. In relief, the numerals 59 with crown above, within a circle. Back: SMITH & WRIGHT BIRMINGHAM. 24 mm diameter (Fig. 124e). The 59th Regiment of Foot (2nd Nottinghamshire, 2nd Battalion; East Lancashire Regiment) in Canada 1758-75 and 1814. Cookhouse.
3. Six buttons. In circle in centre, three feathers and crown in relief; below in scroll motto "ICH DIEN," below which is numeral 100 in relief; a round central circle parallelling button rim, in relief, PRINCE OF WALES ROYAL CANADIAN REG. Back: SMITH & WRIGHT BIRMINGHAM. 25 mm diameter (Fig. 124m). The 100th Regiment of Foot (Prince Regent's County of Dublin, later Prince of Wales Leinster Regiment; Royal Canadians), in Canada 1805-18, 1866-68, 1898-1900 (Stewart 1964: 388). The 100th is listed as being at Ile-aux-Noix in 1812 and 1813 (Lee et al 1967). Buttons
probably date to 1866-68 period or after as Royal Canadians arrived in Canada in 1866. Hospital, cookhouse, barracks.

B Brass buttons, two-piece domed and hollow, with face overlapping back and crimped onto back, back slightly convex, with brass eye soldered into hole on back; face decorated; back plain or lettered.
1. On plain background in relief, a crown, above three fieldpieces, one above another; below the motto UBIQUE; a raised, scalloped border inside of a narrow, rounded rim. Back is plain. 17 mm diameter (Fig. 124q). Probably a button from the Royal Regiment of Artillery. Bakehouse.
2. Two buttons. Face portion of a two-piece brass button. An eight-pointed star, within which, in a circle, the raised letters GR with a probable crown covering the eighth point of the star; above, the word CANADIAN; below, the word MILITIA in raised Roman letters. 22 mm diameter (Fig. 124r). Identical to Emilio (1911: no. 690), War of 1812. Cookhouse, old English fort.
3. On plain background in centre, in relief, a curved horn or bugle, with the numeral 6 in twist of bugle; above, the word CANADIAN; below, the word MILITIA; all within raised rim. Back: HERBERT & CO. LONDON. 25 mm diameter (Fig. 124a). Probably War of 1812 period. Cookhouse.
4. In relief, crown and garter with ROYAL SAPPERS & MINERS in centre of garter, foliated script WR in centre. Back: DOLAN'S LONDON (Fig. 124t). Royal Sappers and Miners in Canada 1794-1856, but the name was assumed in 1813; at Ile-aux-Noix 1814, 1821-22, 1842 (Stewart 1964: 61, 62). Found in operation 1.
5. Three buttons. In relief, numerals 65 surmounted by crown, within a raised circle. Back: NUTTING LONDON. 19 mm diameter (Fig. 124i). The 65th Regiment of Foot (York and Lancaster Regiment) was in Canada in the 1838-41 period (Stewart 1964: 274). Cookhouse, gun shed and operation 1 area.
6. In relief, a bugle, with strings and knot; a crown above; within the curve of the bugle the numerals 71; a thistle wreath around. Back: C. JENNENS LONDON. 17 mm diameter (Fig. 124k). The 71st Regiment of Foot (Highland Light Infantry) in Canada in 1824-31 period and 1838-52, with detachment sent to Ile-aux-Noix in 1827 (Stewart 1964: 295). A Major E. White of the 71st was the Officer Commanding at the island, 28 August 1841 (Lee et al 1967). Button is identical to no. 658 of Emilio (1911), who ascribes it to the Highland Light Infantry. Cookhouse.
7. In relief, numerals 89 within a circle. Back: GILPIN & CO. NORTHUMBERLAND LONDON. 20 mm diameter (Fig. 124l). The 89th Regiment of Foot (2nd Battalion Princess Victoria's; Royal Irish Fusiliers) in Canada 1812-15, 1841-47 (Stewart 1964: 370). Cookhouse.
C Brass buttons, ball-type, domed and hollow, with slightly rounded backs, fairly high eye probably soldered to the base. Not decorated. Two buttons, each 13 mm in diameter. Lime kiln area and operation 10.

D Brass buttons, solid cast, flat, spun back, boss with brass eye cast in place; not decorated. Five buttons, 16 mm to 28 mm in diameter. Buttons similar to those described by South (1963: Type 7, 1726-76 context) and Olsen (1963: Type D, 1760-85). Old English fort and bakehouse.

E Brass buttons, solid cast, flat to slightly convex, brass eye soldered onto back; plain face; writing and designs stamped on back; surfaces gilded. Twenty buttons, ranging in diameter from 14 mm to 22 mm. Lettering on backs of buttons: GILT with eight stars; DOUBLE GILT, LONDON, wreath around outer border; TREBLE GILT in large letters, BRIGHT ORANGE in small letters; GILT with floral wreath; GILT; eagle above seven stars, in circle, in relief; BEST PLATED, with wreath; PLATED. Buttons of this type have been found by South (1963: Type 18) in an 1800-30 context. Cookhouse, ordnance store, bakehouse, barracks.

F Brass buttons identical to type E buttons in form, but without decoration or lettering on back. Two buttons, 15 mm and 17 mm in diameter. Hospital and cookhouse.

G Brass buttons, solid cast, slightly convex, no decoration; heavy eye cast with button, with eye hole drilled. One button, 13 mm diameter.

H Brass buttons, solid, convex, with brass eye soldered to back; no writing on back; face decorated.
1. Impressed on face of button an upright, fouled anchor on plain background; vertical parallel lines on shank; horizontal parallel lines of stock, fluke, and arm. 20 mm diameter (Fig. 124aa). Probably Royal Marine or Royal Navy button, both of which were active on Ile-aux-Noix in the 1812-34 period (Hooper 1967; Lee et al 1967). Old English fort.
2. Within a depressed, lined shield, three fieldpieces, one above another; above them, in upper part of shield, three balls. 20 mm in diameter (Fig. 124p). Probably Royal Regiment of Artillery, in Canada from 1724-1907 (Stewart 1964: 41-56) and listed at Ile-aux-Noix in 1813, 1843, 1849,
1850, 1862, 1864 and 1868 (Lee et al 1967). Barracks.
3. Face badly worn. In relief, numeral 15 within a circle with star-rays radiating outward. 16 mm diameter. The 15th Regiment of Foot (East Yorkshire) at Ile-aux-Noix in 1830 and 1838 (Stewart 1964: 120). A detachment of the 15th at the island on 31 October 1832 (Lee et al 1967). Button identical to Emilio (1911: no. 703), Army, 15th Foot, 1827-40. Barracks.

I Brass buttons, solid, slightly convex, distinct foot where brass eye soldered to back, decorated front, plain or decorated back, often gilt.
1. Gold gilt, curvilinear design in relief on face; stamped on back is G & W BOGGETT & CO. LONDON. 25 mm diameter (Fig. 124w). Cookhouse.
2. In relief on face, DONNEGAL over crown. Back is plain. 17 mm diameter (Fig. 124g). Cookhouse.
3. On face, ROYAL MARINES over anchor and laurel. Back plain, gilt. 15 mm diameter. Identical to no. 694 of Emilio (1911), who says that the Marines were made "Royal" in 1802. Royal Marines at Ile-aux-Noix in 1813 and 1814 (Stewart 1964: 421-2). Cookhouse.
4. In relief, ASSAYE above crown and elephant; XIX below elephant; letter L to left of elephant, letter D to right of elephant. Letters LD signify Light Dragoons (Fig. 124u). The 19th (Prince of Wales Own) Hussars in Canada 1813-16 with a detachment at Ile-aux-Noix in the 1814-16 period (Stewart 1964: 37). Hospital.

J Stamped brass buttons, with sunken panel, four-holed. Four buttons, 14 mm or 16 mm in diameter. One button has stamped on the face WARRANTED NOT TO CUT. Another button has stamped on the back G. BARNETT AND P. ARMFIELD'S PATENT. The latter type has been found by South (1963: Type 32) in a 1837-65 context. Hospital, cookhouse.

Iron
A Ten buttons, stamped iron, with sunken panel, 13 mm to 17 mm in diameter. On one button is stamped TURNER & CO. PATENT. Hospital, bakehouse, operation 1 area.

Glass, White (Fig. 125c)
A Four-holed plain, slightly curved back, sunken panelled face, 8 mm to 15 mm in diameter. Ten buttons. Hospital, cookhouse, bakehouse.
B Four-holed, decorated on face with moulded or painted designs (red), 10 mm in diameter. Six buttons. Cookhouse, bakehouse.

C Button with cone-shaped face and iron eye attached to hole in back. 10 mm in diameter. Three buttons. Hospital.

D Mould-decorated glass button, 10 mm in diameter, inset into brass ring 15 mm in diameter; brass is 6 mm in height with evidence of iron on back (Fig. 125d). Cookhouse.

Bone (Fig. 125f, g)
A Flat button with one central hole, no rim, 15 mm to 18 mm in diameter. Six buttons from the hospital, cookhouse, old English fort, barracks and bakehouse.
B Button with both surfaces slightly convex, one central hole, 13 mm in diameter. Two buttons. Cookhouse and bakehouse.
C Two-holed, thick (8 mm) button with flattened back showing two holes and centring hole for cutting tool, face two-holed in small sunken panel. 20 mm in diameter. Gun shed.
D Three-holed, flat back, sunken panel in face, 11 mm diameter. Four buttons. Cookhouse, gun shed and hospital.
E Four-holed, flat back, sunken panelled face, 18 mm diameter. Five buttons. Hospital, cookhouse.
F Four-holed, rounded back, sunken panelled face, 13 mm to 28 mm diameter. Seventeen buttons. Cookhouse, hospital, bakehouse.
G Five-holed, slightly rounded back, sunken panelled face, 17 mm in diameter. Four buttons. Hospital and cookhouse.

Wood (Fig. 125h)
A Four-holed button, solid, convex, with spin marks on both sides; painted green; 23 mm in diameter. One button from the old English fort.

Shell (Fig. 125a)
A Two-holed, flat, no rim, with circle cut near edge; 10 mm to 13 mm in diameter. Three buttons from cookhouse and gun shed.
B Three-holed, one side flat, face slightly cone-shaped with a sunken panel. 8 mm in diameter. Two buttons. Cookhouse.
C Four-holed, flat back, sunken panelled face, some decorated with star-like cut decoration around panel; 10 mm in diameter. Five buttons. Cookhouse and old English fort.
D Four-holed, both surfaces flat; face usually decorated with star or ray patterns; 6 mm to 14 mm in diameter. Fourteen buttons. Hospital, cookhouse, gun shed.
Shell disc 20 mm in diameter with brass eye inset into back and brass links fastened to eye. Possibly a sleevelink (Fig. 125b).

Pottery

The majority of pottery excavated at Ile-aux-Noix is 19th century in date and for the most part is difficult to date specifically and identify. English wares predominate, but several redwares were tentatively identified as Canadian-made.

Earthenwares comprise 97.6 per cent (21,217 sherds) of the total sample. Twenty types of earthenware were separated on the basis of paste, glaze or decoration. Pearlwares predominate, as most decorated and plain wares had a white body with a bluish-tinted glaze. Plain pearlware (31.9 per cent), creamware (29.7 per cent) and transfer-printed ware (27 per cent) comprise 88.6 per cent (19,109) of the total earthenware. Earthenwares are chiefly of the table variety, with a relatively small percentage of utilitarian redwares. Presumably few local ceramics were purchased.

Stonewares comprise only two per cent (474 sherds) of the total pottery sample. The most common kind of stoneware found was an English salt-glazed blacking bottle or container, which comprised 93 per cent of the total stoneware found in 1964.

Porcelain and ironstone sherds were relatively rare.

The pottery types and their distribution are summarized in Tables 5 and 6. The majority of ceramics, like the artifacts in general, were found in the hospital-cookhouse complex, where 21 (hospital) and 22 (cookhouse) types were found. All structures or areas yielded ceramics.

A description of the types of pottery follows.

Earthenware

1. Slipped Redware. The interior is white slipped over a fairly hard red paste with a yellowish lead glaze over the slip. The lip of the rim and the exterior wall to about 1/2 in. above the base is clear lead glazed only. Shape: deep pans circa 9 cm in depth and circa 30 cm in diameter. Rim is flattened and rolled, and the base is flat with a slight exterior flange.

This type of redware is probably Canadian, from Quebec or the Maritimes. A similar pot is illustrated in Webster (1971b: 10, lower): a milk skimming bowl from Nova Scotia, circa 1870. Another possible source of this ware is the Charles Pearson Pottery, Iberville, Quebec, circa 1880.

2. Black-Glazed Redware. Teapots and pans with a black opaque glaze. Pans are circa 9 cm in height with thin
(5 mm) outsloping walls and an inward-rolled thickened rim. The interior is glazed. Probably English in origin.

3. Green-Glazed Coarse Earthenware. A. Seven sherds from one or more vessels are from a pan circa 30 cm in diameter, glazed only on the interior. The rim is thickened and rolled inward, with evidence of one slightly depressed spout (Fig. 114f).

B. The bottom half of a large bowl or jar, very heavy, crude and poorly fired. Base is 13 cm in diameter. The pot has outsloping walls and only the interior is glazed.

4. Glazed Redware. A clear lead-glazed (interior only) pan with a flat base (17 cm in diameter). The rim is thickened and rolled inward.

5. Decorated Redware. This ware is similar to no. 1 described above except for its basal shape (no flange) and decoration. The interiors of these deep pans exhibit sponged or dribbled decoration in brown, not unlike a Rockingham-type glaze. The exteriors are undecorated and unglazed.

This ware was probably made in the Maritimes or Quebec. A similar example is illustrated in Webster (1971b: 90, lower) and is probably from Nova Scotia or Prince Edward Island, circa 1860-80. Again the possibility exists that the ware was manufactured by Quebec potters such as Charles Pearson (Iberville, circa 1880) or the Dion Pottery (spattered redware produced into the 1920s) (Webster 1969). (Fig. 11ld).

6. Slip-Decorated Redware. Milkpan-like vessels, circa 28 cm in diameter, with a flattened rim and thickened lip. The vessel interior exhibits a white slip decoration which appears yellow in contrast with the red-glazed body. The exterior is not glazed.

This redware is probably Canadian in origin (Fig. 114g).

7. Lustre Ware, Red Paste. Small fragments are copper and yellow in colour and shape is unknown. English, 19th century.

8. Tin-Glazed Earthenware. Bowl and drug jar fragments have a light blue tin glaze with handpainted decoration in blue. English, 18th century.

9. Creamware. Four shapes are represented: small bowls; large, heavier bowls; plates and serving dishes; jars. Plate rims exhibit a variety of moulded decoration including Queen's Pattern, Royal Pattern and feather-edged. One complete serving dish has the impressed mark CHETHAM & WOOLEY. Jar-like containers are straight-sided, 9 cm in diameter, with a V-groove on the exterior just below the rim (Fig. 109).

Creamware dates to circa 1765 into the first half of the 19th century.

10. Mocha Ware. Pitcher and bowl fragments with dendritic moss decoration in black with orange and brown background.
Probably English (Fig. 111b).

Another cruder variety of mocha may be Canadian in origin, notably from Brantford, Ontario (circa 1875-90) or the Cap Rouge potteries, Quebec (circa 1870-80) (Webster 1971b: 181).

11. **Slip Banded.** Small bowls with annular bases are either decorated by raised slip banding in white or blue, or in a mocha style in blue or black over a white-zoned background set off by dark annular lines.

These pots may have been manufactured at Brantford, Ontario (circa 1875-90) or the Cap Rouge, Quebec, potteries (circa 1870-80) (Webster 1971b: 181).

12. **Plain Pearlware.** A variety of shapes - plates, cups, handled bowls, saucers - with a white body and a lead glaze with a slight bluish tint. The majority of vessels are not decorated although some exhibit moulded decoration (Fig. 110). Origin: England, late 18th to first half of 19th century.

  A few impressed marks appear on some body sherds: PHILLIPS - LONGPORT (the N in Longport is reversed), a mark dated to the early 19th century, and DAVENPORT above an anchor, which probably stands for J. Davenport, 1793-1882.

13. **Blue Handpainted Pearlware.** Thin, porcelain-appearing cups and bowls with blue handpainted decoration, utilizing leaf motifs and combining delicate and wide brushmarks (Fig. 112b).

14. **Delicate-Painted Pearlware.** Vessels, mostly shallow bowls, with delicate, thin-line, handpainted decoration in polychrome colours - brown, yellow, blue, orange, green. Decoration is on the interior on a majority of fragments. One vessel has a bridge scene with a human figure (Fig. 112c). Another nearly complete small plate has slightly coarser designs with a multi-coloured fish painted in the centre of the vessel (Fig. 112a).

15. **Sponged.** Sponged-stamped decorative motifs on cups, plates, bowls and saucers, in blue, brown, red, purple, blue or green. Some vessels combine blue sponging in zones, the zones sometimes being outlined by red or green lines (Fig. 111a). Origin: England. This ware was in great demand between the 1840s and 1880s (Hughes 1959: 71).

16. **Gaudy Dutch-Like Vessels.** Vessels with decoration by handpainting of bold, wide strokes in dark red, greens, yellow and blue. Leaf motifs are common (Fig. 112d).

17. "**Annular**" Ware. This ware is distinguished by lines of coloured slip around the exterior of the vessels, mostly bowls. Decoration consists of either narrow bands often alternating with wider coloured areas on the rim or bands of slip sometimes accompanied by smearing and/or combing of different coloured slips (Fig. 111c).

18. **Shell-Edged Ware.** Plates with blue or green shell-edged decoration impressed on rim. Variation exists
in the type of "shell" impressions. A minority of rims are painted only in an attempt to represent shell-edging (Fig. 114a). Origin: English, late 18th and 19th centuries.

19. Green-Banded. Small plates with a dark green band on the rim near the lip, at the juncture of the rim and shoulder, and on base - on interior surface only. Plates are circa 18 cm in diameter. Slightly raised annular base (Fig. 114b).

20. Transfer-Printed. Transfer-printed decoration in blue represents circa 95 per cent of the sample with five per cent of sherds transfer printed in other colours - black, brown, red, purple or green. The majority of sherds, from plates, saucers, cups and bowls, are very small, making it difficult to classify decorative motifs. Geometric designs as well as basketwork designs, naturalistic motifs and stylized curvilinear motifs were common (Fig. 113a-f).

Stoneware

21. White Salt-Glazed Stoneware. Plate fragments with moulded decoration of the Barley pattern on the rim (Fig. 115a). Origin: England, mid-18th century.

22. Black Basaltes Ware. Only eight sherds were found, all with moulded decoration (Fig. 115b). Origin: English, late 18th century or 19th century.

23. Yellow Stoneware. Stoneware with a yellow-buff body, possibly caneware. The exterior exhibits engine-turned decoration. One sherd has handpainted neo-classical designs in black. Exterior is not glazed, while the interior is lead glazed.

24. Brown to Grey Stoneware Bottles, Blacking Cups and Inkwells. All vessels are finely salt-glazed.
   a) Blacking bottles are cylindrical in shape with a large mouth diameter (3 cm to 5 cm) and a flat base. Height varies from 14 cm to 17 cm and basal diameter from 6 cm to 7 cm. The words BLACKING BOTTLE are impressed near the base on some specimens (Fig. 115d).
   b) A few narrow-mouthed bottles (neck and shoulder fragments only) were found.
   c) Probable blacking cups or containers are V-shaped with a raised base. A V-groove is present on the exterior immediately below the lip. Height: 6 cm to 9 cm; diameter at rim: circa 7.5 cm; diameter at base: 3.5 cm (Fig. 115d).
   d) Inkwells are circular with squat bodies, short necks, and flat bases. Size of two complete specimens are height: 4.4 cm and 4.8 cm; diameter: 5.8 cm and 4.7 cm; mouth diameter: 1.3 cm (Fig. 115e).

25. Lead-Glazed Stoneware. A large vessel fragment is vertical-sided with an inward-sloping shoulder. Impressed bead designs appear on the wall just below the juncture with the shoulder. Basal diameter: 16 cm (Fig. 115f).
Porcelain and Ironstone
26. Porcelain. Forty-two sherds, representing a minimum of 15 vessels, are decorated in underglaze blue colours or overglaze reds and other colours (Fig. 115c).
27. Ironstone. Grey ware with hard paste. Plates and bowls with moulded or painted decoration (Fig. 114c).

Stemware
The following stemware types were found at Port Lennox in 19th-century contexts, the majority from the English fort area and bakehouse (Table 7):
1. Stems with a slight knop at the juncture with the foot, the foot being conical and folded. The bowl is trumpet-shaped. At least 28 vessels of this type were found.
2. Plain stems with trumpet bowls, with a plain or solid conical foot. At least seven vessels are represented in the sample.
3. A stem fragment, similar to type 1 above, has vertical fluting below the bowl and on the knop.
4. Several hollow stem fragments with a baluster knop.
5. One stem fragment has an annular knop and a bucket bowl.

Clay Tobacco Pipes
White clay tobacco pipes, manufactured in England, Scotland and Quebec, were found in all areas excavated with the exception of the forge. The majority of pipes were found in the hospital-cookhouse complex and the bakehouse (Table 8) in 19th-century contexts. The pipes themselves are difficult to date compared with more thoroughly researched 18th-century pipes. Bowl shapes appear to be quite variable in the 19th century and dating is more confused due to the fact that pipes were also being made in Quebec. Comparison of Lennox bowls with dated pipe shapes found in Oswald (1975) and others was relatively useless as 19th-century Lennox pipes resembled some dated pipes, but were not identical and possibly Canadian-made of a different date.
Pipestem dating is invalid after circa 1780 which means that circa 95 per cent of the Lennox sample is relatively useless for analysis. Of the 3,735 pipestems recovered, 82 had impressed names of makers which were identifiable and somewhat datable.
In the 12 excavation areas included in the present report, 169 pipebowls, mostly fragments, were recovered. The bowls have been classified using the criteria of shape, the presence or absence of mould decoration and makers' marks (Fig. 119).
Plain Bowls (Not Decorated)

A Twelve bowls with spurs do not have makers' initials or marks. Three bowl shapes are represented: the first shape resembles one dated to the circa 1760-1800 (Oswald 1975: Fig. 4, no. 23); the second shape with a more vertical bowl, may date to circa 1730-80 (Oswald 1975: Fig. 4, no. 22); the third bowl resembles a circa 1840-60 bowl illustrated by Oswald (1975: Fig. 8, no. 18).

B Plain bowls with makers' initials impressed or in relief on back of bowl, without any marks on spurs.
1. The letters TD within a circle, both impressed into the back of the bowl. Fifteen pipe bowls were recovered from 19th-century contexts. All bowls had relatively straight-sided walls with spurs. The TD mark, beginning in the 1760s (Walker 1971: 64, 65), also continues in the 19th century (Oswald 1975: 67).
2. Thirteen bowls have the letters TD impressed into the back of the bowl but not within a circle, as above. On one fairly complete pipe the stem is impressed with HENDERSON MON TREAT, dating the pipe to the circa 1848 to circa 1880 period (Collard 1967: 342).
3. Eleven bowl fragments with spurs have the letters TD within a circle, in relief. The circle is a plain line or is composed of dots. Markings such as these date from the late 18th century to the mid-19th century (Oswald 1975: 67).
4. The mark TD, in relief, not within a circle, on the bowl backs of 16 pipe bowls fragments. Discernable shapes are probable Henderson pipes, circa 1848 to circa 1880. The use of large separate initials, especially TD pipes in America, begins at the end of the 18th century and continues to the mid-19th century (Oswald 1975: 67).

C Plain bowls with makers' marks (initials or name) on back of bowl and initials on spur.
1. Seven bowl fragments each have the initials TD impressed on the bowl back and the letters T and D in relief on opposite sides of the spur. Similar marks are illustrated by Walker (1966: Figs. 4, 5) and dated by him to the mid-18th century. TD marks are found into the 19th century also (Oswald 1975: 67).
2. On nine bowl fragments, the back of each bowl is impressed with TD and a decorative motif above and below within a rouletted or plain circle. The spur has the raised letters W and G on opposite sides. The WG mark is probably William Goulding Jr., a London pipemaker who worked from 1733-62 (Oswald 1975: 66, 67, 137).
3. Three bowl fragments are impressed with the initials WG with a decorative motif above and below within a rouletted circle. On one specimen the WG mark is upside down on the bowl back. On the spur, in relief, the letter W on one side and the letter G on the opposite side. Probably made in the period 1733-62 (see above).

4. Five bowls, all from operation 20, with a flat-bottomed spur (Fig. 119). The name VINER is impressed within a rouletted circle on the back of the bowl. On the spur in relief are the initials A and V on opposite sides. Anne Viner of Bristol manufactured pipes in the 1775-1805 period (Oswald 1975: Fig. 9, no. 19).

D Plain bowls with initials on spur only.
1. In relief on one pipe, the initials S and E on opposite sides of the spur.
2. In relief, the initials M and G slightly above the spur at the stem-bowl juncture. On three of the five specimens, the numeral 9 appears below the M initial.

E Plain bowl with name impressed on back of bowl. No spur is present. One pipe has two words, a blurred upper word ???LO, and a lower word ???STRAND. The rim of the bowl is rouletted below the lip. The use of a full name on bowl backs started circa 1770-80 and continued to circa 1850 or later (Oswald 1975: 67).

Pipes with Moulded Decoration
Pipes with moulded decoration in relief on the bowl were nearly equal in occurrence to plain bowls (Table 8). A variety of moulded designs cover all or a portion of the bowl: leaf designs, fluting, fleur-de-lis with a thistle; masonic emblems; effigy bowls in the shape of a human head; etc. A minority of bowls or spurs have makers' initials. Two pipes have a TD mark in relief on the back of the bowl. Several pipes have one initial on each side of the spur in relief - the letters H or I and an inverted T; W and W; M or W on one side of spur only.

Pipes with Makers' Names
A total of 3,735 pipe stems were found, 82 of which are marked with makers' names and place of manufacture:

R. BANNERMAN MONTREAL
One stem from the hospital. Bannerman was a Montreal clay-pipe maker in the early 1860s. In 1888-89 Bannerman Bros. are listed as clay-pipe makers (Collard 1967: 334).
BELL QUEBEC
One stem from the hospital. William and David Bell of Quebec made common earthenware and tobacco pipes from the 1850s into the 20th century (Collard 1967: 334).

A. COGHILL GLASGOW
Fourteen stems from the hospital and other sites (Table 8). Alexander Coghill was a pipemaker from 1826-1904 (Oswald 1975: 205).

HENDERSON or HENDERSON'S MONTREAL
Thirty-four pipe stems were found bearing the Henderson makers' mark (Table 8; Fig. 119). The Hendersons, including William Henderson, James M. Henderson and James M. Henderson Jr., were Montreal clay-pipe makers. William Henderson is listed in the Montreal directories beginning in 1848. Henderson listings end with James M. Henderson and Son in the later 1870s (Collard 1967: 342).

McDOUGALL GLASGOW
Eight stems from four sites on Ile-aux-Noix. Duncan McDougall and Co. operated from 1847 to 1968 (Oswald 1975: 205).

MURRAY GLASGOW
Two stems, one each from the cookhouse and bakery. The firm of William Murray and Co. dates to 1830-61 (Oswald 1975: 205).

W. WHITE GLASGOW
Twenty-two stems. William White is listed as a pipemaker from 1805 to 1855 (Oswald 1975: 206).

Tumblers
Tumblers or drinking glasses are of clear glass, either plain or with moulded decoration. In the sample of 74 vessels, plain tumblers outnumber mould-decorated tumblers by 61 to 13 (Table 9). Tumbler bases are the most common finds. Basal diameters vary from 1-3/4 in. to 3-1/2 in. with 47 bases measuring to the 2 in.- to 2-5/8-in.-size range. Side walls slope outward slightly. Of the 61 non-decorated tumblers, 45 have pontil marks present on the base whereas 16 tumblers have had the pontil mark ground off. Tumblers were found at all structural features in 19th-century contexts with the exception of the forge and lime kiln area.
Conclusions

The archaeology carried out in 1964 on Ile-aux-Noix was a definite success. A number of Canadian students were trained in archaeological field and laboratory procedures and interpretation. As a result of the training program, nine buildings or presumed buildings were precisely located and two additional areas (lime kiln, well) were explored. Two of the structures, the cookhouse and the hospital, were thoroughly excavated. The remaining structures or areas were only partially excavated. Given the incompleteness of excavation of the majority of structures, it is difficult to put forth definite conclusions based on the archaeological evidence.

Building foundations were constructed of local stone materials with footings of brick-bats (hospital) or wood (gun shed). The ovens of the bakehouse were built entirely of brick. Foundation walls generally displayed only fair workmanship.

The identification of excavated buildings was accomplished by comparison of their location and size with original architect's drawings and maps; however, the characteristics of the foundations also gave clues as to the functions of the buildings. The large size of the barracks and hospital structures, for example, implies communal functions. The large hearth found in the cookhouse and the location of the cookhouse near the hospital suggests a function geared toward meal production for hospital patients. The plan of the bakehouse structures and the use of brick for the ovens suggest a cooking-baking function.

Artifacts found in the destruction debris of the buildings yielded little information as to original usages of the structures. The majority of artifacts were found associated with the hospital-cookhouse structures which reflects not only more intensive cooking-eating activity in this area in the 19th century, but also the more thorough archaeology carried out on these structures in 1964. Other structures yielded generally the same kinds of artifacts, but fewer of them. Only the forge area yielded distinctive artifacts - broken iron tools which suggested a blacksmithing function.

The excavated artifacts, dating from different times
within the 19th century, could not be stratigraphically separated for dating purposes. The majority were found in either a disturbed topsoil layer or a presumably disturbed debris stratum, the latter dating to the demise of the particular structure. Glass, pottery and tobacco pipes constitute 97 per cent of the artifact sample. Nearly all of these artifacts came from England with the exception of some locally-made items. Only three per cent of the artifacts recovered were of metal. Iron artifacts were very few in number, perhaps indicating a general scarcity of iron in the settlement or the reworking of broken iron tools as is suggested by the forge finds which further indicates scarcity. Numerous iron nails were found in the excavations. Unfortunately, the nails could not be studied for this report. Except for the presence of various military artifacts, such as regimental buttons and insignia, the artifact assemblage was essentially a civilian one. It is interesting to note the large variety of ceramics that were in use on the island. The cookhouse and hospital, for example, yielded 21 types and 22 types respectively. Very few porcelain or stoneware vessels were utilized. It is unfortunate that circumstances dictated that the animal bone found in the excavations could not be studied for the present report.
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1936

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1967  

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1970b  

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1965  
1966  
1973  

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1967  

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1968  

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1941  
1960  
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1963

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1968

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1963

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1964

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1966

1971

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1968

1969
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1971a

1971b
Early Canadian Pottery. New York Graphic Society, Greenwich, Conn.

1971c

1974
Table 1. Comparison of 1964 Archaeological Measurements of the Garrison Bakehouse with Measurements from an 1823 Plan

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*North-south measurements taken from north wall to north edge of interior brick pavement.
†North-south measurement taken from south wall to north edge of interior brick pavement. East-west extent of room was not determinable from the archaeological evidence.
††Oven measurements taken from the 1823 drawing are not precise as the interior oven walls are curved.
§Measurements represent probable interior oven measurements.
Table 2. Distribution of Bottle Glass

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Table 4. Regimental Buttons Excavated in 1964

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<td>65th</td>
<td>5G1, bakehouse, cookhouse, gun shed</td>
<td>1838-41</td>
</tr>
<tr>
<td>71st</td>
<td>Hospital, cookhouse</td>
<td>1824-31, 1838-52</td>
</tr>
<tr>
<td>89th</td>
<td>Cookhouse</td>
<td>1812-15, 1841-52</td>
</tr>
<tr>
<td>100th</td>
<td>Hospital, cookhouse</td>
<td>1866-68</td>
</tr>
<tr>
<td>Royal Provincials</td>
<td>English fort</td>
<td>1776-83</td>
</tr>
<tr>
<td>Royal Regiment of Artillery</td>
<td>Bakery, cookhouse, barracks, ordnance</td>
<td>1813, 1843, 1849, 1850, 1862, 1864, 1868</td>
</tr>
<tr>
<td>Royal Sappers and Miners</td>
<td>5G1</td>
<td>1814, 1821-22, 1842</td>
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<tr>
<td>Canadian Militia</td>
<td>Cookhouse, fort</td>
<td>1812-15</td>
</tr>
<tr>
<td>Royal Marines</td>
<td>Cookhouse, fort</td>
<td>1812-34</td>
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Table 5. Pottery Tabulation*

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Sherds</th>
</tr>
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<tbody>
<tr>
<td>1. Slipped Redware</td>
<td>80</td>
</tr>
<tr>
<td>2. Black-glazed Redware</td>
<td>50</td>
</tr>
<tr>
<td>3. Green-glazed Earthenware</td>
<td>9</td>
</tr>
<tr>
<td>4. Glazed Redware</td>
<td>40</td>
</tr>
<tr>
<td>5. Slip-Decorated Redware</td>
<td>27</td>
</tr>
<tr>
<td>6. Yellow Slip-Decorated Redware</td>
<td>30</td>
</tr>
<tr>
<td>7. Lustre Ware</td>
<td>6</td>
</tr>
<tr>
<td>8. Tin-Glazed Earthenware</td>
<td>15</td>
</tr>
<tr>
<td>9. Creamware</td>
<td>6,436</td>
</tr>
<tr>
<td>10. Mocha</td>
<td>70</td>
</tr>
<tr>
<td>11. Slip-Banded</td>
<td>230</td>
</tr>
<tr>
<td>12. Plain Pearlware</td>
<td>6,936</td>
</tr>
<tr>
<td>13. Blue Handpainted Pearlware</td>
<td>85</td>
</tr>
<tr>
<td>14. Delicate-Painted</td>
<td>129</td>
</tr>
<tr>
<td>15. Sponged</td>
<td>240</td>
</tr>
<tr>
<td>16. Gaudy Dutch</td>
<td>340</td>
</tr>
<tr>
<td>17. &quot;Annular&quot; Ware</td>
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</tr>
<tr>
<td>18. Shell-Edged</td>
<td>480</td>
</tr>
<tr>
<td>19. Green-Banded</td>
<td>27</td>
</tr>
<tr>
<td>20. Transfer-Printed</td>
<td>5,737</td>
</tr>
<tr>
<td>21. White Salt-Glazed Stoneware</td>
<td>11</td>
</tr>
<tr>
<td>22. Black Basalte</td>
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</tr>
<tr>
<td>23. Yellow Stoneware</td>
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<tr>
<td>24. Brown-Grey Stoneware</td>
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<tr>
<td>25. Lead-Glazed Stoneware</td>
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</tr>
<tr>
<td>26. Porcelain</td>
<td>42</td>
</tr>
<tr>
<td>27. Ironstone</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21,745</strong></td>
</tr>
</tbody>
</table>

*Nos. 9, 12, 20 total 19,109 or 88 per cent of the sample.
Total earthenware (nos. 1-20) = 21,217 or 97.6 per cent.
Total stoneware (nos. 21-25) = 474 or 2 per cent.
Table 6. Pottery Type Distribution

<table>
<thead>
<tr>
<th>Pottery Type</th>
<th>Hospital</th>
<th>Cookhouse</th>
<th>Gun Shed</th>
<th>Fort</th>
<th>5G10</th>
<th>Bakehouse</th>
<th>Ordnance</th>
<th>Barracks</th>
<th>Well Area</th>
<th>Forge</th>
<th>Lime Kiln</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Slipped Redware</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>3. Green-glazed Earthenware</td>
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<td>9. Creamware</td>
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<td>x</td>
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<td></td>
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<td></td>
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<tr>
<td>23. Yellow Stoneware</td>
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<td></td>
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<td>x</td>
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<tr>
<td>25. Lead-glazed Stoneware</td>
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<td>26. Porcelain</td>
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<td></td>
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</tr>
<tr>
<td>27. Ironstone</td>
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<td>x</td>
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<td></td>
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</table>

Total no. of types  21  22  12  18  10  15  17  10  15  7  6
Table 7. Distribution of Stemware Fragments

<table>
<thead>
<tr>
<th>Type</th>
<th>Hospital</th>
<th>Cookhouse</th>
<th>Gun Shed</th>
<th>Fort</th>
<th>Bakehouse</th>
<th>Ordnance</th>
<th>Well Area</th>
<th>Forge</th>
<th>Lime Kiln</th>
<th>Totals</th>
</tr>
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<td>9</td>
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<td>Type 4</td>
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<td>40</td>
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</table>
Table 8. Tobacco Pipe Distribution

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<tr>
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<th>Cookhouse</th>
<th>Gun Shed</th>
<th>Fort</th>
<th>5G10</th>
<th>Bakehouse</th>
<th>Ordnance</th>
<th>Barracks</th>
<th>Well Area</th>
<th>Lime Kiln</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bowls (whole and frags.)</strong></td>
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<td></td>
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</tr>
<tr>
<td>Plain, unmarked</td>
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<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Plain, marked</td>
<td>17</td>
<td>22</td>
<td>4</td>
<td>13</td>
<td>13</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>82</td>
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</tr>
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<td>Mould-decorated</td>
<td>16</td>
<td>31</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>75</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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<td>56</td>
<td>6</td>
<td>20</td>
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<td>23</td>
<td>4</td>
<td>13</td>
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<td>8</td>
<td>169</td>
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</tbody>
</table>

| Stems               |          |           |          |      |      |           |          |          |           |           |        |
| 4/64 in.            | 219      | 422       | 71       | 242  | 28   | 671       | 8        | 353      | 8          | 2016      |        |
| 5/64 in.            | 151      | 242       | 41       | 188  | 13   | 640       | 13       | 317      | 13         | 1607      |        |
| 6/64 in.            | 5        | 5         | 2        | 1    |      | 14        | 2        | 1        | 30         | 3653      |        |
| **Total**           | 376      | 669       | 114      | 431  | 41   | 1325      | 23       | 671      | 36         | 3904      |        |

| Marked Stems        |          |           |          |      |      |           |          |          |           |           |        |
| R. BANNERMAN MONTREAL | 1        |           |          |      |      |           |          |          |           |           | 1      |
| BELL QUEBEC         | 1        |           |          |      |      |           |          |          |           |           | 1      |
| A. COGHILL GLASGOW  | 1        | 2         | 1        | 10   |      |           |          |          |           |           | 14     |
| HENDERSON MONTREAL  | 4        | 16        | 2        | 1    | 4    |           |          |          |           |           | 27     |
| HENDERSON'S MONTREAL | 1       | 1         | 1        | 5    |      |           |          |          |           |           | 7      |
| McDougall GLASGOW   | 1        | 4         | 1        | 2    |      |           |          |          |           |           | 8      |
| MURRAY GLASGOW      | 1        |           | 1        |      | 2    |           |          |          |           |           | 2      |
| W.WHITE GLASGOW     | 4        | 8         |          | 1    | 9    |           |          |          |           |           | 22     |
| **Total**           | 12       | 32        | 3        | 3    | 1    | 27        | 4        |          |           |           | 82     |

| Combined Total      | 424      | 757       | 123      | 454  | 43   | 1375      | 31       | 684      | 1          | 8         | 3904   |
Table 9. Glass Tumbler Distribution

<table>
<thead>
<tr>
<th></th>
<th>Hospital</th>
<th>Cookhouse</th>
<th>Gun Shed</th>
<th>Fort</th>
<th>5G10</th>
<th>Bakehouse</th>
<th>Ordnance</th>
<th>Barracks</th>
<th>Well Area</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pontil marks present</td>
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<td>5</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>12</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>45</td>
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<td>1</td>
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<td>1</td>
<td>11</td>
<td>16</td>
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</tr>
<tr>
<td>Mould Decorated:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>13</td>
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<tr>
<td>Totals</td>
<td>8</td>
<td>9</td>
<td>1</td>
<td>10</td>
<td>2</td>
<td>14</td>
<td>11</td>
<td>3</td>
<td>16</td>
<td>74</td>
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ILLUSTRATIONS
1 Location of Ile-aux-Noix, Quebec.
2 Infra-red aerial photograph of Ile-aux-Noix and Fort Lennox. (Canada. Department of Energy, Mines and Resources.)
3 Plan of Fort Lennox by Durnford, 1823. (Public Archives Canada, 17707.)
4 Site locations and designations, 1964.
5 English fort area (5G7): plan drawing of excavated remains.

6 Section over the stone drain: 1, sandy loam; 2, gravel; 3, brick, and 4, brown soil.
Section over the wooden sewer: 1, water; 2, grey clay; 3, grey clay mixed with sand; 4, sand; 5, clay mixed with gravel; 6, clay; 7, gravel; 8, brick and mortar; 9, brown soil mixed with mortar and brick; 10, brown soil and mortar; 11, blue clay, and 12, brown soil mixed with clay.
8 Reconstruction of the wooden sewer with iron grill.

9 Detail of the sewer construction (opposite No. 1, Fig. 8).
10 Detail of the sewer construction (opposite No. 2, Fig. 8).

11 Detail of the sewer construction (at No. 3, Fig. 8).
12 Northeast corner of the commissary store.

13 Southeast corner of the commissary store.
14 Portion of the east wall of the commissary store at point where the later trench has cut through it.

15 Gravel pavement with wooden beams.
16 Gravel pavement with wooden beams.

17 South end of the stone drain; looking north.
18 Portion of the stone drain at the point where the later trench has cut through it; looking north.

19 Wooden sewer with iron grill; the stone drain in the foreground; looking south.
20 Detail of the iron grill of the wooden sewer.

21 Wooden sewer with the grill removed; stone drain to the right; looking west.
22 Wooden sewer, west end, showing floor, side and end beams, and vertical square corner beams.

23 Wooden sewer with the end and north side beams removed; note the slotted corner beams; looking west.
24 Wooden sewer, showing floor beams, with the end, north side beams and northeast corner beam removed; note the mortise hole; looking west.

25 Corner beam removed from the sewer; two sides slotted for the insertion of the end and side beams, with a tenon to fit into the mortise hole in the basal side beam.
26 Military hospital as drawn by Durnford, 1823. (Public Archives Canada, C-43271.)

28 Section through the hospital interior.

29 Hospital foundations; looking north.
30 Section of the west hospital wall with brick footing.

31 Elevation view of the brick footing beneath the stone foundation wall of the hospital.
32 East hospital wall, with shelf on interior; elevation view.

33 East entrance foundation walls of the hospital; plan view.
34 West entrance foundation walls of the hospital; plan view.

35 North fireplace foundation of the hospital; elevation view.
36 North fireplace foundation of the hospital.

37 North fireplace foundation of the hospital; section view looking east.
38 Circular soil stain in the hospital interior; plan view looking north.

39 Hospital cooking house as drawn by Durnford, 1823. (Public Archives Canada, C-43271.)
40 Hospital cooking house (5G4): plan of excavated remains.

41 Detail of the brick hearth of the hospital cooking house; plan view.
42 Sections through the brick hearth, hospital cooking house.

43 Section through the brick hearth, hospital cooking house.
44 Hospital cooking house remains; plan view looking north.

45 Detail of the brick hearth, hospital cooking house; plan view looking west.
46 East elevation of the brick hearth, hospital cooking house; looking west.

47 Stone foundation of the brick hearth, south side; plan view.
48 Section showing the relationship of the brick and stone foundation of the brick hearth, hospital cooking house.

49 Northeast corner of the hospital cooking house; plan view.
50 Northwest corner of the hospital cooking house; plan view.

51 Southwest corner of the hospital cooking house; plan view.
52 Garrison bakehouse as drawn by Durnford, 1823. (Public Archives Canada, C-43271.)

53 Garrison bakehouse (5G12, 15, 18): plan drawing of excavated remains.
Section through the garrison bakehouse oven: A, humus; B, light grey with bricks and mortar fragments; C, light grey sandy soil; D, dark sandy clay with brick and charcoal fragments, and E, yellowish-grey clay with brick fragments.

Alternating brick course patterns on the east foundation wall: A, upper course; B, lower course. Plan view.

Dimensions of the brick ovens (in feet).
57 East foundation wall of the garrison bakehouse; looking west.

58 East foundation wall of the garrison bakehouse; looking southwest.

59 East foundation wall of the garrison bakehouse; looking south.
60 Eastern portion of the garrison bakehouse; looking north.

61 Section through the east foundation wall of the garrison bakehouse; looking north.

62 Brick pavement in the south portion of the garrison bakehouse; looking east.
63 Brick pavement in the south portion of the garrison bakehouse; elevation view looking south.

64 Brick area on the west side of the garrison bakehouse; looking west.

65 Brick structure in the east portion of the garrison bakehouse; looking west.
66 Brick structures and soil stain (partially excavated) in the east portion of the garrison bakehouse; looking north.

67 West foundation walls of the ovens of the garrison bakehouse; looking south.

68 Southwest corner of the brick oven, garrison bakehouse; elevation view looking south.
69  Southwest corner of the brick oven, garrison bakehouse; elevation view looking south.

70  South brick wall of the oven, garrison bakehouse; elevation view looking south.

71  South oven of the garrison bakehouse with some boulders removed; looking east.
72 South oven of the garrison bakehouse with all boulders in place; looking west.

73 Iron artifacts in place adjacent to the oven foundation; plan view.
74 Barracks (5Gl4): plan drawing of excavated remains.
75 Sections through north barrack walls: A, topsoil; B, grey sandy clay; C, yellowish-grey clay; D, light brown sand; E, brown sand; F, grey clay; G, dark grey clay-soil stain; H, light grey clay; I, brown clay-soil stain, and J, reddish-brown sand.

76 Sections through east barrack walls: A, topsoil; B, brown clay-soil stain; C, light brown sandy clay; D, yellowish-brown clay; E, brown sandy clay; F, reddish-brown sand, and G, brown sand.
Sections through the south chimney foundations, barracks: 
A, brown clay; B, grey clay; C, brown clay; D, brown sand; 
E, grey-brown sand; F, grey clay, and G, dark brown sand.

South chimney foundation of the barracks; looking north.
79 Wood beams adjacent to the south chimney foundation of the barracks; looking north.

80 Wood beam near the south chimney foundation of the barracks; plan view.
81 Wood beam (see Fig. 80) and beam trench; elevation view.

82 Wood planking near the south chimney foundation of the barracks; looking north.
83 Gun shed (5G6, 9): plan drawing of excavated remains. Measurements in feet.

84 Gun shed foundation wall construction: top, section showing stones resting upon board footings; lower left, plan of corner with stone pattern; lower right, board footings.
85 Sections through gun shed walls and adjacent features: 1, topsoil; 2, brown sandy clay; 3, yellow-brown sand; 4, brown clay; 5, brown sand - trench, and 6, mixed brown clay-yellow sand.

86 Gun shed as drawn by Durnford, 1823. (Public Archives Canada, C-43272.)
87 North foundation wall of the gun shed; looking south.

88 South foundation wall of the gun shed; looking south.
89 Southeast corner of the gun shed; looking west.

90 Northwest corner of the gun shed; looking west.
91 Interior wall and east foundation wall of the gun shed; looking east.

92 North foundation wall of the gun shed; elevation view.
93 South foundation wall of the gun shed near the southeast corner, with trench feature; looking east.

94 North foundation wall and trench, gun shed; elevation view.

95 Board footing under the north foundation wall of the gun shed.
Durnford map of 1823 showing the temporary ordnance stores (Nos. 16, 17, 18). See also Figure 3. (Public Archives Canada, 17707.)
Temporary ordnance stores as drawn by Durnford, 1823. (Public Archives Canada, C-43272.)
Ordnance store (5G13, 16): plan of excavated remains.
Forge (5G19): plan of excavated remains.
100 Sections through the forge: 1, topsoil; 2, mixed soil, and 3, clay.

101 Blacksmith's shop as drawn by Durnford, 1823. (Public Archives Canada, C-43272.)
102 Detail of an 1816 map of Ile-aux-Noix showing the lime kiln area (arrow). (Public Archives Canada, C-11756.)
103 Lime kiln area (5G20): plan of excavated remains.

104 Sections through the lime kiln area: 1, topsoil; 2, brown loam; 3, grey sand; 4, brown sand; 5, black soil; 6, grey clay; 7, brown sand; 8, brick and mortar chips, and 9, stone.
105 Well area (5G17): plan of excavated remains.

106 5G10 area: plan of excavated remains.
107 Glass Bottles: a, free blown; b, dip mould; c, three-hinge mould; d, e, two-hinge mould.
108 Glass wine bottle necks and bases.
109 Creamware ceramics.
Mould-decorated and plain pearlware ceramics.
111 Nineteenth-century ceramics: a, sponged-stamped decoration; b, mocha ware; c, "annular" ware; d, sponged redware.
Nineteenth-century ceramics: a, c, delicate painted pearlware; b, blue handpainted pearlware; d, gaudy Dutch-like decoration.
Transfer-printed ceramics: a, blue; b, brown; c, flow blue; d, red; e, creamware; f, green.
Nineteenth-century ceramics: a, shell-edged pearlware; b, freen banded; c, ironstone; d, yellow earthenware; e, slip-decorated redware; f, green-glazed coarse earthenware.
Stoneware and porcelain: a, white salt-glazed stoneware; b, black basaltic stoneware; c, porcelain; d, stoneware blacking bottles; e, stoneware inkwells; f, lead-glazed stoneware.
Forks and scissors: 

a, two-tined forks with rat-tail tang and bone handles; 
b, three-tined forks with flat handle tangs and handles; 
c, three- or four-tined forks; 
d, scissors.
117 Knives (a-g) and spoons (h-m).
118 Silver spoon with maker's mark.
Clay tobacco pipes.
Personal artifacts: a, umbrella brace; b, ice skate blade; c, ice creeper; d, heel plates; e, razors; f, thimble; g, harmonica reed; h, slate crayon; i, wheel of toy; j, jew's-harp; k, iron; l, marbles.
121 Artifacts: a, thermometer backing; b, toy plate; c, d, rules.
122 Shako ornaments.
Artifacts: a-c, shoe buckles; d-h, buckles; i, belt plate; j, scabbard hook; k, l, unidentified; m, sword scabbard tip; n, shako scales.
124 Metal military buttons.
Buttons: a, shell buttons; b, shell button or link with iron loop; c, d, glass buttons; e, sleeve link or earring; f, bone buttons; g, bone button blanks; h, wooden button.
Artifacts: a–c, brush fragments; d–e, toothbrush fragments; f, needle case; g, comb; h, domino; i, bone blanks; j–k, unidentified.
127 Hardware: a, b, pintles; c-i, hinges.
128 Hardware latches.
129 Hardware: a, grating fragments; b, brace; c, staples; d, shutter dogs; e, handles.
130 Hardware: a, door-gate hooks; b, wall hooks; c, hasp.
131 Hardware: a, keys; b-e, lock fragments; f, g, keyhole covers; h, i, padlock plates.
Artifacts: 

- a, chest lock
- b, c, handles or pulls
- d, bung handle
- e, pipe or connector
- f, musket side plate
- g, h, dividers
- i, gun-flints
- j, balls
- k, bullet
- l, compass fragment.
133 Tools: a, pitchfork; b, unidentified; c, strap bolt; d, axle; e, currycomb.
134 Tools: a, hammer; b, c, wedges; d, e, awls; f, spike; g, pike; h, axe; i, caulker; j, plane blade; k, lead weight.
135 Tools: a, saw blade; b-e, chisels; f, gun tool; g, bit; h-k, files; l, forceps.
The Beads from Fort Lennox, Quebec
by Karlis Karklins

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Abstract

The collection of beads from Fort Lennox, Quebec, is composed of eight glass and non-glass necklace beads, as well as 231 small embroidery beads which form a beaded garniture. These specimens represent nine distinct types. The beads were recovered from the Navy barracks (5G22), the shipwrights' hut (5G32), and the extant men's barracks (5G58). None of the beads are distinctive enough to be useful as chronological indicators and can only be said to have been deposited at some time during the 19th or 20th centuries.

Submitted for publication 1970, by Karlis Karklins, National Historic Parks and Sites Branch, Ottawa.
Introduction

A small quantity of beads was recovered from Fort Lennox during the excavation of the Navy barracks and the shipwrights' hut during the summer of 1965 and the renovation of the extant men's barracks in 1967-68. The inventory consists of one wood bead, seven wound glass beads and a garniture composed of small, drawn glass embroidery beads. The glass beads were classified utilizing the system developed by Kenneth and Martha Ann Kidd (1970) to facilitate future intersite comparisons of bead assemblages. Their identifying code precedes the detailed description of each bead type in this report. Bead types in the collection which are not listed in the Kidds' type lists are marked by an asterisk (*) since they do not, as yet, have type numbers.

Colour and size notations used herein correspond to those employed by the Kidds in their system. Colours were designated using the names and codes in the Color Harmony Manual (Jacobson et al. 1948). The equivalent colour code in the Munsell colour notation system (Munsell Color Company 1960) was also provided for the benefit of those who may not be familiar with the manual. The size categories used refer to bead diameter and have the following numerical values: very small, under 2 mm; small, 2 mm to 4 mm; medium, 4 mm to 6 mm; large, 6 mm to 10 mm; very large, over 10 mm. Although Kidd uses "clear" in lieu of "transparent," the latter term was used herein since it was felt to be more descriptive.

A brief survey of the methods employed to manufacture glass beads is presented here to indicate the differences between the beads in the two categories mentioned above.

In the manufacture of drawn beads a long tube is drawn out from a hollow globe of molten glass by two men. After cooling, the tube is broken into short sections to facilitate handling. These are then annealed to strengthen the glass. The tube is subsequently broken into bead lengths by placing it on a sharp, broad chisel set in a block of wood and striking it with another chisel-like tool ("On the Manufacture of Glass Beads" 1825: 120). The beads may be left unaltered, or their broken ends may be rounded. The latter process is accomplished by placing the rough beads in an iron drum containing a mixture of plaster and graphite, or clay and charcoal dust (Orchard
1929: 85). The drum is then heated and rotated simultaneously. In another process, the beads are put in a large pan with sand and wood ash, or plaster and graphite. The pan is then heated over a charcoal fire and the contents are stirred continually with a spatula resembling a hatchet with a round end ("On the Manufacture of Glass Beads" 1825: 120). In both processes the heat and agitation round the broken ends while the various "packing" mixtures keep the beads from sticking together and prevent their perforations from collapsing as the glass becomes viscid. Depending on the length of time that the beads are treated in this manner, they may range from practically unaltered tube fragments to almost perfect spheroids.

Drawn beads have certain characteristics due to their method of manufacture. Beads may consist of unaltered tube sections with uneven, broken ends, commonly referred to as "bugle" beads. Bubbles in the glass and striations on the surface, if present, are oriented parallel to the axis, an imaginary line passing through the centre of the perforation. The perforation is parallel-sided and usually has a smooth surface.

Wound beads are produced in a totally different manner. In this process, a thin filament of glass is drawn from a molten rod and repeatedly wound around a rotating metal mandrel until the desired size and shape is achieved (Murray 1964: 16). The remainder of the filament is then cut from the bead which is heated and turned to further fuse the glass and create a smoother surface. This procedure is continued until several beads have been formed. After cooling, they are removed from the mandrel, which is sometimes tapered to facilitate this step.

The surfaces of wound beads usually exhibit swirl marks that are at right angles to the axis. Bubbles in the glass are either round, or elongate and perpendicular to the axis. The perforation may taper and have an uneven surface.
Drawn Glass Beads

Four types of small embroidery beads form an almost complete beaded garniture (Fig. 2):
IIa*. Circular; small; transparent, light gray (c; N 8/0); 38 specimens.
IIa*. Circular; small; translucent, cerulean blue (15 nc; 10B 5/8); 191 specimens.
IIa*. Circular; small; transparent, bright blue (16 lc; 5B 5/7); one specimen.
IIa*. Circular; small; transparent, bright mint green (22 ia; 2.5G 7/8); one specimen.

The shape of the beads is oblate spheroidal. Tiny bubbles are present in the glass. Surfaces are shiny.

<table>
<thead>
<tr>
<th>Length</th>
<th>Diameter</th>
<th>Perforation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range: 1.25 mm - 2 mm</td>
<td>2 mm - 2.75 mm</td>
<td>0.75 mm</td>
</tr>
<tr>
<td>Average: 1.75 mm</td>
<td>2.25 mm</td>
<td>0.75 mm</td>
</tr>
</tbody>
</table>

Provenience: 5G58R1.

The beads are strung on a single strand of white thread which is recurved and entwined so as to produce four courses of beads (Fig. 2). This was accomplished by running the thread of two adjacent courses through the perforations of all the light gray beads at the centre of the garniture, as well as alternate light gray specimens along the edges of the garniture.

The colour pattern consists of groups of three cerulean blue beads separated from each other by a light gray bead. This pattern is constant except at the ends of the garniture where the strand recurves twice, forming two loops composed of six cerulean blue beads and two loops of six cerulean blue beads separated from three more blue beads by a light gray specimen. The bright mint green and bright blue beads were substituted for two cerulean specimens, suggesting the possibility that this garniture was homemade, rather than factory produced.

The garniture is 12.5 cm long and 2 cm wide, or about 5 in. by 3/4 in.
Wound Glass Beads

Wlb7. Round; very large; transparent, amber (3 lc; 7.5YR 7/8); one specimen (Fig. 1a). The surface is smooth. Several small, round bubbles are present in the glass. A section of thick cord is situated in the perforation.

<table>
<thead>
<tr>
<th>Length</th>
<th>Diameter</th>
<th>Perforation</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 mm</td>
<td>13 mm</td>
<td>2 mm</td>
</tr>
</tbody>
</table>

Provenience: 5G58P1.

Wlb*. Round; large and very large; translucent, copen blue (13-1/2 ic; 5PB 5/7); three specimens (Fig. 1b, e-f). Bubbles in the glass are scarce to abundant. SwirlT marks are visible.

<table>
<thead>
<tr>
<th>Length</th>
<th>Diameter</th>
<th>Perforation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5 mm - 9.5 mm</td>
<td>7.25 mm - 10.5 mm</td>
<td>1.0 mm - 3 mm</td>
</tr>
</tbody>
</table>

Provenience: 5G22F1, 5G32A1, 5G58R1.

Wlb*. Round; large and very large; opaque, black (p; N1/0); two specimens (Fig. 1c). Surfaces are smooth.

<table>
<thead>
<tr>
<th>Length</th>
<th>Diameter</th>
<th>Perforation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5 mm - 10.5 mm</td>
<td>8 mm - 12.5 mm</td>
<td>1.9 mm - 2.5 mm</td>
</tr>
</tbody>
</table>

Provenience: 5G58R1, 5G58S1.

Wlb*. Round; large; translucent, bright blue (16 lc; 5B 5/7); one specimen (Fig. 1d). The surface is smooth. The glass is swirled and contains an abundance of tiny, round bubbles.

<table>
<thead>
<tr>
<th>Length</th>
<th>Diameter</th>
<th>Perforation</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5 mm</td>
<td>8.5 mm</td>
<td>2 mm</td>
</tr>
</tbody>
</table>

Provenience: 5G58S1.
Non-Glass Bead

Wood Bead. Round; large; dark brown (2 pn; 2.5Y 3/1); one specimen (Fig. 1g). The ends and portions of the body have been gnawed by rodents.

<table>
<thead>
<tr>
<th>Length</th>
<th>Diameter</th>
<th>Perforation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5 mm</td>
<td>6.25 mm</td>
<td>2.5 mm</td>
</tr>
</tbody>
</table>

Provenience: 5G58P1.
Discussion and Conclusion

Only two beads (type W1b*: round, translucent, copen blue) were retrieved from excavated features at Fort Lennox. One of these came from the uppermost level of the fill in the Navy barracks (5G22F1) which was erected at some time during the period from 1814 to 1816, and destroyed by fire in 1864 (Lee 1965: 5). The other was found in the uppermost level of a test trench situated about nine feet to the west of the shipwrights' hut (5G32A1) which is documented as being in existence in 1829 (Lee 1965: 6). This bead type is not presently diagnostic of any specific time period and, considering its archaeological contexts, a definite date cannot be assigned to it.

The remaining specimens were recovered from the still-standing men's barracks (5G58) when the upstairs and downstairs floors were removed and replaced in 1967-68. Beads were found under the ground floor (5G58P1), under the upstairs floor (5G58R1), and in the general area of the barracks (5G58S1). In this context they could date to any time after 1829, the year the structure was erected (Lee 1969: 31).
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Orchard, William C. 1929
The beads from Fort Lennox are: a, Wib7, round, transparent, amber; b, Wib*, round, translucent, copen blue; c, Wib*, round, opaque, black; d, Wib*, round, translucent, bright blue; e, Wib*, round, translucent, copen blue; f, Wib*, round, translucent, copen blue, and g, wood bead. (Photo by G. Lupien.)
2 The beaded garniture found in the men's barracks at Fort Lennox. (Photo by G. Lupien.)
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