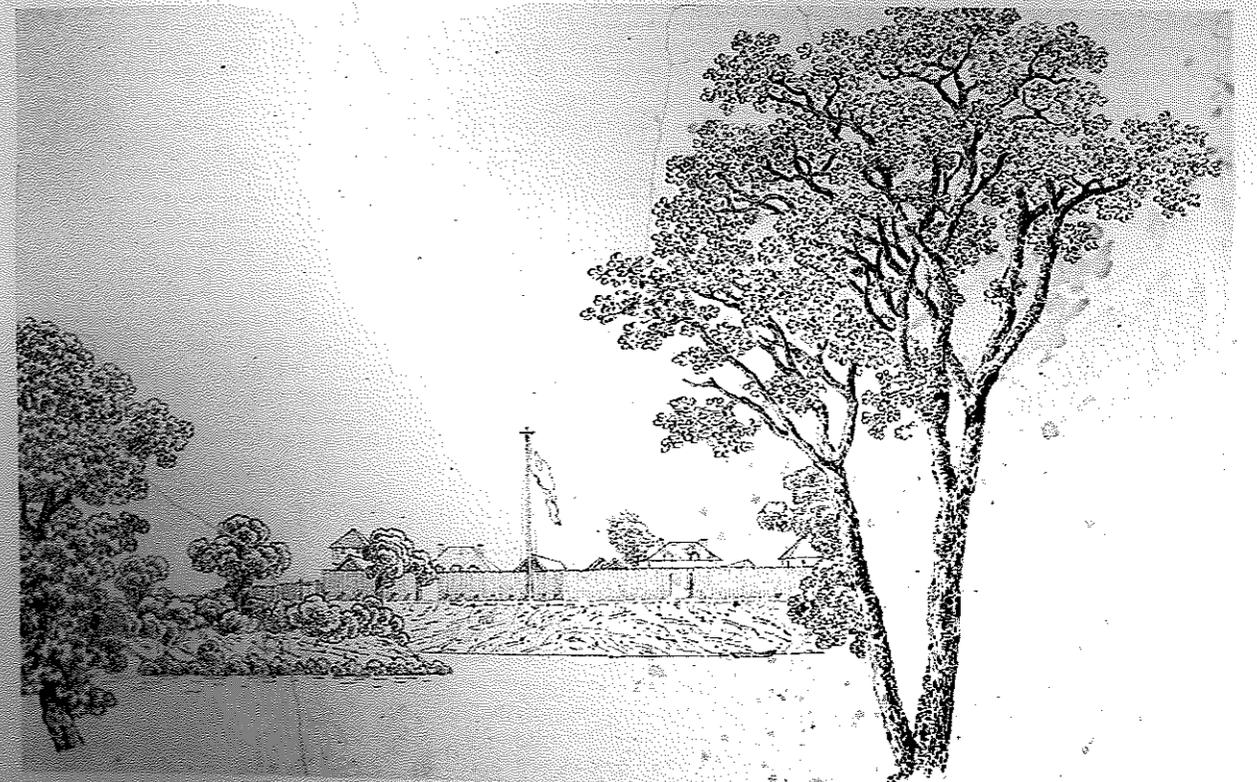


*E. L. Syms*

# MANITOBA ARCHAEOLOGICAL JOURNAL



Archaeology Today

Volume 15 Numbers 1 and 2  
2005

The Manitoba Archaeological Journal is published two times a year by the Manitoba Archaeological Society for the express purpose of disseminating archaeological information concerning the province of Manitoba and related areas. Any material appearing in this publication may be reprinted or reproduced provided due and proper acknowledgement is made. All correspondence concerning the publication should be addressed to the Editor, Manitoba Archaeological Journal, Box 1171, Winnipeg, Manitoba R3C 2Y4. Individuals interested in submitting manuscripts for publication should send a hard copy and a disk copy to the above address. Manuscripts should be in the same format as the publication. Views and opinions expressed in articles appearing in the Manitoba Archaeological Journal are those of the writers and are not necessarily those of the Executive, membership or sponsors of the Manitoba Archaeological Society.

Membership in the Manitoba Archaeological Society per year is as follows:

Student 22.00  
Adult 30.00  
Family 35.00  
Institutional 45.00

International Standard Series Number ISSN 1188-5424

**A Project Sponsored by**

**Manitoba  
Culture, Heritage  
and Tourism**

**Culture, Patrimoine  
et Tourisme  
Manitoba**



Front cover image: untitled and undated pen sketch of the north bank of the Assiniboine River at its junction with the Red River (The Forks) by Peter Rindisbacher (1806-1834) who arrived in Red River in the autumn of 1821 and left in 1826. The leaves on the trees suggest a date no earlier than 1822; hence, the fort illustrated is likely Fort Gibraltar II as renovated and renamed Fort Garry by the Hudson's Bay Company after its amalgamation with the North West Company in 1821. Image courtesy of Glenbow Museum, Calgary, Canada, 58.42.4.

THE EAST YARDS ARCHAEOLOGICAL PROJECT, 1988 AND 1990:  
FINAL REPORT

**GREGORY G. MONKS  
UNIVERSITY OF MANITOBA**

## Table of Contents

Introduction.....	1
History of Investigation .....	1
Archaeological .....	1
Historical.....	4
Synthesis of Approaches.....	5
Methods.....	5
Recoveries.....	9
Stratification.....	9
1988.....	9
1990.....	12
Features .....	18
1988.....	18
The Cellar.....	18
The Sea of Bricks.....	19
1990.....	19
Chronology.....	24
Recovered Objects .....	26
Description of Recoveries.....	27
1988.....	27
Stratum B .....	27
Artifacts.....	27
Discussion .....	45
Fauna.....	45
Discussion .....	55
Summary .....	56
Trench 5 .....	57
Artifacts.....	57
Summary .....	78
Fauna.....	83
Summary .....	100
Sea of Bricks .....	101
Artifacts.....	101
Fauna.....	114
Features .....	117
Summary .....	117
1990 .....	118
Artifacts.....	118
Summary .....	129
Fauna.....	130
Summary .....	141
Summary .....	141
Conclusions.....	141
Acknowledgements.....	144
References.....	146

## Figures

1	Junction of the Red and Assiniboine Rivers.....	2
2	Location of Hudson's Bay Company and Northwest Company forts at the Forks.....	3
3	Location of 1988 and 1990 excavations at the Forks.....	6
4	Detailed layout of 1990 excavation units, DILg-33/90A.....	9
5	Typical stratification in Trenches 1-4 and 6.....	10
6	Stratification in Trench 5, Units 1-5, showing the cellar feature.....	11
7	Stratification in Trench 7, Units 1-5, showing disturbed and undisturbed deposits.....	12
8	N-S stratigraphic profile from N 1023-1032 at W 974 and W976.....	13
9	E-W stratigraphic profiles.....	14
10	Stratigraphic profiles of excavation unit N 1031 m W 973 m.....	15
11	Stratigraphic profiles of excavation unit N 1029 m W 973 m.....	16
12	Stratigraphic profiles of excavation unit N 1027 m W 973 m.....	17
13	Plan view of corner post and boards of the cellar feature in Trench 5.....	18
14	Sea of Bricks in units N 1010-1020 at W 1018.....	19
15	Floor of N 1027 W 975 at 230.00 m asl showing wood and associated materials.....	20
16	Floor of N 1027 W 973.....	20
17	Floor of N 1029 W 973 showing concentration of brick, mortar, rock and wood.....	21
18	Floor of N 1030 W 976.....	21
19	Floor of unit N 1031 W 975.....	22
20	Floor of unit N 1031 W 973 showing northwest to southeast alignment of feature.....	23
21	Composite floor plan of 1990 excavations at ca. 230.00 m asl.....	24
22	Transfer printed earthenware fragments.....	40
23	Lithic artifacts.....	42
24	Food procurement artifacts.....	43
25	Clay smoking pipe fragments.....	44
26	Butchered <i>Bison</i> and <i>Bos</i> bone.....	54
27	Adornment artifacts.....	61
28	Lamp (?).....	61
29	Clothing artifacts.....	69
30	Ceramic vessels.....	71
31	Transfer printed earthenware.....	72
32	Smoking pipes.....	77
33	Butchering remains.....	90
34	Beads.....	102
35	Bricks with manufacturers' marks.....	105
36	Clothing artifacts.....	107
37	Earthenware fragments.....	110
38	Lead shot.....	112
39	Decorated smoking pipe and horseshoe.....	113
40	Cut, chopped and sawn innominate and gnawed equid rib.....	116
41	Antler button and Blackduck ceramic fragments.....	122
42	Transfer-printed earthenware fragments.....	125
43	Lithic detritus.....	127
44	Lead shot.....	127

45	Smoking pipes.....	129
46	Ox calcaneum.....	133

## Tables

1.	1988 Artifacts sorted by Category, Sub-Category, Object Common Name and Trench.....	28
2.	1988 Stratum B Nails.....	31
3.	1988 Stratum B Containers.....	32
4.	1988 Stratum B Containers by Sub-Category, Material and Object Type.....	35
5.	1988 Stratum B Ceramic Dinnerware Containers.....	37
6.	1988 Stratum B Glass Storage Containers.....	41
7.	1988 Stratum B Detritus.....	42
8.	1988 Stratum B Fauna by Class and Order.....	47
9.	1988 Stratum B Mammals by Order, Family and Genus.....	48
10.	1988 Stratum B Mammals by Genus and Element.....	49
11.	1988 Stratum B Mammals by Genus and Butchering Mark.....	52
12.	1988 Trench 5 Artifacts: Category, Sub-Category and Object Common Name by Unit.....	57
13.	1988 Trench 5 Adornment Artifacts: Object Common Name, Material and Object Type by Stratum.....	61
14.	1988 Trench 5 Windowpane Glass: Colour by Component and Stratum.....	62
15.	1988 Trench 5 Nails: Component by Object Type.....	64
16.	1988 Trench 5 Structural Objects by Stratum.....	66
17.	1988 Trench 5 Buttons by Component and Stratum.....	68
18.	1988 Trench 5 Clothing Manufacture Artifacts by Component and Stratum.....	69
19.	1988 Trench 5 Ceramic Containers by Component and Stratum.....	70
20.	1988 Trench 5 Ceramic Patterns by Component and Stratum.....	72
21.	1988 Trench 5 Glass Containers by Component and Stratum.....	73
22.	1988 Trench 5 Detritus Scrap by Component and Stratum.....	74
23.	1988 Trench 5 Floral Remains by Component and Stratum.....	74
24.	1988 Trench 5 Natural Object Modified by Component and Stratum.....	76
25.	1988 Trench 5 Smoking Pipes by Component and Stratum.....	76
26.	1988 Trench 5 Transportation Artifacts by Component and Stratum.....	78
27.	1988 Trench 5 Component I Artifacts by Stratum.....	78
28.	1988 Trench 5 Component II Artifacts by Stratum.....	79
29.	1988 Trench 5 Component III Artifacts by Stratum.....	80
30.	1988 Trench 5 Component IV Artifacts by Stratum.....	82
31.	1988 Trench 5 Fauna: Class by Unit and Stratum.....	83
32.	1988 Trench 5 Aves by Component and Stratum.....	84
33.	1988 Trench 5 Anseriformes: Family by Component and Stratum.....	85
34.	1988 Trench 5 Galliformes: Family by Component and Stratum.....	85
35.	1988 Trench 5 Mammals: Order by Component and Stratum.....	87
36.	1988 Trench 5 Artiodactyls: Family and Genus by Component and Stratum.....	88
37.	1988 Trench 5 Lagomorpha: Genus and Species by Component and Stratum.....	93
38.	1988 Trench 5 Rodentia: Genus and Species by Component and Stratum.....	94

39. 1988 Trench 5 Ostichthys: Order by Component and Stratum .....	96
40. 1988 Trench 5 Clupeiformes: Genus by Component and Stratum.....	97
41. 1988 Trench 5 Hiodon: Element by Component and Stratum .....	97
42. 1988 Trench 5 Perciformes: Genus by Component and Stratum .....	95
43. 1988 Trench 7 Artifacts: Category by Excavation Unit.....	101
44. 1988 Trench 7 Architectural Objects by Sub-Category and Object Name .....	102
45. 1988 Trench 7 Nails: Manufacturing Technology by Excavation Unit .....	104
46. 1988 Trench 7 Clothing: Sub-Category by Excavation Unit .....	106
47. 1988 Trench 7 Clothing Manufacture by Unit .....	108
48. 1988 Trench 7 Containers: Material, Sub-Category and Object Type .....	108
by Excavation Unit.	
49. 1988 Trench 7 Natural Object Modified: Object Name by Excavation Unit.....	112
50. 1988 Trench 7 Recreation Artifacts: Smoking Pipes by Excavation Unit .....	113
51. 1988 Trench 7 Fauna: Class by Excavation Unit .....	114
52. 1988 Trench 7 Mammals: Order and Family by Excavation Unit .....	115
53. 1990 Stratum B Artifacts: Category by Excavation Unit.....	119
54. 1990 Stratum B Artifacts by Stratum .....	119
55. 1990 Stratum B Architectural Objects: Sub-Category by Excavation Unit .....	120
56. 1990 Stratum B Hardware: Common Name by Excavation Unit .....	120
57. 1990 Stratum B Nails: Object Type by Stratum B Variant .....	121
58. 1990 Stratum B Structure: Object Type by Excavation Unit .....	122
59. 1990 Stratum B Containers: Object Type by Excavation Unit .....	123
60. 1990 Stratum B Containers: Sub-Category and Material by Stratum B Variant.....	124
61. 1990 Stratum B Containers (Earthenware): Decorative Patterns by Excavation Unit	124
62. 1990 Stratum B Containers: Object Type by Excavation Unit .....	125
63. 1990 Stratum B Detritus by Excavation Unit.....	126
64. 1990 Stratum B Miscellaneous Artifacts by Excavation Unit.....	128
65. 1990 Stratum B Natural Object Modified by Excavation Unit .....	128
66. 1990 Stratum B Recreation: Object Name by Excavation Unit .....	129
67. 1990 Stratum B Fauna: Class by Excavation Unit .....	131
68. 1990 Stratum B Aves: Genus by Excavation Unit .....	131
69. 1990 Stratum B Aves: Element by Excavation Unit .....	132
70. 1990 Stratum B Mammals: Genus by Excavation Unit .....	133
71. 1990 Stratum B Mammals: Element by Excavation Unit .....	135
72. 1990 Stratum B Genus Bos: Butchering Marks by Excavation Unit .....	137
73. 1990 Stratum B Genus Ovis: Butchering Marks by Excavation Unit.....	137
74. 1990 Stratum B Ostichthys: Genus by Excavation Unit .....	138
75. 1990 Stratum B Ostichthys: Genus and Element by Stratum B Variant.....	140

Appendices (not included in this report)

A-1	1988 Master Artifact Catalogue
A-2	1988 Master Faunal Catalogue
A-3	1990 Master Artifact Catalogue
A-4	1990 Master Faunal Catalogue
B-1	1988 Artifact Catalogue, Stratum B

B-2	1988 Faunal Catalogue, Stratum B
C-1	1988 Artifact Catalogue, Trench 5
C-2	1988 Faunal Catalogue, Trench 5
D-1	1988 Artifact Catalogue, Trench 7
D-2	1988 Faunal Catalogue, Trench 7
E-1	1990 Artifact Catalogue, Stratum B and variants
E-2	1990 Faunal Catalogue, Stratum B and variants
F	Mean Ceramic Dating of the 1988 assemblage

## INTRODUCTION

The East Yards Archaeological Project (EYAP) was undertaken as part of a larger research design that aimed at investigating the economic and social evolution of the Red River Settlement (RRS). This research design rests on the assumption that human culture is a complex tool that is manipulated by humans, as individuals and in groups, to provide them with what they view as their maximum survival advantage. The economic and social organization within which these individuals and groups operate is a fundamental aspect of this complex adaptive tool. Without the economic means of biological and social reproduction, populations cease to exist. Social organization provides the framework within which the economic activity of individuals and groups occurs. The two are inseparable, but the economic aspect of culture is considered to be more important than the social aspect because the former, even when undertaken by individuals alone, can reproduce life, whereas the latter cannot.

Cultures change over time, partly in response to external factors, partly in response to internal ones. The research design used here models cultural change after Buckley (1968) and Clarke (1968) as continuous, but of differing magnitude, over time. Thus, each individual and each group participates in and influences the trajectory of this change on a daily basis. Periods of slow, gradual change may be separated from each other by periods of rapid, significant change as the cumulative effects of changes in different cultural sub-systems make themselves felt. It is the economic and social sub-system trajectories that receive the greatest attention in this research program.

There is a happy circumstance that facilitates the investigation of these sub-systems; namely the demonstrated relationship between material culture and economic, and thus social, behaviour. Archaeologists, historians, sociologists, and material culture specialists have succeeded in showing, by a variety of means, that variation in economic and social behaviour is reflected in material culture. Archaeology is thus able to use excavated material culture remains as indices of economic and social behaviour in the past. Through a combination of archival and archaeological research, material remains will be used to reveal the economic and social relations that existed in the Red River Settlement during the nineteenth century and to show how those relations changed and developed throughout that period. This report is one step in that direction.

## HISTORY OF INVESTIGATION

### Archaeological

The decision to excavate in the Canadian National Railway's East Yards was influenced by both academic and practical considerations. The academic consideration was the need to obtain further time depth on the Hudson's Bay Company's (HBC) fur trade operations at the junction of the Red and Assiniboine rivers (The Forks) (Fig. 1). Three years of excavation and as many years of archival research on Upper Fort Garry provide a picture of these operations from 1836 until 1881, a critical period in the fur trade and in the evolution of the Red River Settlement (Brenner 1998; Brenner and Monks 2002; Fifik 1987; Larcombe 1988; Loewen 1986, 1988; Monks 1982, 1983, 1984, 1992; Peach 2000; Seyers 1988). The existence of earlier Hudson's Bay Company posts in the East Yards

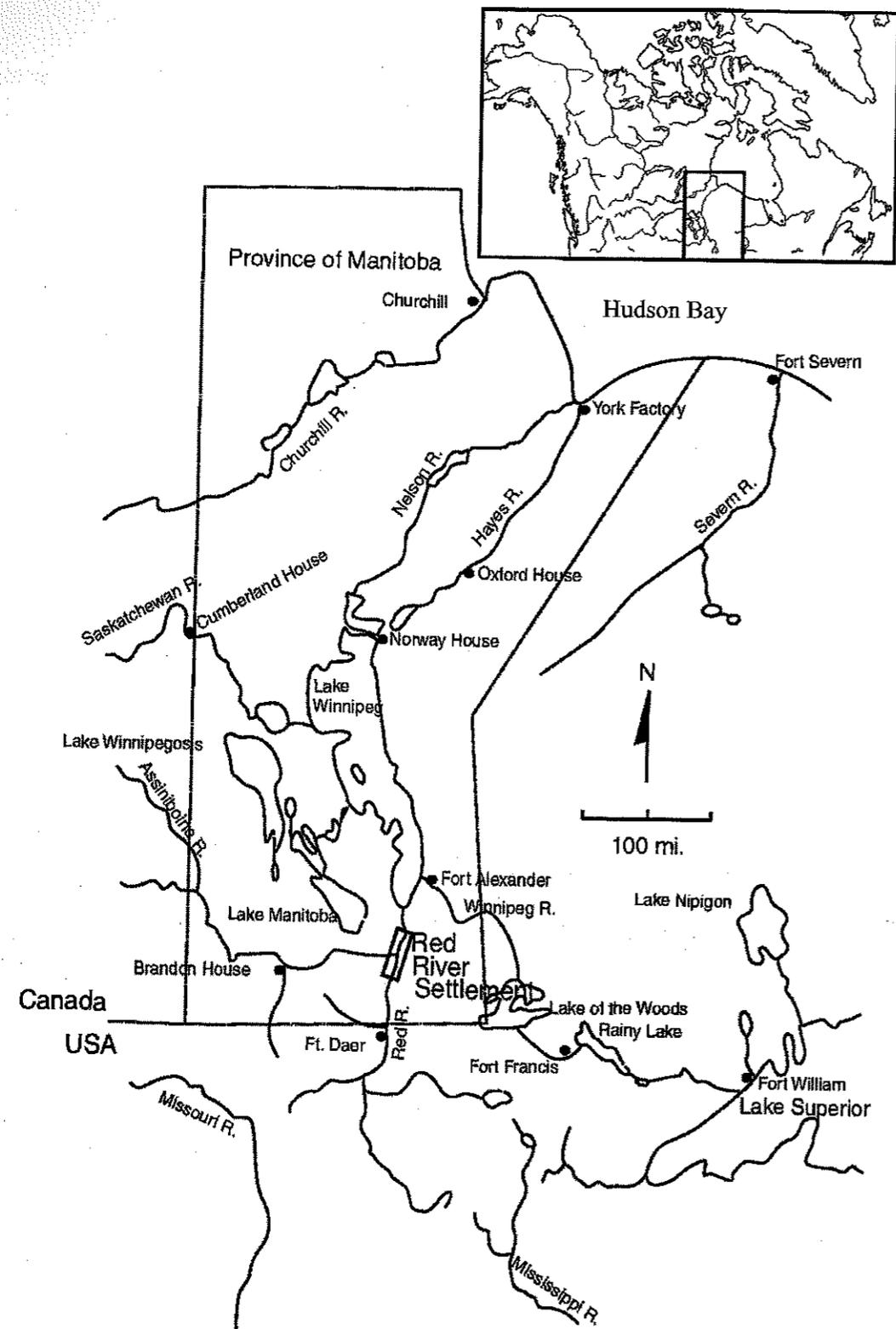


Figure 1: Junction of the Red and Assiniboine rivers, with map of Canada inset showing location of The Forks.

area was well known, although their exact location was suspected but unconfirmed (Priess et al. 1986). Since both Upper Fort Garry, founded in 1836, and Lower Fort Garry, founded in 1831, had been examined, a decision was made to search for the next earliest post, Fort Garry (so named in 1821, after Governor Nicholas Garry, when the North West Company's Fort Gibraltar II was taken over by the Hudson's Bay Company). The academic benefit arising from the decision was seen in the added time depth that would be provided to the materials available from the Upper and Lower Fort Garry excavations.

The practical benefit lay in the heritage inventory, assessment, and mitigation of the East Yards that was initiated as part of the Forks development. The Forks Renewal Corporation was charged with converting the East Yards from an active railway operation into a public open space that would be economically self-sustaining, and the heritage aspect of the area was seen as a key element in this development. Also, as part of this development, the Forks Renewal Corporation contracted Quaternary Consultants to undertake a simultaneous search for, and excavation of, Fort Gibraltar I in an adjacent part of the East Yards (Fig. 2).

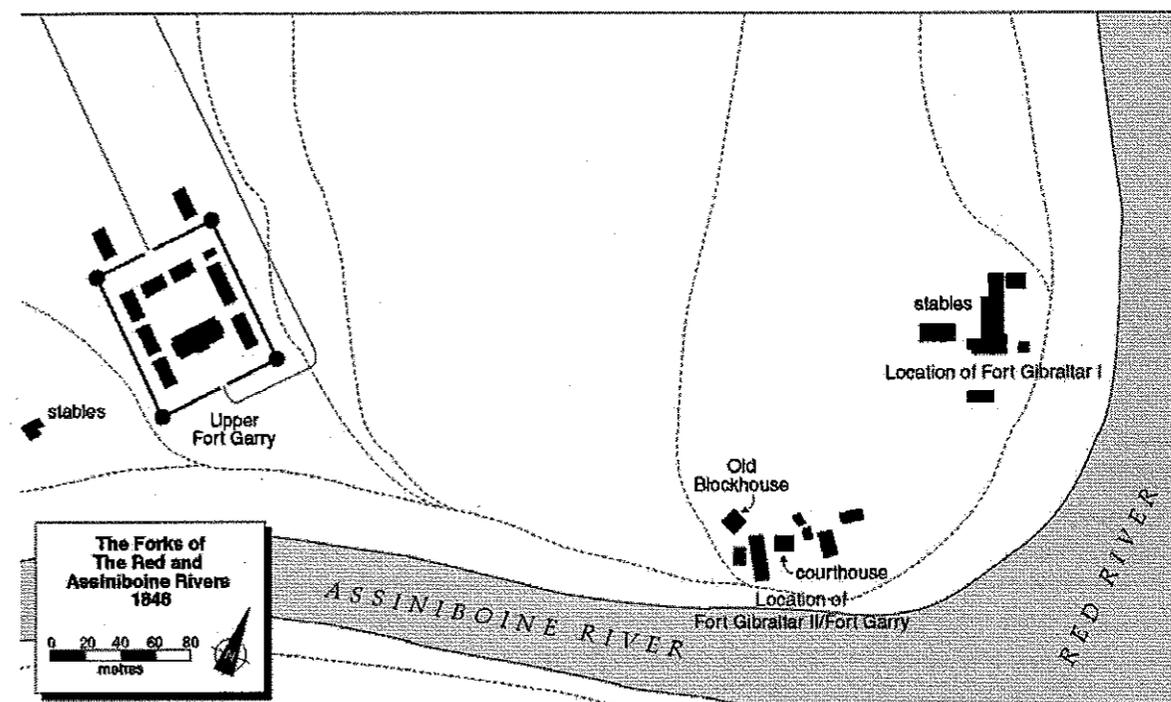


Figure 2: Location of Hudson's Bay Company and North West Company forts at The Forks.

Earlier, contemporary, and later excavations in the Red River Settlement have brought to light Métis farmsteads (Freer n.d.a; McLeod 1982, 1983; Petch n.d.), Scots, English, and Métis homes (Deck and Ward 1999; Forsman 1977), church missions (McLeod and Hart 1986), fur trade posts (Freer n.d.b; McLeod and Seyers 1988) and urban development (Kroker 1989; Kroker and Goundry 1993a, 1993b) that provide a preliminary glimpse of the Settlement during the nineteenth century. This body of archaeological

material provides the context within which a discussion of the economic and social evolution of the Red River Settlement has already begun (Brenner 1998; Brenner and Monks 2002; Fifik 1987; Larcombe 1988; Mcleod 1985; Peach 2000; Seyers 1988).

### Historical

The history of the Red River Settlement has long been the subject of study. A review of that literature is beyond the scope of this report, but several relatively recent publications are of interest as background for the overall research design, as well as the specific investigations in the East Yards. Carol Livermore (1976) focused directly on the Hudson's Bay Company operation and its economic and social effects on the individuals and groups involved. Of special interest from an archaeological point of view is Roger Guinn's (1980) study of the land use history of the Forks. It provides much of the basis for locating, identifying and understanding the major archaeological features at the Forks, and it is a major source of archival references for further research.

The Forks was long regarded by First Nations groups as an important transportation junction, subsistence location, and meeting place (Kroker 1989), but it experienced great changes during and after the fur trade. La Verendryé is alleged to have caused Fort Rouge to be built in 1737, although its exact location, or whether it was ever built at all, remains unknown (Guinn 1980:29-30). In 1805, the Northwest Company erected the first Fort Gibraltar (Fort Gibraltar I) on the north shore of the Forks in order to control the flow of pemmican from the upper Assiniboine River into the expanding trade area of the North Saskatchewan River and the boreal forest to its north. In addition, Fort Gibraltar was a vital link between this trading area, the main inland entrepôt of Fort William, and the headquarters in Montréal, from whence furs were exported and trade goods imported. The Forks was thus pivotal to the Northwest Company regardless of whether its personnel followed the Winnipeg River or Roseau River routes.

The Hudson's Bay Company, as part of its escalating competition with the Northwest Company, established the Selkirk Settlement in 1811 with its headquarters at Fort Douglas. Two miles downstream on the Red River from Fort Gibraltar, this settlement threatened not only the Northwest Company's supply of pemmican from the northern plains, but also its lines of communication between the fur trading frontier and the entrepôt and head office. Conflict arose when the Selkirk settlers captured Fort Gibraltar and burned it after taking the pemmican. The Battle of Seven Oaks, or the Seven Oaks Massacre depending on one's point of view, was the response. Peace between the companies was restored, and Fort Gibraltar II was erected by the Northwest Company in 1817. The two companies merged under the Hudson's Bay Company's banner, or the Hudson's Bay Company took over the Northwest Company, again depending on one's point of view, in 1821. Fort Gibraltar II was renamed Fort Garry and was expanded by the addition of buildings and materials brought from Fort Douglas. The complex of buildings served as the Company's administrative headquarters of the Northern Department until it was badly damaged by the 1826 flood and subsequently replaced by Lower Fort Garry in 1831. The remaining buildings continued to be used for a variety of purposes (e.g. experimental farm) until their complete collapse around mid nineteenth century.

### Synthesis of Approaches

Priess et al. (1986) reported the discovery of a feature, interpreted as a cellar, containing material attributable to the Hudson's Bay Company and dating to the early nineteenth century. Examination of Guinn's documentation of the area for that time period suggested that the feature could be associated with the Hudson's Bay Company occupancy of Fort Garry and that it could be a cellar below a building. Two obvious residential structures are depicted by Rindisbacher inside Fort Gibraltar II/Fort Garry (Guinn 1980:Fig. 11), and Moody's map of the Forks indicates that such buildings remained as late as 1848 (Guinn, 1980:Fig. 19). Archival research on the architecture of Upper Fort Garry indicated that cellars were only found under the residences of high ranking persons, usually Company officers (Monks 1992:46). If this pattern applied to the earlier deposits at Fort Gibraltar II/Fort Garry, further excavation in the area might reveal evidence of those or other buildings of similar age.

The 1988 season was exploratory. Seven test trenches were located on either side of the still active Low Line (Fig. 3). Five of these trenches produced little nineteenth century material apart from a thin soil layer. Trench 7 produced a bewildering array of stratification and material dating to the fur trade and more recent periods. During the excavation of Trench 5 a deep feature located near the feature exposed by Priess et al. (1986) several years earlier was encountered. It was interpreted as a cellar that had been re-used as a refuse pit. The distance between the two features is consistent with the illustrations in Guinn (1980:Fig. 24). The cellar and its contents fall into at least the time span between 1821, during which the Hudson's Bay Company occupied what had been the North West Company's Fort Gibraltar II, and 1852 when the Fort was dismantled. The possibility exists that the cellar itself was a Northwest Company construction, possibly dating from 1817.

The 1990 season was shorter and was dedicated to expanding on the results of the 1988 testing at the Fort Gibraltar II/Fort Garry site. The specific aim of the 1990 excavations was to locate the boundaries of the building that was assumed to have stood above the cellar and to obtain a sample of cultural remains from beneath and outside the building. The rationale for this aim lay in the perceived need to supplement the scanty archival record on the fort with archaeological data. The sample of materials collected would help indicate the size, shape, orientation, construction methods and identity of the building. Also, the sample would help indicate who occupied the building and when. At a larger scale, the materials from 1988 and 1990 would provide a useful assemblage for the comparative analysis of Upper Fort Garry, Lower Fort Garry, and Fort Gibraltar I.

### METHODS

Excavations in 1988 were conducted during late May and the month of June by the Manitoba Universities Archaeological Field School. Following this, two months of excavation financed by the Social Sciences and Humanities Research Council (SSHRC) took place. In 1990, the Manitoba Universities Archaeological Field School returned to excavate in late May and the month of June. These excavations were all conducted under the author's direction.

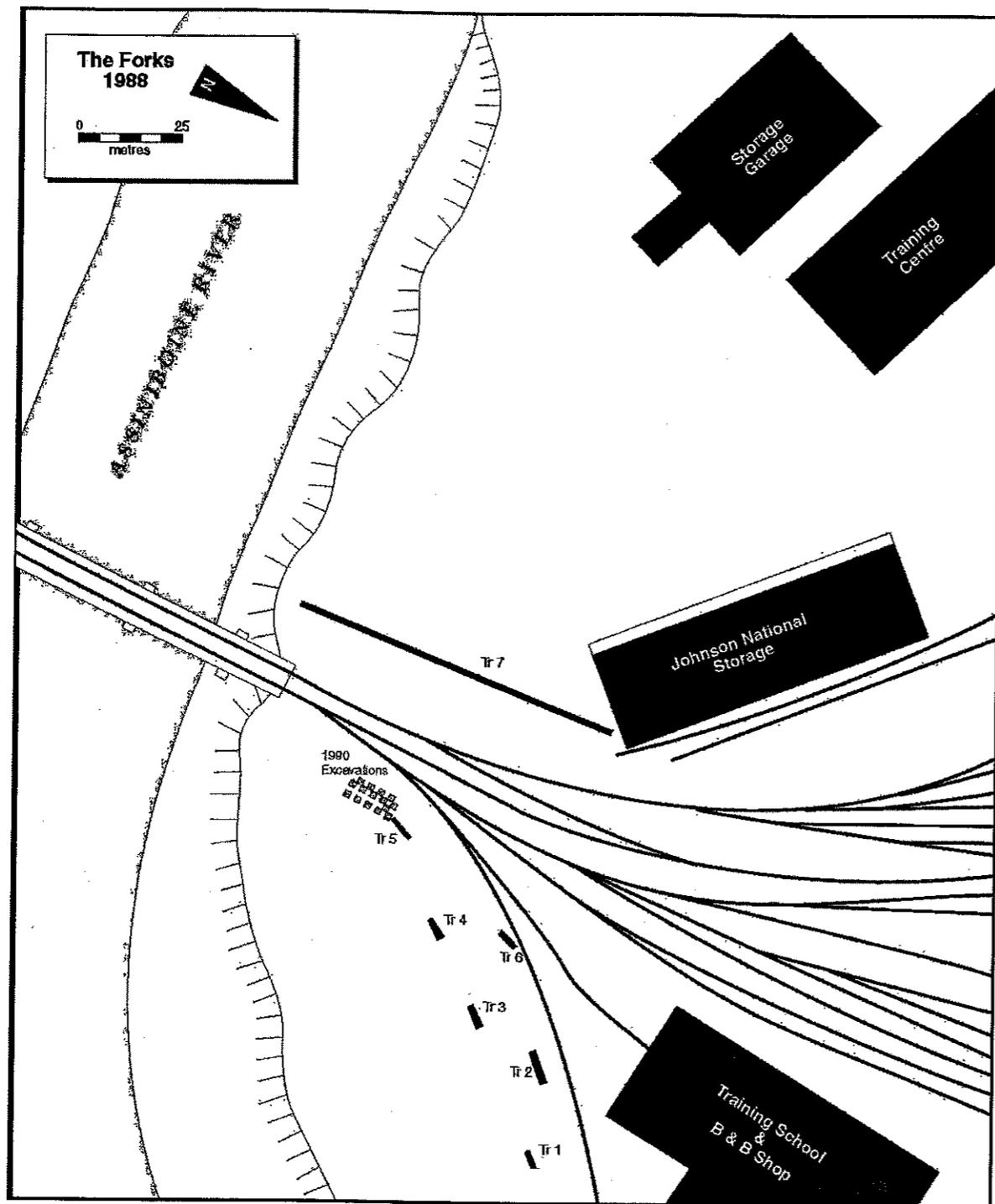


Figure 3: location of 1988 and 1990 excavations at The Forks.

The main horizontal and vertical datum for the site was the brass survey plug set into the cement footing at the northwest corner of the Low Line bridge. The elevation on this plug is 232.253 m above sea level, and it was given the horizontal coordinates N1000 metres/W1000 metres by agreement among archeologists working on, or having an interest in, The Forks. By similar agreement all measurement was metric. From this plug, an east-

west baseline was established to the southeast corner of the first freestanding cement pylon of the High Line bridge at a height of approximately 1.5 m above ground level (although subsequent landscaping may have obscured this reference point). Turning 90 degrees to the north enabled the north-south baseline to be established on the site. Interestingly, this baseline is only about 0.5° to the east of the long axis of the Low Line bridge.

The 1988 test excavation units were laid out in an arbitrary manner within the areas permitted by the Forks Renewal Corporation (Fig. 3). Each metre-square unit within a numbered trench was numbered and its coordinates noted. Total station survey equipment was to have been used on the project because it offered the potential to a) locate points in space and convert them to measurements within the agreed-upon grid system, and b) download this information to a desktop computer in the field lab. This meant that data for contour maps, stratigraphic profiles, excavation unit location, feature location, and artifact provenience could be electronically recorded and stored in computer files each day. A total station survey instrument was obtained on loan at no cost pending receipt of the necessary software to download, sort, and store the recorded data. Unfortunately, the software arrived late in the field season, and the supplier was unable to make it operate properly even after it arrived.

The results of this situation were severe. First, the instrument could only be used as a conventional, if highly accurate, survey instrument. Computerized trigonometric capability meant that horizontal and vertical angles and distances could be accurately measured, but that was all. Without the capability to download the information, hand recording on paper, and manual entry into the computer was all that could be accomplished. Second, all the excavation units had been laid out at angles to the horizontal grid system on the assumption that the total station equipment would easily convert locational information into grid coordinates. The inability of the system to operate as expected left the project with trenches that have coordinates for their four corners but within which individual 1 m x 1 m units are simply numbered consecutively. Exact horizontal point provenience within the site grid is lacking for most materials except those from Trench 7. However, relative horizontal point provenience measurements for all materials are available within each unit, and all vertical point proveniences and level and stratigraphic associations are recorded for all materials. Exact horizontal point proveniences for material in Trenches 1-6 can be calculated from the position of the wall from which the measurement was taken and the relative measurement itself. Third, the total station equipment was to have served as the initial cataloguing system. When an item was recovered, the system was to have recorded its three-dimensional point provenience as well as assigning the item a catalogue number and having additional preliminary descriptive fields entered by the equipment operator. There were two flaws with this concept. One was the inability of the equipment to store the volume of information that accumulated by the time the software arrived, especially when the programs could not be made operational. The other was the amount of time required to key in all the additional information in relation to the volume of material that was being recovered. Provided that the system could be made to work, such a plan might be useful on a small-scale site or on one where the rate of recovery of items was slow. On this project, with eighteen people recovering up to 200 items per level in different units of different trenches, it was unworkable. Field recording of finds therefore reverted to the slower, more standard, pen and paper methods.

It was quickly discovered that the surface of the East Yards was extremely hard due to the concentration of gravel and cinders in the matrix and to its compaction over time by heavy equipment. This matrix extended to a depth of approximately one metre over the entire area within which excavation was permitted, and it consisted of fill that was deposited in order to raise the land level to the appropriate grade required by the railway. In order to proceed through this matrix and expose the fur trade strata, a backhoe was hired to remove the bulk of this overburden from the seven trenches. A standard bucket with teeth was used, so overburden removal was halted approximately 10 cm above the surface of the fur trade strata.

Excavation then proceeded by a combination of natural strata and arbitrary levels. The natural strata were assigned capital letters, and the arbitrary levels, each 10 cm thick, were assigned numbers that corresponded to specific elevations above sea level. This technique provided a means of checking the provenience control. Trowel excavation was used, and all excavated earth was re-examined by passing it through 1/4" mesh screens. All recovered materials were recorded by their provenience, bagged, and sent to the field laboratory where they were cleaned, preliminarily identified, and entered manually onto a master computer catalogue. The materials were then stored for transfer to the University of Manitoba Anthropology Laboratory to await detailed analysis and interpretation. While excavation proceeded, written records were kept by each excavator for each level of each stratum within his/her excavation unit. Floor plans were drawn to scale for each level of each stratum, or more frequently if the situation required. At the completion of each excavation unit, the four walls were drawn to scale and photographed, and soil samples, in addition to those collected during excavation, were taken. An excavation unit was deemed to be complete when nineteenth century deposits were exhausted and river silts were encountered. While excavation continued the field supervisor kept a field journal and an extensive photographic record in black and white and in color. All units were backfilled at the end of the 1988 season.

Safety matters were addressed in three ways. An active railway line continued in use along the Low Line bridge while excavations were in progress; consequently, excavation was not permitted within ten metres of the track. The areas where excavation was permitted were enclosed within a temporary fence of orange plastic supported by iron rods. This also had the further safety advantage of keeping the general public away from the excavation units in which they might have been injured or which they might have damaged. A second safety measure was the use of shoring in Trench 5. The narrowness and depth of the trench required that this precaution be taken to prevent slumping of the walls. In addition, the Forks Renewal Corporation provided all archaeological personnel with hard hats.

The 1990 excavation area was located immediately adjacent to Trench 5 (Fig. 3), and a wide area excavation was planned. The coordinates of the 9 m x 4 m excavation area were N1023-1032/W973-977 m. The railway overburden was mechanically removed, and the nineteenth century ground surface was exposed. Thirty-six excavation units, each 1 m x 1 m, were marked out, and each was identified by its southeastern coordinates. The fifteen field school students were assigned to excavation units in a checkerboard pattern (Fig. 4). The object of this technique was to produce four stratigraphic profiles per unit, thus aiding in the control of recovered material and in later analysis and interpretation. Also, as later turned out to be the case, if all units within the 9 m x 4 m area could not be

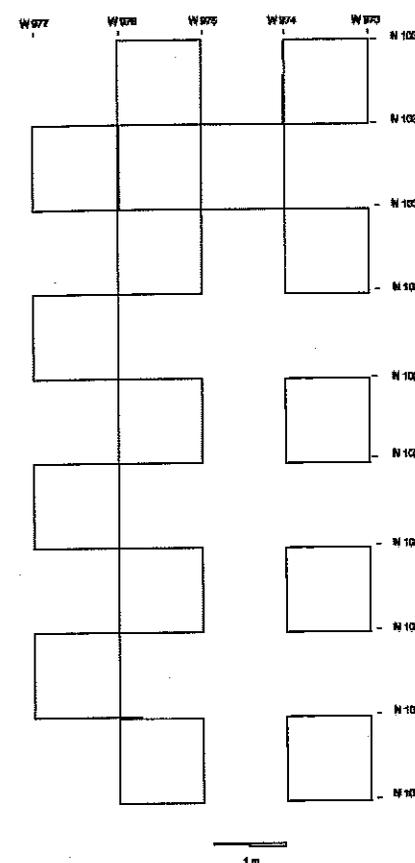


Figure 4: detailed layout of 1990 excavation units, DILg-33/90A.

excavated, then a complete grid of north-south and east-west profiles nevertheless could be constructed on a computer.

Five units were excavated at least one metre into river silt as part of the agreement with the Forks Renewal Corporation. When the 1990 field school ended, each unit was lined with plastic (so as to be identifiable to any future excavators) and backfilled. Then the entire 9 m x 4 m excavation area (i.e. the nineteenth century ground surface) was also covered in plastic and backfilled. Excavated materials from both field seasons were individually re-examined, identified in detail, counted, and entered into a computer catalogue. The 1988 materials were entered onto an IBM compatible computer using WATFILE software. The 1990 materials were entered onto a Macintosh using Excel 1.5. The Canadian Heritage and Information Network (CHIN) cataloguing format formed the basis of both catalogues because the materials belong to the province and were required, as a condition of the excavation permit, to be deposited with the Manitoba Museum.

## RECOVERIES

### Stratification

#### 1988

The East Yards is covered by approximately one meter of railway overburden at least in the areas of the 1988 and 1990 excavations. This overburden is generally coarse, loose and black, and consists of sand, gravel, clinkers/cinders, coal and ash. There are many post-1880 artifacts in it, predominantly related to railway activity. Sometimes this railway fill is internally stratified, especially when layers of gravel have been deposited, and at other times it is simply a turbulent mixture of matrix and remains. Throughout excavations in 1988 and 1990 the railway fill was labeled Stratum A. Recognizable variations within it were given numbers in the order in which they were encountered (e.g. A1, A2, etc.). In 1988 most of this overburden was mechanically removed from the trenches before excavation. Nevertheless, large quantities of railway artifacts were still recovered from the ca. 10 cm that was left above the fur trade strata. The order of strata in most

excavation units was relatively uncomplicated. Trenches 1-4 and 6 consisted of approximately one metre of railway overburden (Stratum A) followed by a relatively thin stratum of nineteenth century humus deposit (Stratum B) which was underlain by tan river silts (Stratum C) (Fig. 5).

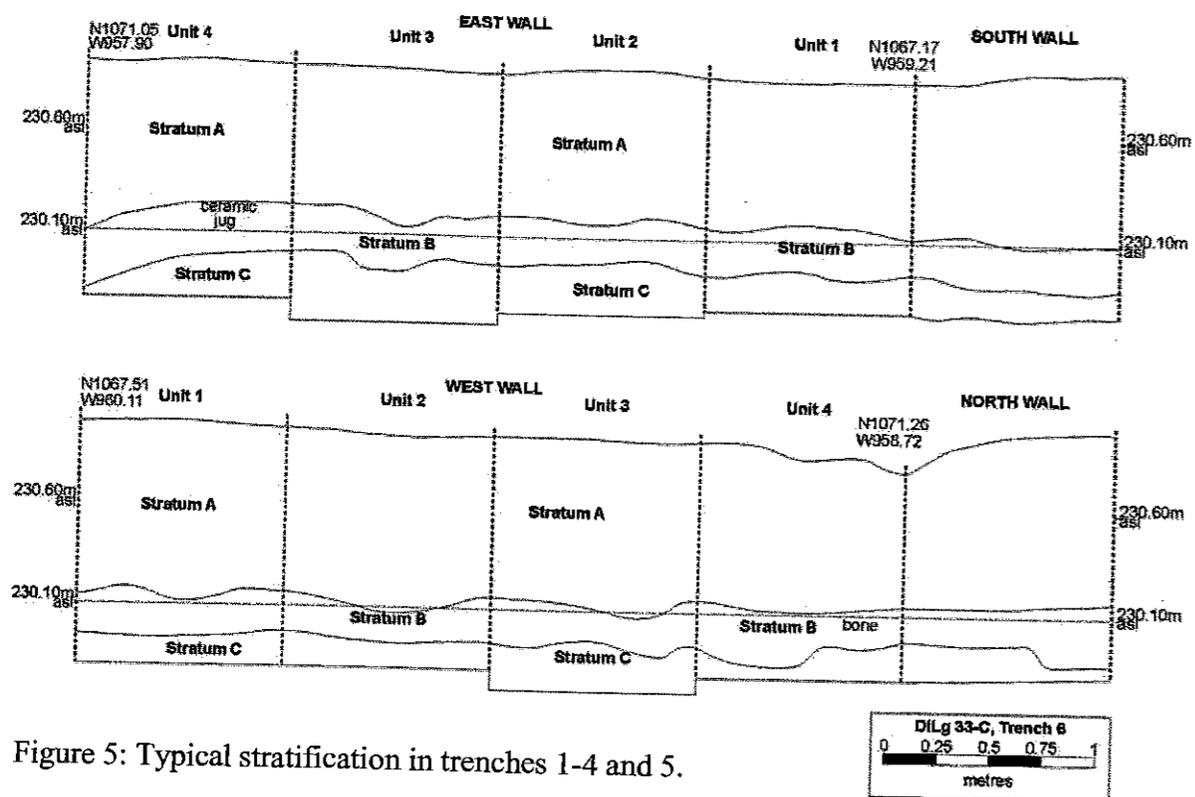


Figure 5: Typical stratification in trenches 1-4 and 5.

Stratification in Trenches 5 and 7 was quite different. Once the overburden had been removed in Trench 5, a feature that has been interpreted as a cellar was soon encountered. The feature had been excavated from the nineteenth century ground surface (Stratum B) approximately 1.5-1.7 m into Stratum C (Fig. 6). The stratification within the feature was extremely complex, consisting of a series of lenses of varying thickness sloping down into the center of the feature. Contents of the strata consisted primarily of household refuse.

Trench 7 was complicated by extensive disturbance that had occurred at various times since the early nineteenth century. Figure 7 shows that only a small portion of the trench, between N1001.50 m and N1005.25 m, provided undisturbed deposits containing early nineteenth century material. Above these deposits lay the railway fill, and beneath them lay the anticipated tan river-silts. Toward the river, bank erosion had terminated these strata at ca. N1001.50 m and caused some slumping. This slumped matrix was capped by more railway fill that had also slid and been dumped down the bank. The remainder of the trench contained mixed fill that was recorded as a series of Stratum A designations or a dense concentration of jumbled bricks (the "Sea of Bricks") that has been interpreted as part of the foundations of the HBC flour mill that was constructed in 1874 (Kroker and Goundry 1993b:10).

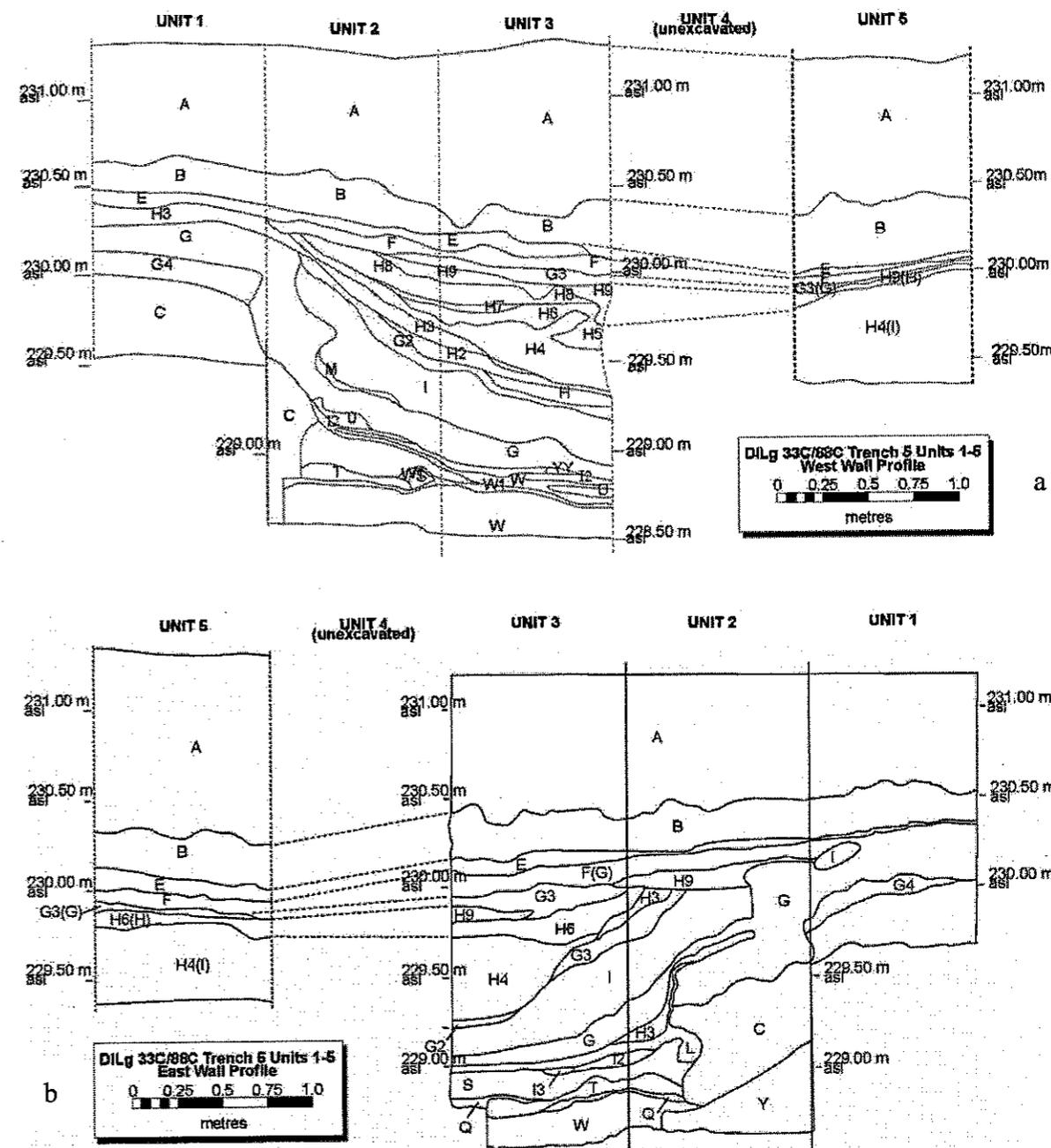


Figure 6: Stratification in Trench 5, Units 1-5, showing the cellar feature excavated into Stratum C. a) west wall, b) east wall.

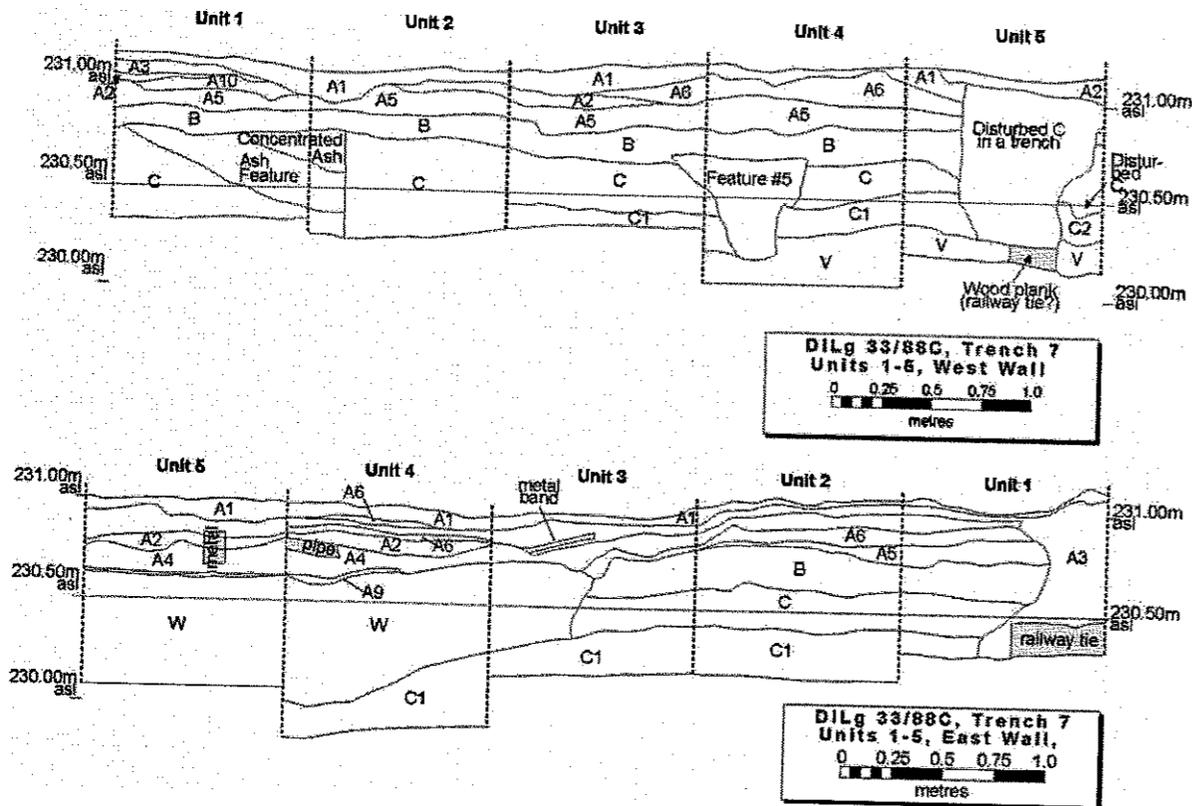


Figure 7: Stratification in Trench 7, Units 1-5, showing disturbed and undisturbed deposits.

1990

In 1990 a careful and thorough removal of the railway fill was accomplished using a Gradall excavator with a bucket that had a smooth edge. This procedure enabled the operator to skim the overburden right down to the surface of Stratum B, thereby reducing dramatically the quantity of railway material that was recovered from the fill. Below the railway fill was the nineteenth century ground surface, a tan-to-brown silt with humus (Stratum B). Variations within Stratum B were given numbers in the order in which they were encountered. All of the fur trade material from the nineteenth century was contained in the B series of sub-strata. Undisturbed tan river-silts, with occasional sand lenses, lay under the B series of strata and were labeled Stratum C. Once this stratum was encountered in an excavation unit, it was considered finished. By agreement with the Forks Renewal Corporation, as noted above, five units were excavated at least one metre into these silts. No artifacts or cultural faunal remains were recovered, but naturally deposited gastropods were found. The composite profile from N1023 m to N1032 m at W974 m illustrates this stratification (Fig. 8a). Two metres further west, the composite profile of N1023-N1032/W976 m reveals the same basic organization of strata (Fig. 8b), but there is an obvious dip in the surface of Stratum B from N1023.80 m to N1027.50 m. This dip appears to pre-date the fur trade deposits, since they appear to conform to an underlying contour.

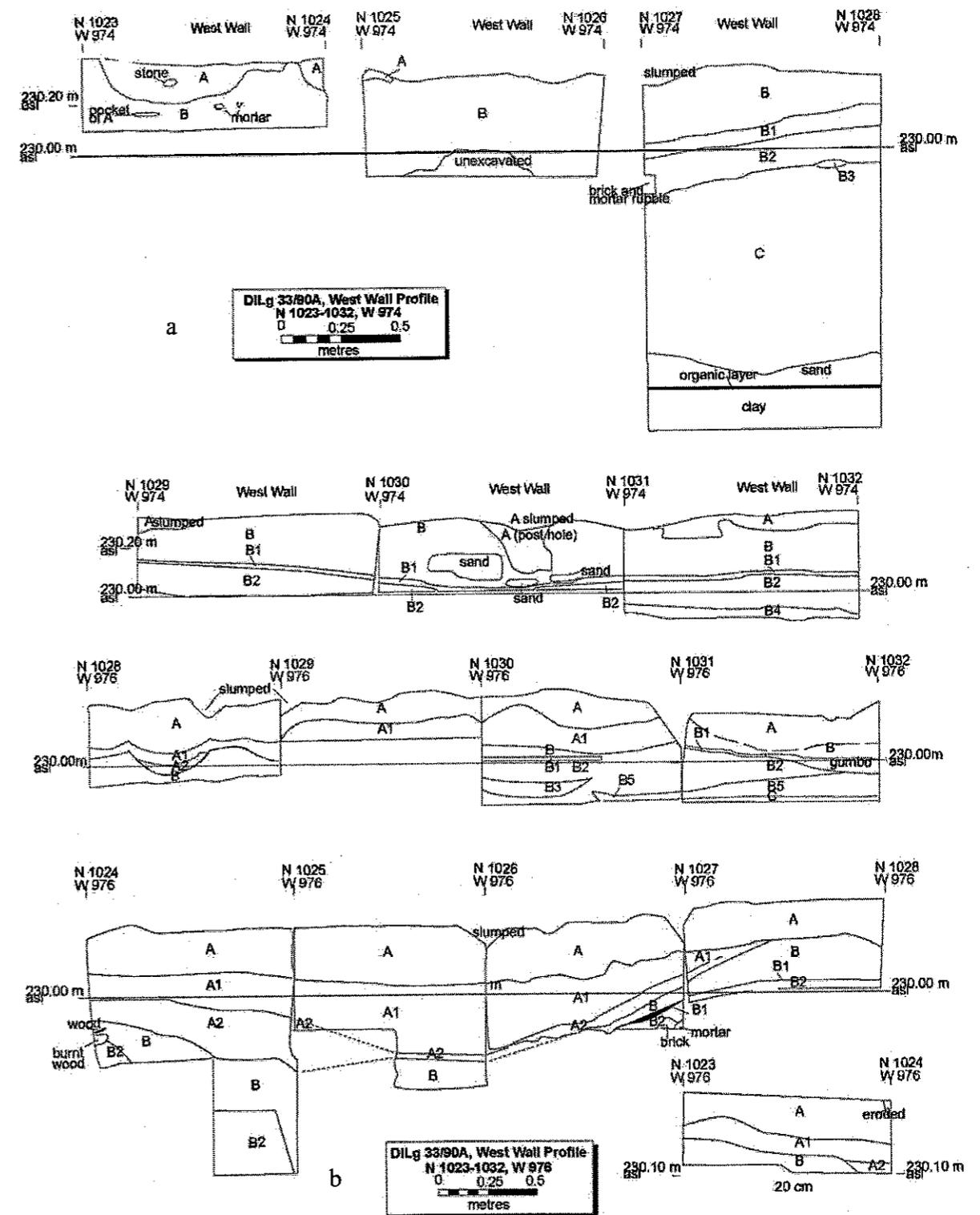


Figure 8: N-S stratigraphic profile from N 1023-1032 m, a) at W 974 m, b) at N W 976 m.

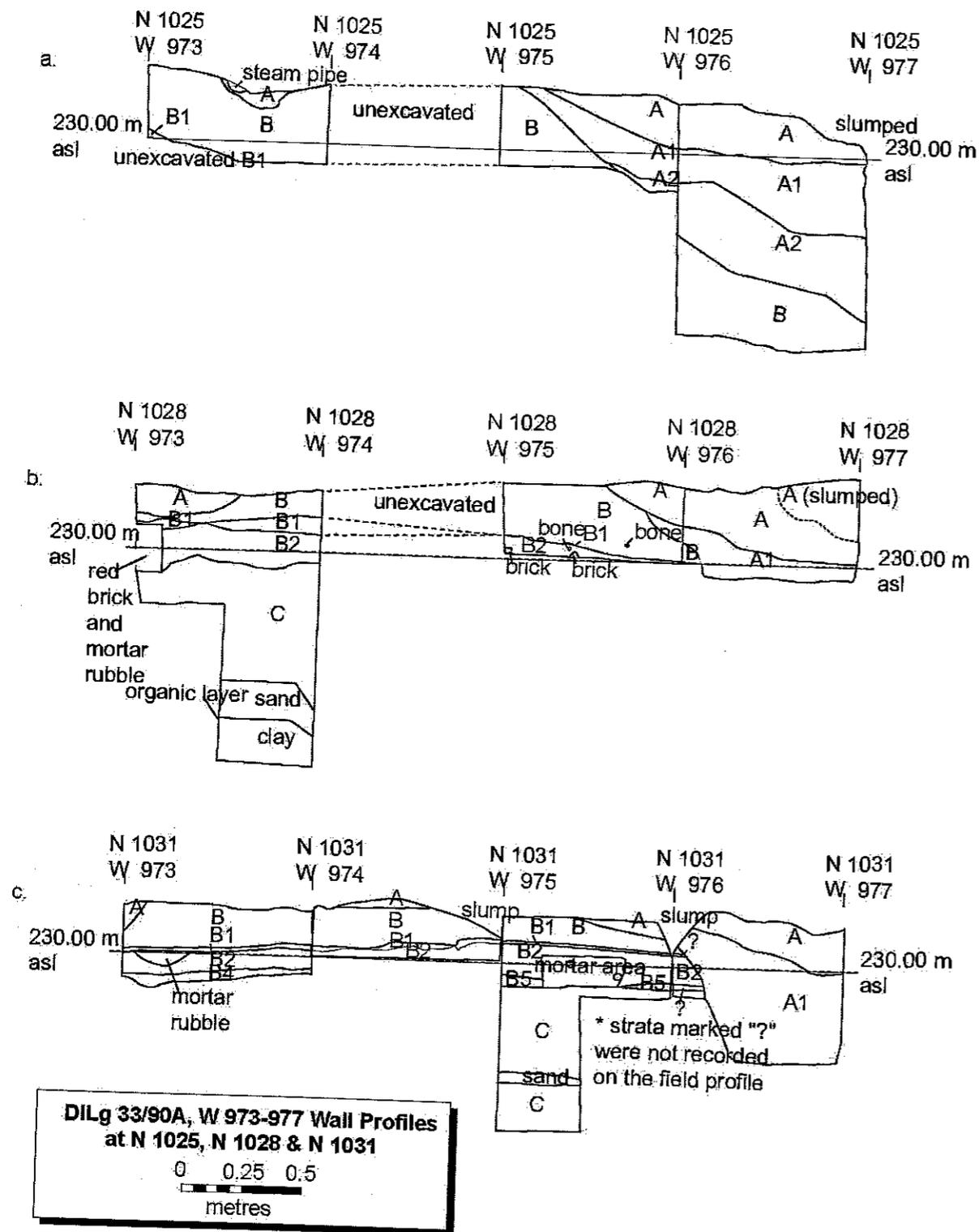


Figure 9: E-W stratigraphic profile from W 973-977 m, a) at N 1025 m; b) at N 1028 m; c) at N 1031 m.

Three composite east-west profiles (Fig. 9) also reveal the gross stratigraphic morphology of the area. Figure 9a shows the profile at N1025/W973-977 m. Stratum B drops abruptly to the west beginning at approximately W975.20 m. A series of gravel-fill strata overly this slope. The composite profile three metres further north at N1028/W973-977 m (Fig. 9b) shows that the relatively horizontal B series of strata are actually truncated, judging from Stratum B1, beginning at ca. W975.60 m. This abrupt truncation of the B series of strata is even clearer in Figure 9c. At N1031/W1031.15 m, there is an obvious termination of the B strata by gravel fill.

No simple explanation for the stratification is forthcoming. The dip seen in the W976 m composite profile and the slope to the west seen in the N1025 m composite profile could both result from either natural or cultural causes. The truncated Stratum B series seen in the N1028 m and N1031 m profiles, however, is clearly the result of massive and sudden erosion or of human excavation. Construction of railway bridges and an earlier re-location of HBC Warehouse #4 are potential sources of human disturbance.

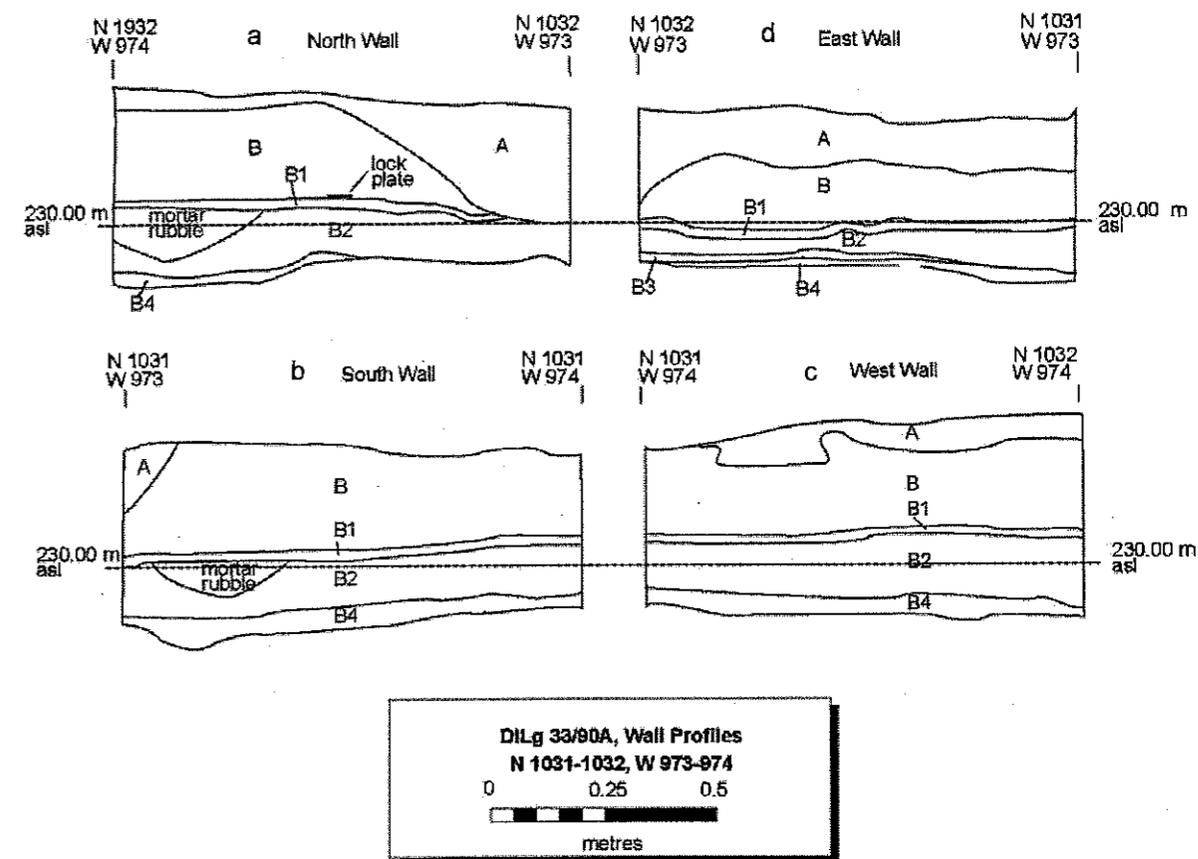


Figure 10: Stratigraphic profiles of excavation unit N 1031 W 973.

Details of stratigraphy in the northern units of this section reveal considerable complexity. Excavation unit N 1031 W 973 revealed very interesting stratification relating to the 1988 cellar feature and depositional events that preceded and followed it (Fig. 10). The north and east profiles (Fig. 10a, d) show the removal of Stratum B that resulted from excavating the southwest corner of Trench 5 in 1988. Stratum B was underlain by a thin

but continuous stratum of brown, woody, organic material labeled B1. This stratum was found in most other excavation units as well and it serves as a useful marker to correlate depositional events from unit to unit. Below this stratum lay B2, a matrix similar to B, except for the inclusion of mortar rubble both concentrated (Fig. 10a, c) and scattered. Stratum B3, another wood layer that was thickest in the northeast quadrant (Fig. 10d) and that appeared to contain individual, though rotted, boards, lay beneath B2. At the bottom of the profile lay an ash and charcoal stratum (B4) that varied in thickness from 2-10 cm. This matrix was very similar to the ash and charcoal fill in the cellar feature from Trench 5 in 1988. This 1990 recovery suggests that this matrix is consistent throughout its horizontal distribution. The 1990 stratum, however, is at a much higher elevation than that of 1988. This vertical discrepancy indicates that the 1990 matrix likely represents surface spill at the upper edge of the cellar, rather than cellar fill itself.

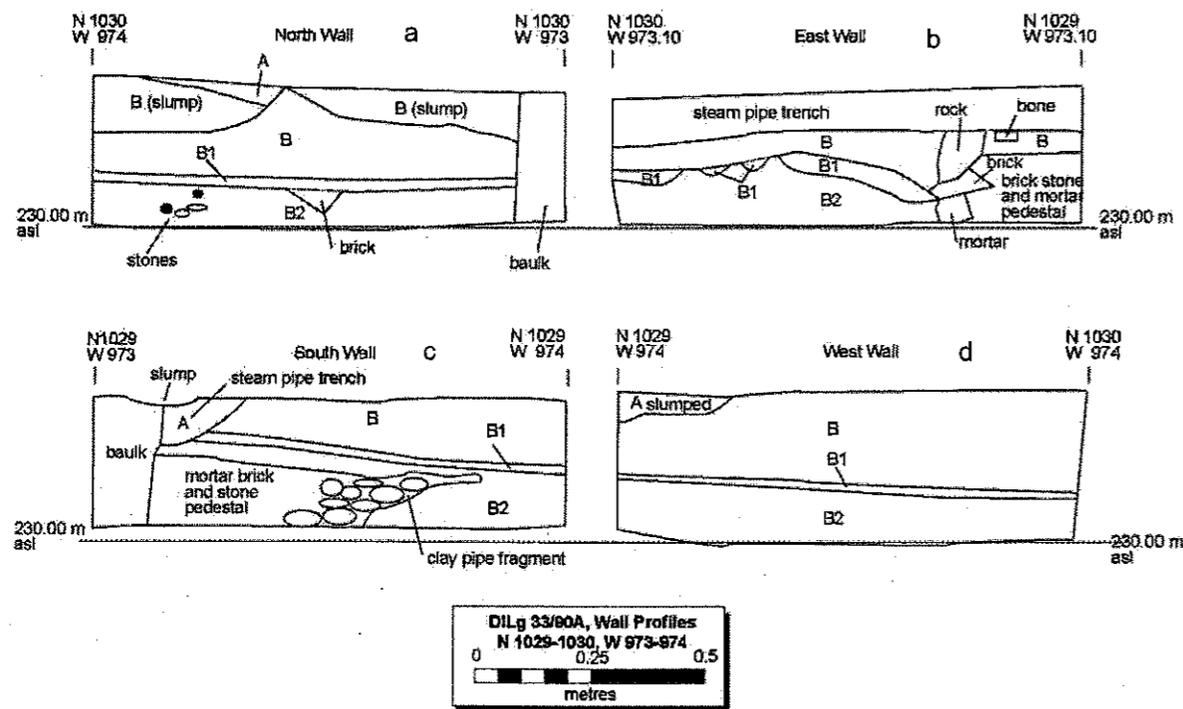


Figure 11: Stratigraphic profiles of excavation unit N 1029 W 973.

Some similar depositional patterns emerged in Unit N 1029/W 973 m, (Fig. 11). Strata B1 lay under B, and it in turn was followed by B2. The latter stratum contained much scattered brick, mortar and stone, as well as a large mortar, brick and stone feature in the southeast corner (Fig. 11b, c). Stratum B1 exhibits an oddly erratic thickness in the W973 m wall (Fig. 11b), and it abuts the mortar, brick and stone pedestal in the southeast corner. In the south wall, however, B1 clearly lies above the same feature (Fig. 11c). The north wall shows that stone and brick are scattered in B2, but not in B, and that B1 lies unbroken between these two strata (Fig. 11a). Although potentially ambiguous, The weight of evidence suggests that the feature was contained in stratum B2. It may however also be that either: 1) all or part of the feature is intrusive into B1 and B2 from B; or 2) part of the feature was reconstructed on top of the original feature, probably after the deposition

of B1. The obstruction caused by the steam pipe and its trench makes resolution of this issue difficult.

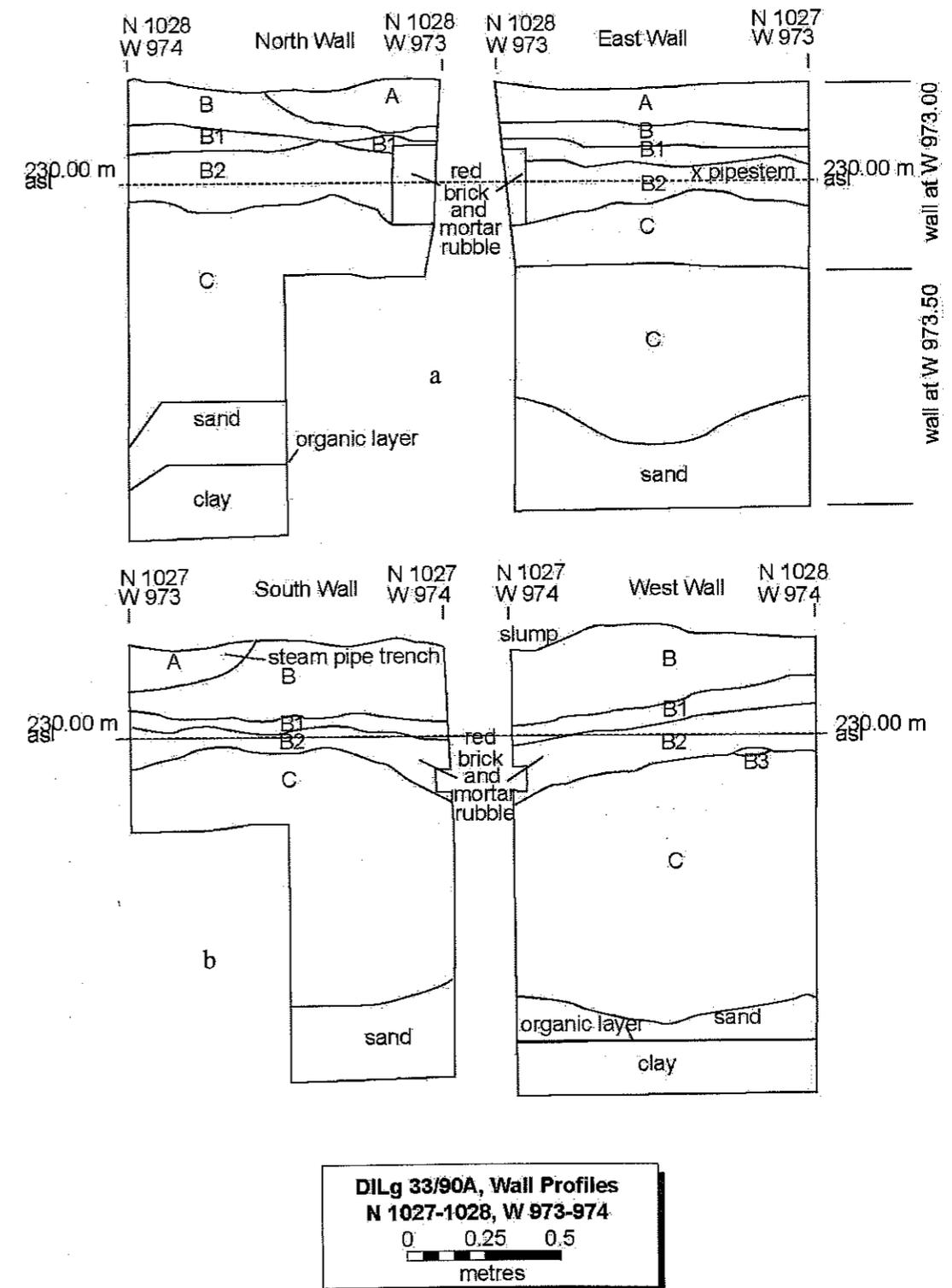


Figure 12: Stratigraphic profiles of excavation unit N 1027 W 973.

The north and west walls of Unit N1027/W973 m are depicted in Figure 12a and b. They show that B1 varies considerably in thickness at this point and that it begins to slope down to the south, as noted above. Stratum B2 contains much scattered mortar, as well as a red brick feature in the northeast corner. The feature sits on or is slightly embedded into the top of Stratum C, spans the complete thickness of B2, and appears to have protruded slightly above the ground surface when B1 was laid down (Figure 12a). Another isolated red brick is visible in Stratum B2 in the southwest corner of the unit (Figs. 8, 12b).

Finally, Figure 9c also shows a heavy mortar concentration in B2. This concentration clearly lies below an intact B1 stratum, it intrudes into B5, and it rests on C. In this respect, it is similar to the brick feature in N1027/W 973 m. Similarly, Figures 11b and c, and Figure 10c show the relationship of the mortar rubble to Stratum B2. Elsewhere, B2 contained many scattered mortar fragments.

## FEATURES

### 1988

#### The Cellar

A plan view of this feature reveals a right-angled corner with a post set in the apex of the angle. The profile and the excavation notes indicate that boards attached to this post supported the edges of the feature (Fig. 13). The feature is interpreted as a cellar that was later re-used as a garbage pit.

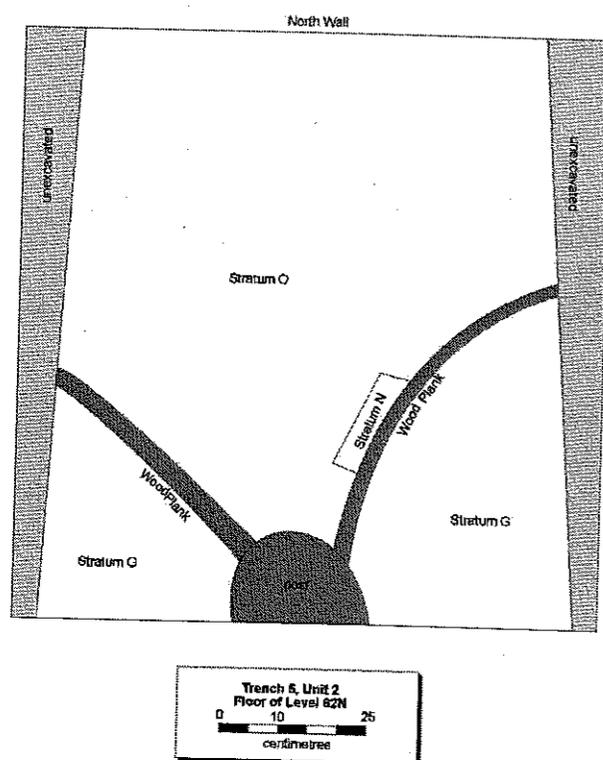


Figure 13: Plan view of corner post and boards of the cellar feature in Trench 5.

The cellar appears to have been quite large. One of its corners is found in Unit 5-2, and the orientation of its sides indicates that the excavation trench cuts almost exactly across the diagonal of the cellar, if it is assumed to be a square feature. Units 5-2, 5-3, and 5-5 contain cellar fill. Although unit 5-4 was not excavated, it is assumed that it also contained cellar fill. The far corner of the feature was not found in Trench 5, suggesting that the diagonal measurement of the cellar is at least 4 m. In turn, this suggests that the sides may be about 3 m long. The depth of the feature has already been given as 1.5-1.7 m, and its contents consist of household refuse, including fauna, ceramics, nails, pane and bottle glass, and leather footwear, etc. These items will be discussed in the Recoveries section of this paper. The strata in which these materials were deposited in the cellar are lowest in the presumed center of the

feature and slope upward toward the edges of it. There are many strata within the feature. Each one is relatively thin, and they reflect a complex sequence of small depositional events. This stratigraphic configuration is typical of pit or cellar fill deposits (e.g. Privy/Refuse Pits 1 and 2 at Upper Fort Garry).

#### The Sea of Bricks

Figure 7 shows the profile of the W1017 m wall of Trench 7. Units N1010 m to N1020 m clearly show the jumbled concentration of clay bricks that characterized the floors of these units. Most bricks were a yellow-buff or tan colour, and most unbroken ones were plain. They were not found lying flat, as in a pavement, or stacked, as in a wall or foundation. Instead, they were lying or standing at odd angles on their flat surfaces, their edges, and their ends (Fig. 14). In depth, they were up to 50 cm thick and were contained within a fine ashy matrix of the A-series of strata. They may have belonged to the HBC grist mill that stood on the site in the later nineteenth century. Had the building decayed in situ, the bricks would have been found in a more orderly arrangement. Instead, it seems more likely that the building was demolished at some point and the bricks tossed together into a low heap. The feature's presence in a depression dug into and through the early nineteenth century ground surface suggests that the bricks may have been part of the foundation of the mill or the bottom of it. This disposition of bricks also suggests that a nineteenth century excavation was used as a convenient disposal site for bricks from elsewhere in the vicinity.

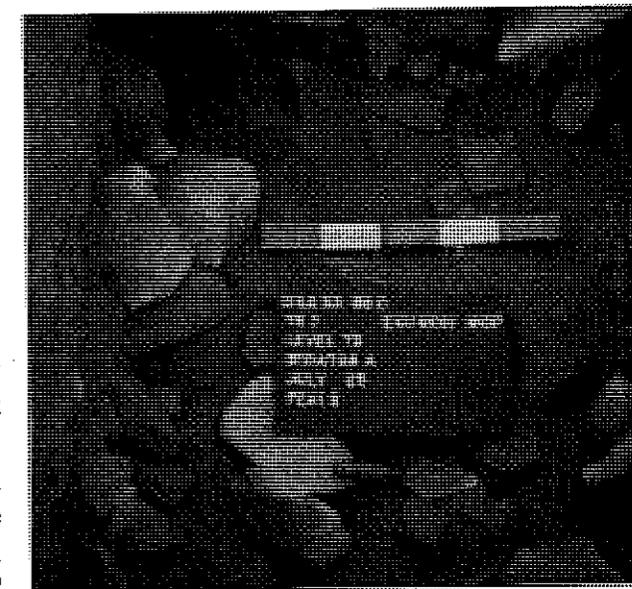


Figure 14: Photograph of the Sea of Bricks in units N 1010-1020 m at W 1018 m.

Archival maps in Guinn (1980) indicate that Trench 7 may not have intersected the grist mill at all, but encountered instead the remains of a short-lived warehouse. This hypothesis, however, does not account for the presence of fire bricks.

### 1990

With only one exception, the features presented below were recovered in Stratum B2 and fell between 229.80 and 230.10 m above sea level (asl). All features depict evidence of construction-related activity. Furthermore, when the locations and orientation of all these features are considered together within the entire excavation area, and when the 1988 cellar feature is included in the picture, a pattern seems apparent.

Unit N1027/W975 m exhibited a concentration of remains in the northeast corner at 230.00 m asl in Stratum B2. The dominant artifact in the concentration is a board lying flat with its long axis running from northeast to southwest (Fig. 15). Surrounding the board are fragments of wood, bone, ceramic vessels, brick, glass, and a leather fragment.

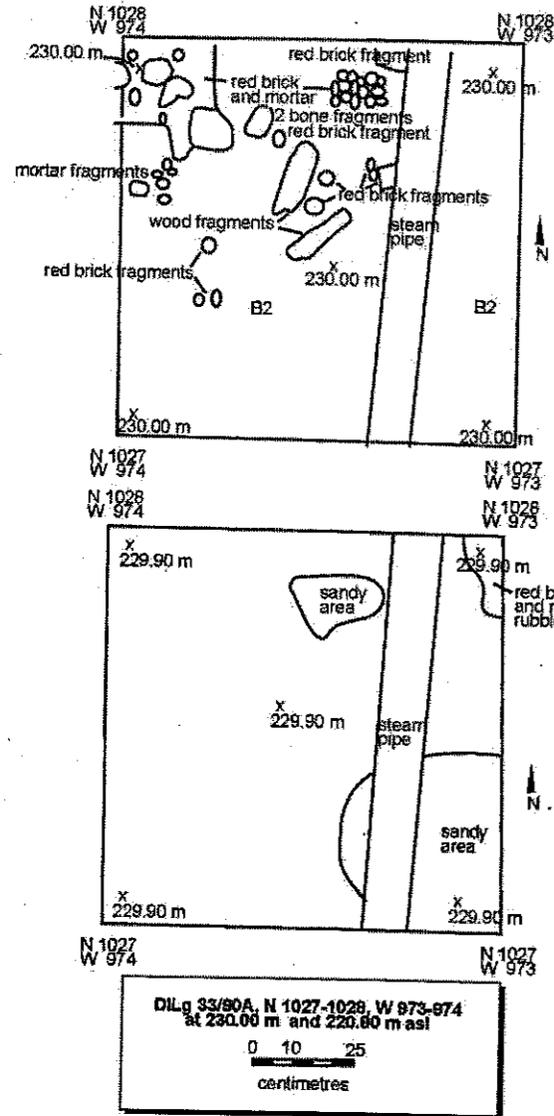
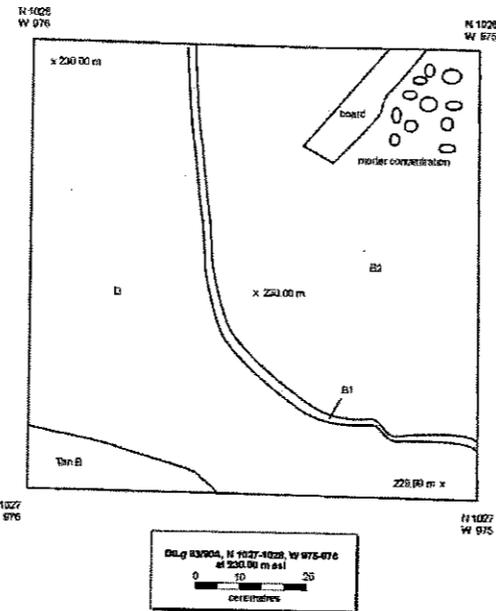


Figure 15: Floor of N 1027 W 975 at 230.00 m asl showing wood and associated materials.

To the east, N1027/W973 m contained features with some depth. Figure 16a shows that concentrations of mortar, brick, wood and artifacts are evident at 230.00 m asl in stratum B2. Most of these materials are found in the center and northwestern part of the unit. The artifacts consist of glass fragments, ferrous metal fragments, two bone fragments, a clay pipe fragment, and a piece of lithic detritus. Two substantial pieces of wood appear between the main mortar and brick concentrations. Ten centimetres lower, the floor of the unit looks much different (Fig. 16b). In the interval between 230.00-229.90 m asl there was an irregular and discontinuous lens of organic material, predominantly in the western part of the unit. Below this lens, the matrix became predominantly silt that was heavily streaked with charcoal, and that contained sandy areas (Stratum B5). Other cultural remains had become scant

Figure 16: Floor of N 1027 W 973 a) at 230.00 m asl showing concentration of brick, mortar and wood, b) at 229.90 m asl.

by the end of the level apart from the charcoal and the remnants of the brick and mortar feature in the northeast corner. Interestingly, this feature was flanked on the west by decomposed wood stains.



Immediately to the north, an intriguing feature containing rock, brick mortar and wood was exposed (Fig. 17). The bricks in the southeast corner were first encountered at 230.14 m asl, the wood portion of the feature was first encountered between 230.19-230.10 m asl, and the feature was still in the floor of the unit at 230.00 m asl when it was closed. The overall orientation of the feature is northwest to southeast. This orientation is suggested, in particular, by the wood which appears to be in the form of a trough with the edges higher than the center. Decomposition of the wood, however, made confirmation of the trough interpretation impossible. In reality, it was probably a round log/pole that butted up against, or was incorporated into the rock, brick and mortar concentration to the south. There seems to be little doubt that this feature represents structural remains of some sort.

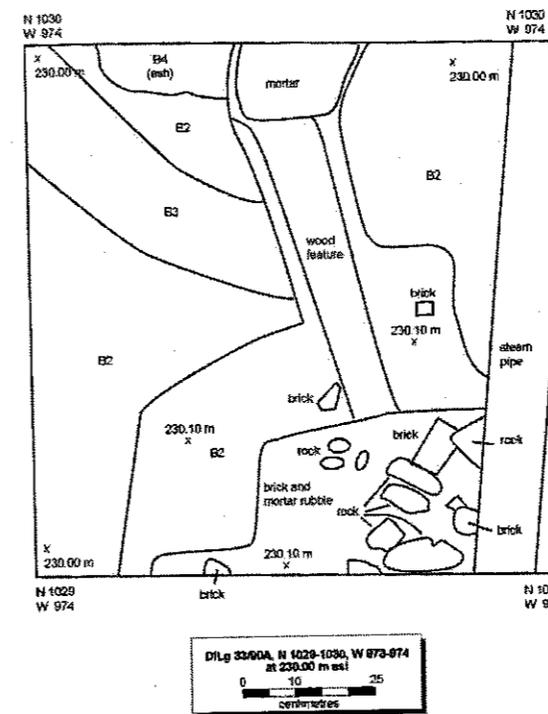


Figure 17: Floor of N 1029 W 973 showing concentration of brick, mortar, rock and wood.

The surrounding matrices are noteworthy as well. Stratum B2 predominates in the floor, but B3 and B4 are also evident. The former appears as a restricted, thin deposit running from the center of the unit to the northwest corner. Its thinness and restricted distribution are consistent with its tentative appearance in N1027/W973 m as discussed above. Stratum B4, an ash deposit with charcoal flecks, is likely the southern edge of the lens that appears in N1031/W973 m (discussed below). The temporal relationship of B3 to B4 is not evident here, but they are clearly shown in Figure 10d where the former lies above the latter. The evidence from this set of features indicates that the construction event(s) depicted here followed the deposition of the ash and charcoal lens and the deposition of B3. Since B3 and B4 did not extend into N1027/W973 m, it is difficult to ascertain the relative age of the brick

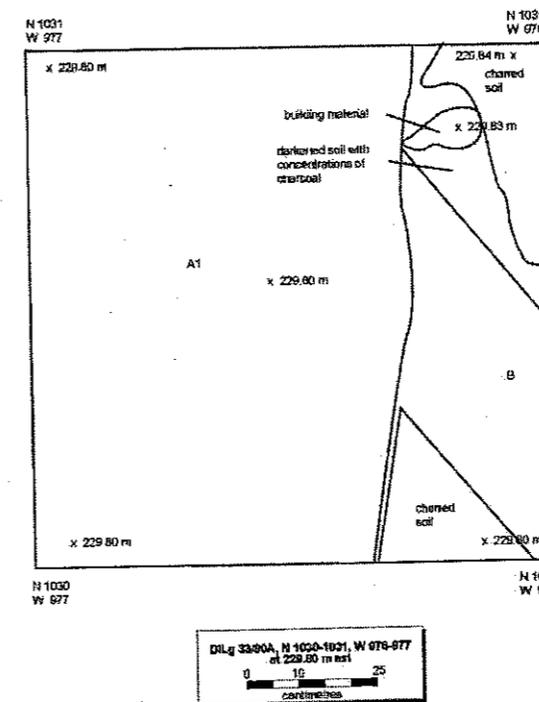


Figure 18: Floor of N 1030 W 976 at 229.80 m asl showing orientation of charred soil.

and mortar features in that unit. Since the features in this unit and in N1029/W973 m both contain similar materials and are found in the same stratum, contemporaneity is assumed.

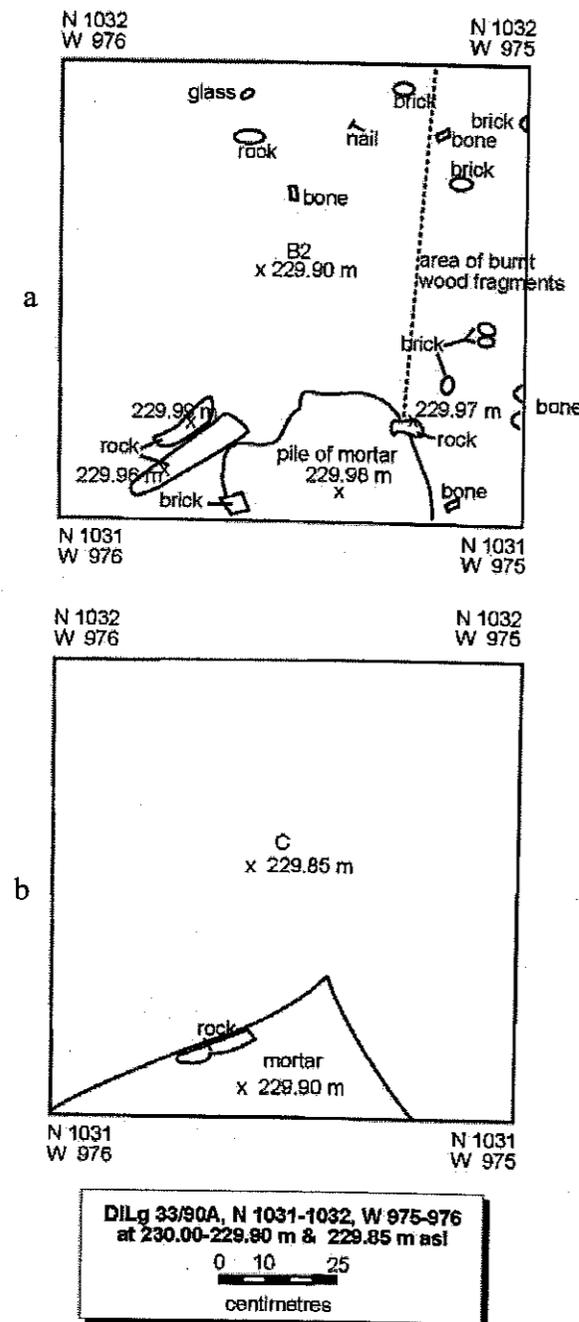


Figure 19: Floor of unit N 1031 W 975 at a) 230.00-229.90 m and b) 229.85 m asl.

unit from northwest to southeast and a brick and limestone feature in the west wall. Ferrous metal, glass, a clay pipe-stem fragment and interestingly, a chipped stone point were found in association with the features in Stratum B2. Ten centimetres below this, the

Unit N1030/W976 m to the west showed an interesting matrix configuration. While most of the unit consisted of A1, the eastern third of the floor at 229.80 m asl consisted of B2 plus areas of charred soil (Fig. 18). The interesting part of this feature is the sharp definition and alignment of the charred soil, particularly in the south. In the north, the charred soil is associated with building material and chunks of charcoal. Mortar, chinking, brick, stone, wood and nails were also recovered at this level. The alignment of the feature is northwest to southeast, consistent with the orientation of features already discussed. The inventory of recovered materials and the stratigraphic context of the feature and the recovered items are also consistent with what has already been noted in other units.

Figure 19 illustrates the floors of Unit N1031/W975 m at 230.00 m to 229.90 m and 229.85 m asl respectively. The upper floor (Fig. 19a) shows a constellation of brick, rock and decomposed wood fragments surrounding a heavy concentration of mortar, brick and rock within stratum B2. Bone, glass, nails and ceramic fragments were also recovered in association with the feature. The lower floor (Fig. 19b) showed a stratigraphic change to sterile river silts (Stratum C), except for the bottom of the rock and mortar feature in the south wall. At 229.90-229.85 m asl the outline of that feature is unmistakably quadrangular and oriented on a northwest-southeast axis.

Finally, the features in N1031/W973 m deserve attention. Figure 20a shows an alignment of mortar, brick and stone running diagonally across the

diagonal feature is still evident, but strata B3 and B4 have been exposed (Fig. 20b). Heavy concentrations of wood, including decomposed boards, were found above B4 on the eastern side of the brick and mortar feature. Mammal bone fragments were the most common recoveries in both B3 and B4, and a fin ray was also recovered from B4. When these two strata were removed, the clay and mortar feature disappeared. Few items were recovered from B3, but B4 provided quantities of bone, glass, nails, ceramic fragments and clay pipes. Excavation ceased when Stratum C was exposed, and this stratum occurred throughout the unit before or by 229.80 m asl.

A composite view of all the features discussed above is shown in Figure 21. The elevations of the floors in the units vary around 230.00 m asl. The orientation of all the features indicates the general alignment of the structure represented by the remains that were recovered. An imaginary axis (shown by the dashed line) can be drawn between the mortar concentration on the south wall of N1031/W975 m and the center of the mortar concentration in the southeast corner of N1029/W973 m. This line is almost exactly parallel to the long axis of the feature in N1031/W973 m and also to the parallel lines in the feature in N1030/W976 m. The wood portion of the feature in N1029/W973 m lies almost parallel to this axis, and the board in N1027/W975 m lies almost exactly at right angles to it. The edges of the features in N1030/W976 m, N1031/W975 m and N1031/W973 m clearly exhibit the same axis and orientation. Similarly, the west wall cribbing of the cellar feature in Trench 5, Unit 2, parallels this axis. The wood fragments in N1031/W973 m appear to lay either parallel, or at right angles, to this axis.

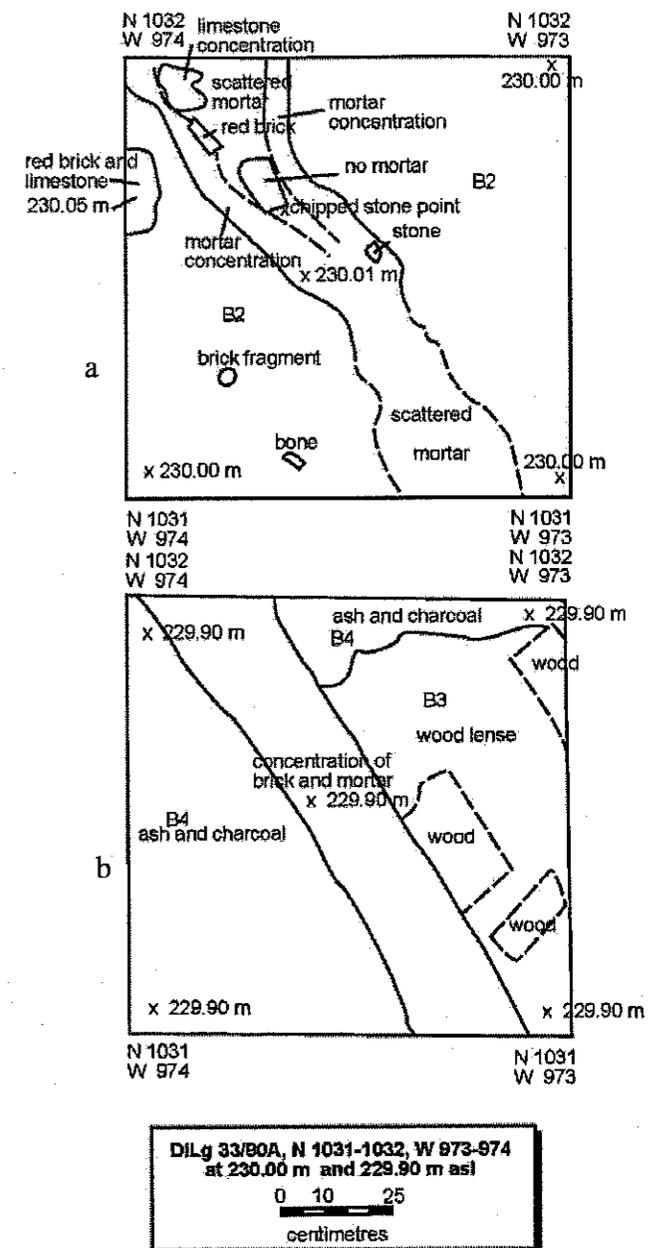


Figure 20: Floor of unit N 1031 W 973 at a) 230.00 m asl and b) 229.90 m asl showing northwest to southeast alignment of feature.

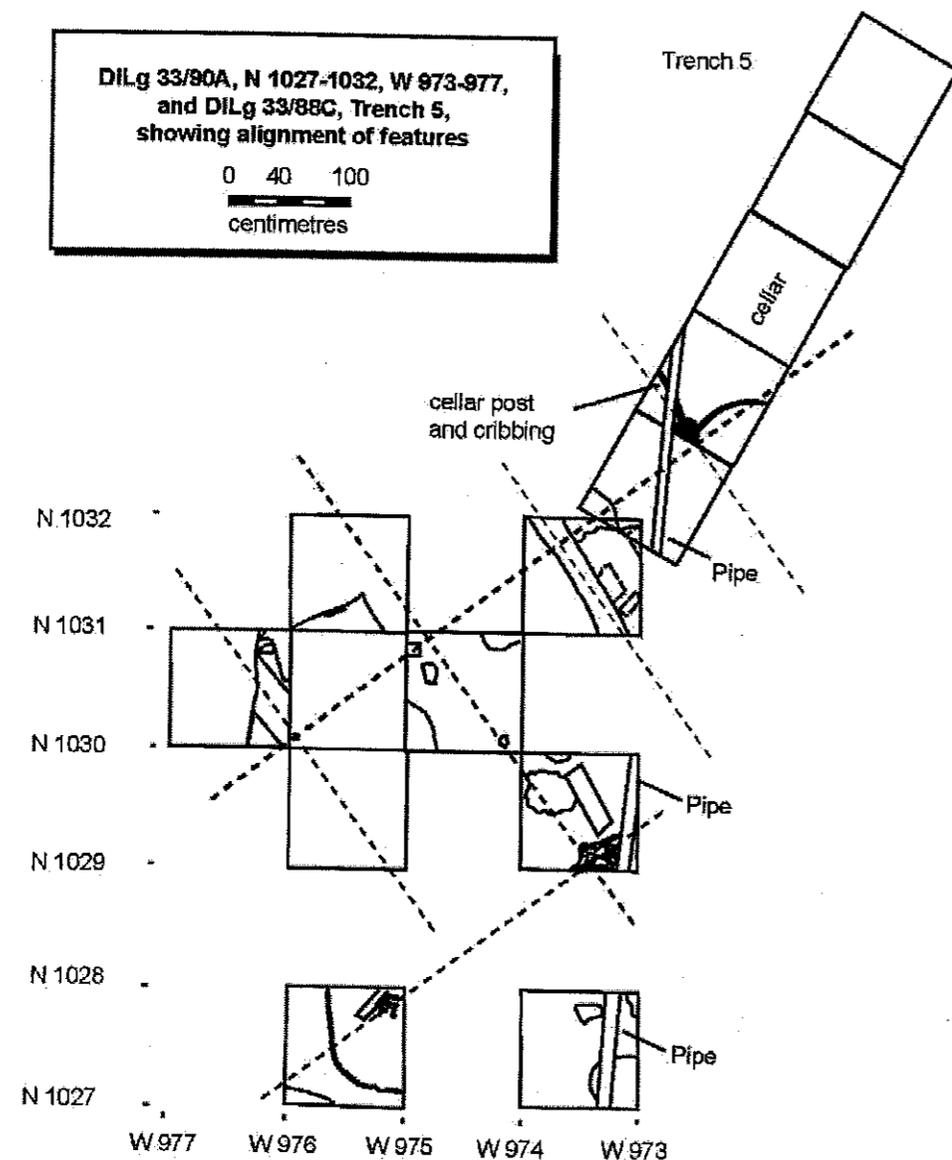


Figure 21: Composite floor plan of 1990 excavations at ca. 230.00 m asl showing the orientation of the wood and mortar features in the B series of strata to the 1988 cellar feature in Trench 5, Unit 2. Dashed lines highlight the NW-SE orientation of features.

## CHRONOLOGY

Stratum A contains objects that indicate its age to be of late nineteenth century and early 20th century origin. The turbulence that is evident in this series of strata precludes an accurate age assessment of individual sub-strata and lenses. Deposited primarily as fill, the matrix was intended to elevate the Hudson's Bay Flats, as the area was formerly known, to the height required for railroad grades.

Stratum B dates to the early and middle nineteenth century. This date can confidently be assigned on the basis of a number of artifacts that are datable to that period. The 1988 excavations indicated little internal stratification to Stratum B, but the work in 1990 suggested that, possibly within or immediately adjacent to buildings, a finer chronology might be detected. The paucity of datable artifacts from the 1990 B series was therefore disappointing. The cellar feature in Trench 5 also provided a number of chronological indicators, as did several bricks from Trench 7. Historic ceramics and historic fauna (sheep - *Ovis aries*) dominate the datable materials, with over two-thirds of these materials falling within the period of Fort Garry occupancy (1821-1852).

The 1988 excavations of Stratum B show that, with the exception of a few aboriginal lithics and ceramics, the bulk of deposition occurred after 1816. Several late intrusions were also found, including a Drewery's bottle dated to 1903 and some manganese tint glass that pre-dates World War I. The other datable recoveries show initial manufacture dates in the early to mid-nineteenth century. The upper levels of Stratum C in Trench 7 contained an intrusive Copeland ceramic fragment with a manufacturing date of 1820-1830.

The cellar feature deserves special attention. No chronologically indicative glass or metal was found in this deposit, but the fauna and ceramics are indicative of the feature's depositional history. Stratification of this deposit, though complex, revealed no indication of mixing or periodic cleaning.

Sheep remains were found in Strata H, I and J (later re-labeled G) of Trench 5-3 (see Fig. 6). Sheep were first imported to the Red River Settlement in 1833. Their deposition in the cellar fill suggests that they were used for food shortly after they became available. Their presence in Stratum B of Trench 4-1 provides a similar *terminus post quem*.

Minton ceramics with the Swiss Cottage pattern were found in Strata I and J (G) of the cellar feature. This pattern was manufactured as early as 1822 (Sussman 1978:16) and was probably imported by the HBC through Robert Elliot who supplied it with ceramics and glassware between 1802 and 1835 (Sussman, 1978: iv, 1-2). Spode began producing "Willow" pattern ceramics around 1780 and this pattern is found in Strata H and I. The "Ruins" pattern, introduced by W.T. Copeland in 1848, was found in Stratum H. Spode's "Italian" pattern, introduced in 1816, was found in Strata H and I.

The lower, hence earlier, occurrence of Minton ceramics, in association with the earliest sheep remains, suggests that Stratum J (G) cannot pre-date 1833. The appearance of "Ruins" pattern in association with sheep remains in Stratum H suggests that this stratum cannot pre-date 1848. The presence of "Willow" and "Italian" patterns in Strata H and I, along with sheep remains, is consistent with this interpretation. Strata underlying Stratum J (G) predate 1833, and those above Stratum H post-date 1848. These overlying strata also pre-date 1852 when Fort Garry was dismantled.

The vertical distribution of remains in the cellar feature provided the basis for the delineation of the following four components:

- Component I: Strata W, W1 (1817-1820)
- Component II: Strata H3, L, I2, I3, O, Q, R, S, T, U, Y, YY (1820-1833)
- Component III: Strata G, G-2, I, M, N (1833-1848)
- Component IV: Strata B-F, H (1848-1852)

Component I consists of Strata W and W1, which are horizontal strata that appear to pre-date the 1826 flood. W1 is thought to be silt from the flood itself. Component II consists of everything between W1 and G (i.e. H3, L, I2, I3, O, Q, R, S, T, U, Y and YY). Much of the material in these strata (wood, chinking, windowpane glass, nails, silt) are deemed to result from flood cleanup between 1826 and 1833. Component III consists of G, G2, G3, I, M and N and contains the earliest strata with sheep bones. Component IV consists of Strata B-F and H (in all its forms except H3), and its onset is marked by the appearance of "Ruins" pattern.

The "Sea of Bricks" in Trench 7 contained several bricks and fragments that exhibited makers' marks. These bricks were made in St. Louis, Missouri, between 1883 and 1887 and were brought to the RRS, presumably for use in the construction of one or several grist and/or flour mills that were eventually demolished in 1907. Thus, the feature was likely created at that date. The A-series of strata that overlay this feature are, therefore, contemporaneous with, or post-date, that event.

The 1990 excavations also recovered a number of chronologically indicative remains from the B series of strata. Located immediately south and west of the cellar feature, these remains may represent *de facto* refuse created when the Fort was dismantled in 1852; or they may represent sheet deposition of primary refuse outside the building that stood over the cellar; or they may represent both types of deposition. Notably, all the datable materials are ceramics. The absence of sheep remains suggests that food refuse may have been treated differently than inorganic refuse.

Stratum B2 contains a Copeland "Sprig" pattern fragment, first manufactured in 1832. The overlying Stratum B1 contains a fragment of Mellor, Taylor & Co.'s "Arcade" pattern, not manufactured until 1880. The remaining ceramics consist primarily of Copeland patterns. The earliest manufacturing date is 1828 for the "Botanical" pattern, and a number of identified patterns were first manufactured in the 1830's and 1840's. A pattern identified as "Wheat" was also found. If this identification is accurate, the earliest date of its manufacture is 1878. The pattern may also be "Ceres" in which case its earliest date of manufacture could have been 1851 by Edward Walley or 1859 by Elsmore and Foster (Sussman 1985:12-13). While the "Arcade" and "Wheat" patterns post-date the occupancy of Fort Garry, all other patterns, including "Ceres", are consistent with occupancy of the fort. There are two aboriginal ceramic fragments, which may indicate either contact between traders and Aboriginal people or late pre-contact Aboriginal occupancy of the site.

## RECOVERED OBJECTS

The artifacts and faunal remains recovered from the site were catalogued following the Canadian Heritage and Information Network (CHIN) data field structure and the value (or variable) lists developed in-house by the Manitoba Museum staff because the museum is the repository for the objects. The data were entered into computer files using Watfile software, instead of CHIN software, and were later converted to Macintosh format Excel files.

The museum's cataloguing system is based on a functional classification that assumes that a) the function of an artifact is known, and b) each item has a single function. The artifact descriptions given here conform to the CHIN categories, and the full database,

ordered by year and catalogue number, is presented in Appendix A. Appendix B, C, D and E present by CHIN category, sub-category, common name, provenience and frequency the recovered items that are discussed in this report.

The recovered materials fall naturally into several levels of organization. The first major subdivision of materials is the year of recovery; consequently, the 1988 materials (Appendix B, C, D) will be described separately from the 1990 materials (Appendix E). The 1988 materials are further subdivided according to the trenches in which they were found. Trenches 1 - 4, Trench 6, and the Units 1 - 5 of Trench 7 will be discussed together (Appendix B-1, B-2), Trench 5 will be discussed separately (Appendix C-1, C-2), and Units 6 - 64 of Trench 7 will be treated together (Appendix D-1, D-2).

In both the 1988 and 1990 materials, Stratum B will be the only cultural deposit that is discussed, except for Trench 5 and Units 6 - 64 in Trench 7. The reason for this limitation lies in the fact that Stratum B and its variants contain the evidence of fur trade occupancy of the site. Stratum A consists of railway fill that was mechanically removed as completely as possible. Stratum C is sterile river silt. While some cultural materials are recorded from Stratum C, they are few and often of uncertain chronological origin. Trench 5 contains a cellar feature with complex stratigraphy, taphonomy and cultural remains. This feature lay beneath a house at Fort Garry and deserves special attention. Units 6 - 64 of Trench 7 contain the "Sea of Bricks" and associated post-fur trade deposits.

## DESCRIPTION OF RECOVERIES

### 1988

#### Stratum B

#### Artifacts

This stratum was found in all units of Trenches 1 - 4, Trench 6, and Units 1 - 5 of Trench 7. No artifacts or faunal remains were found in Stratum B, Unit 1005/1017, Trench 7. The raw artifact and faunal recoveries from this stratum are found in Appendices B-1 and B-2.

Table 1 shows the artifacts found in Appendix B-1 sorted by Category, Sub-Category, Object Common Name and Trench. Stratum B contained 1600 artifacts, and their horizontal distribution is revealing. Few artifacts were found in Trenches 1 and 3, and the largest number was found in Trench 7. The paucity of artifacts in Trench 1 can be explained partly by the presence of only three excavation units in the trench. Further, there is clearly a significant disturbance in this unit that reduced the presence of Stratum B. Finally, the artifacts collected in the field were not identified to stratum. Working from profiles, Level 70 was the most likely to contain Stratum B artifacts, so only those have been included in Appendix B-1 and Table 3. The low number of artifacts from Trench 3 is more difficult to explain. The presence of five excavation units in the trench suggests that more artifacts should have been found, although the disturbance shown in the profiles clearly reduced the presence of Stratum B here as well. Otherwise, it may simply be that fewer artifacts were deposited in the vicinity of these two trenches in the fur trade period. The relative abundance of artifacts in Trench 7, Units 1 through 4, is contrary to expectations. The ground surface inside Fort Garry was assumed to be most abundant in

artifacts, but the Trench 7 material likely lay outside the fort walls to the west. None of the illustrations in Guinn (1980) indicate an opening in the fort's west wall, but after Upper Fort Garry was built in 1836 it is likely that there was considerable traffic between that site and the older fort. Such traffic may have produced an abundant sheet deposit of nineteenth century material.

Table 1: 1988 Artifacts sorted by Category, Sub-Category, Object Common Name and Trench.

CATEGORY	SUBCATEGORY	COMMON NAME	TRENCH							Grand Total
			1	2	3	4	6	7		
ADORNMENT	JEWELLERY	BEAD					1	1	2	
	JEWELLERY Total						1	1	2	
	TOILETRY	COMB					2		2	
		MIRROR					1		1	
TOILETRY Total						3		3		
ADORNMENT Total							4	1	5	
ARCHITECTURAL OBJECT	ACCOUTREMENT	WINDOWPANE	2	19	2	188	62	52	325	
	ACCOUTREMENT Total		2	19	2	188	62	52	325	
	HARDWARE	BOLT				1			1	
		NAIL		17	106	5	25	115	101	369
		NUT		1					1	
		PIPE		1					1	
		UNDETERMINED		2	8	2		1	1	14
		WASHER		1						1
		WIRE			2	1		3	1	7
	HARDWARE Total			22	116	8	26	119	103	394
	STRUCTURE	BRICK			1	1			9	11
		CHINKING				7	12	8	102	129
		CONCRETE				1				1
		MORTAR		4		1	6	7	20	38
		PLASTER			7	4		3	8	22
		UNDETERMINED						1		1
	STRUCTURE Total			4	8	14	18	19	139	202
	ARCHITECTURAL OBJECT Total			28	143	24	232	200	294	921
	CLOTHING	FASTENER	BUTTON		1		1		1	3
		FASTENER Total			1		1		1	3
CLOTHING Total				1		1		1	3	
CLOTHING MANUFACTURE	IMPLEMENT	PIN						3	3	
	IMPLEMENT Total							3	3	
	MATERIAL	FABRIC			1			1		2
		FELT		1		1				2
		(blank)			1					1
MATERIAL Total			1	2	1		1		5	
CLOTHING MANUFACTURE Total			1	2	1		1	3	8	
COMMUNICATION	WRITTEN	NEWSPAPER						1	1	
		PAPER				2			2	
	WRITTEN Total					2		1	3	
COMMUNICATION Total						2		1	3	
CONTAINER	COOKING?	SHERD						1	1	
	COOKING? Total							1	1	
	DINNERWARE	SHERD	2	71	3	17	30	36	159	

CONTAINER (continued)	DINNERWARE Total		2	71	3	17	30	36	159	
	STORAGE	SHERD	7	35	6	46	13	14	121	
	STORAGE Total		7	35	6	46	13	14	121	
	STORAGE?	SHERD						2	2	
	STORAGE? Total							2	2	
	UNDETERMINED	SHERD	1	1	1	2		4	9	
UNDETERMINED Total		1	1	1	2		4	9		
CONTAINER Total			10	107	10	65	43	57	292	
CONTAINER?	STORAGE?	SHERD						1	1	
	STORAGE? Total							1	1	
	UNDETERMINED	SHERD						19	19	
	UNDETERMINED Total							19	19	
CONTAINER? Total								20	20	
DETRITUS	DETRITUS	SCRAP	7	60	1	32	53	13	166	
		SLAG			1	1		1	3	
		SPALL						1	1	
	DETRITUS Total		7	60	2	33	53	15	170	
DETRITUS Total			7	60	2	33	53	15	170	
FOOD PROCESSING	UTENSIL	BIFACE						1	1	
		RETOUCHED FLAKE		1					1	
	UTENSIL Total			1				1	2	
FOOD PROCESSING Total				1				1	2	
FOOD PROCUREMENT	HUNTING	CARTRIDGE						1	1	
		SHOT						2	2	
HUNTING Total								3	3	
FOOD PROCUREMENT Total								3	3	
NATURAL OBJECT-MODIFIED	NATURAL OBJECT-MODIFIED	CHARCOAL		1	4	10		15	30	
		CLINKER	8	12	3	16	9	1	49	
	NATURAL OBJECT-MODIFIED Total		8	13	7	26	9	16	79	
NATURAL OBJECT-MODIFIED Total			8	13	7	26	9	16	79	
NATURAL OBJECT-UNMODIFIED	NATURAL OBJECT-UNMODIFIED	CALICHE						8	8	
		COAL	1			4			5	
		CONCRETION							1	1
		PEBBLE							1	1
		SPALL	1	1		6		5	13	
	UNDETERMINED				4			4		
NATURAL OBJECT-UNMODIFIED Total		2	1		14		15	32		
SAMPLE							1	1		
SAMPLE Total							1	1		
NATURAL OBJECT-UNMODIFIED Total			2	1		14		16	33	
RECREATION	SMOKING EQUIPMENT	PIPE		1		2	2	56	61	
	SMOKING EQUIPMENT Total			1		2	2	56	61	
RECREATION Total				1		2	2	56	61	
Grand Total			56	329	44	375	312	484	1600	

The Adornment category was represented by only five artifacts, two in the Jewelry sub-category and three in the Toiletry category. In the Jewelry category, one bead was found in each of Trenches 6 and 7. The former bead was a simple, clear, wound glass bead, while the former was a molded, glazed, tubular, painted polychrome artifact. The

Toiletry sub-category was represented by two molded plastic comb fragments and by a mirror fragment. The comb fragments appear by their material to be a late intrusion. The mirror fragment was made of rolled plate glass coated on one side with mercury. The glass bead and the mirror fragment were both found in a post mold in Unit 6-3 and therefore may be late intrusions. The comb fragments were found in Unit 6-2 along the west wall in level 70, the upper part of Stratum B.

The Architectural Object category was by far the most numerous, comprising well over half of all Stratum B artifacts. There was a tendency for the numbers of artifacts per trench to increase as one proceeded south and west. This finding suggests that Trenches 4, 6, and 7, and to a lesser extent Trench 2, were located near buildings. This finding is supported, in the case of the first three trenches, by their locations near Trench 5.

The Accoutrement sub-category contained only one type of object, windowpane glass. There were 325 such artifacts, and 188 of these were found in Trench 4. A building with glass windows near this location is a distinct possibility. Trenches 6 and 7 contained significant but much smaller quantities of pane glass, and minor quantities were found in the other trenches.

The Hardware sub-category contained almost 400 artifacts and consisted of six types of identifiable objects, the most numerous of which by far were nails. The distribution of nails across trenches is bimodal. Trenches 1, 3 and 4 have small quantities while Trenches 2, 6 and 7 have high quantities. Inspection of the data shows that most nails and fragments consist of heads and heads and shanks. Much smaller numbers of shanks and shanks and points were found. The latter artifacts, plus those with heads of uncertain form, are labeled as "undetermined" in the Object Type column of Table 4.

Table 2 shows that cast nails are rare and that their identification is uncertain. Hand wrought nails are very few and are slightly more common in Trenches 2 and 6 than in Trench 7. Sheet cut nails account for about three-quarters of all nails. Among these, half are of undetermined head form while the next most common head form, about one-fifth, are flat and square. Flat, round heads and block heads are both equally common at just under 10% of the total for sheet cut nails. L-head and T-head nails and brads are few and are likely of specialized function. The same observations can be made of domed and faceted nails. Flat-head nails of various forms account for 100 artifacts, which is not surprising for this common form. The vast majority of these nails were found in Trenches 2 and 6. Wire nails were few, and of these well over half exhibited a flat head. Trench 6 contained the largest number of wire nails, but most were of undetermined head form.

The vast preponderance of sheet cut nails, and the paucity of hand wrought ones, suggests a mid-to-late nineteenth century time for their deposition. The predominance of flat-head nails suggests that they were used in common construction tasks. The horizontal distribution of nails between trenches suggests that most use and/or storage of nails took place in Trenches 2, 6 and 7. This distribution will be re-considered after discussion of artifacts from Trench 5 and from the 1990 excavations.

The Structure sub-category contained over 200 artifacts distributed over five identified and one unidentified object type. The most abundant object type was chinking, and the vast majority of this was found in Trench 7. Mortar was the most abundant of the lesser-represented object types, and, again, most was found in Trench 7. Plaster was found in almost equal quantities in Trenches 2 and 7, and brick fragments were found almost exclusively in Trench 7. This fact is undoubtedly due to the deposition of bricks and

fragments during construction, operation and/or demolition of the grist/flour mill in the northern part of this trench (the Sea of Bricks).

MATERIAL/ MANUFACTUR E	HEAD FORM	TRENCH						Grand Total
		1	2	3	4	6	7	
CAST?	BLOCK?			1				1
CAST? Total				1				1
HAND WROUGHT	BRAD						1	1
	FACETED?		1					1
	FLAT; ROUND		1					1
	SQUARE		1					1
	UNDETERMINED					3		3
HAND WROUGHT Total			3			3	1	7
SHEET CUT	BLOCK	3	2				15	20
	BRAD		1					1
	CLASP		1					1
	DOMED		1					1
	DOMED; ROUND			1				1
	DOMED; SQUARE		1					1
	FACETED		1					1
	FLAT						10	10
	FLAT; CIRCULAR					13		13
	FLAT; L-HEAD					1		1
	FLAT; RECTANGULAR					7		7
	FLAT; ROUND		20		3			23
	FLAT; SQUARE		18		5	23		46
	L-HEAD		1				1	2
	L-HEAD?		2					2
	ROUND	4						4
	SQUARE	2	5					7
	T-HEAD		1		1			2
	UNDETERMINED	6	43		7	36	50	142
	SHEET CUT Total		15	97	1	16	80	76
SHEET CUT?	UNDETERMINED						4	4
SHEET CUT? Total							4	4
UNDETERMINE D	BLOCK						2	2
	FLAT; CIRCULAR					5		5
	FLAT; ROUND				1			1
	FLAT; SQUARE					5		5
	UNDETERMINED	2	2		1	12	15	32
UNDETERMINED Total		2	2		2	22	17	45
WIRE	DOMED; ROUND			1				1
	FLAT						2	2
	FLAT; CIRCULAR					1		1
	FLAT; ROUND		4	2	4			10
	FLAT; SQUARE					2		2
UNDETERMINED				3	7	1	11	
WIRE Total			4	3	7	10	3	27
Grand Total		17	106	5	25	115	101	369



GLASS (continued)		UNDETERMINED						13	13		
	BOTTLE? Total		5		1	6			15	27	
	BOWL?	BODY				2				2	
	BOWL? Total					2					2
	BOWL?CUP?	BODY		1							1
	BOWL?CUP? Total			1							1
	CUP?	BODY		1		3					4
	CUP? Total			1		3					4
	JAR?	BODY							1		1
		UNDETERMINED							3		3
	JAR? Total								4		4
	LID?	BODY	1			1					2
	LID? Total		1			1					2
	PLATE	BODY		1							1
	PLATE Total			1							1
	PLATE?	BASE		1							1
		BODY		3		16	4				23
		FINISH					1				1
	PLATE? Total			4		16	5				25
	PLATE?SAUCER?	BODY				1					1
	PLATE?SAUCER? Total					1					1
	SAUCER	BODY		1		1					2
	SAUCER Total			1		1					2
	TUMBLER?	BODY		1							1
	TUMBLER? Total			1							1
	UNDETERMINED	BASE					3				3
		BODY	1	17	1	12	3	2			36
		BODY; BASE				1					1
		FINISH				1					1
	UNDETERMINED (continued)	LIP		2							2
NECK; COLLAR						4				4	
NECK; FINISH						1				1	
RIM								1		1	
	UNDETERMINED				2			13		15	
UNDETERMINED Total		1	19	1	19	8	16			64	
GLASS Total		7	28	2	50	13	39			139	
IRON	UNDETERMINED	SCREW CAP				1				1	
	UNDETERMINED Total					1				1	
IRON Total					1					1	
RED EARTHENWARE	UNDETERMINED	UNDETERMINED					1			1	
	UNDETERMINED Total						1			1	
RED EARTHENWARE Total							1			1	
Grand Total		10	107	10	65	43	77			312	

Table 3 shows the containers sorted by material, object type, object portion and trench. Earthenware and glass comprise almost the entirety of all materials, with minor quantities of iron, tin and cork. The distribution of containers shows that the single largest number by far is found in Trench 2, followed by Trench 7 and Trench 4 respectively. Trenches 1 and 3 contain virtually no container remains.

The cork artifact consists of the liner of a bottle cap. This is clearly a recent technological item, and is likely an intrusion.

A variety of object types were made of earthenware. Trench 2 contained all bowl fragments. Cups, mugs, jugs and lids were not common and showed only a weak tendency to be found in Trenches 2 and 6. Approximately three-quarters of plates and suspected plates were found in equal numbers in Trenches 2, 6 and 7. Artifacts that were plates or saucers and those that were clearly saucers were found in small numbers but were found almost exclusively in Trench 6. The lone teacup handle was also found in Trench 6. Objects of undetermined type comprised over half of all earthenware objects. Heavy fragmentation of ceramic vessels is thought to account for this figure. The distribution of such fragments among trenches shows that almost half of them came from Trench 2 and one-quarter from Trench 7.

Galvanized tin was rare, all 9 fragments belonging to what is thought to be a lid from Trench 2.

Glass containers represented just under half of all containers. Not surprisingly, bottles and suspected bottles comprised just under half of all containers, while unidentified glass containers comprised a similar number. Heavy fragmentation of a brittle material accounts for the numbers of suspected object types and the numbers of unidentified fragments. Only small numbers of other object types, e.g. jars, tumblers, were found. Glass objects were found in greatest quantities in Trenches 2, 4 and 7. While this finding was heavily influenced by unidentified glass container fragments, the bottles showed that Trenches 2 and 4 contained the vast majority of these fragments.

One metal screw cap lid was found in Trench 4. Screw cap technology was not a feature of the fur trade period, so this artifact must be seen as an intrusion.

One white glazed red earthenware plate fragment was found in Trench 7. If this artifact is assumed to have performed a dinnerware function, it simply confirms the pattern seen above with white earthenware ceramics. If the object is a special function artifact, e.g. water pitcher, then its presence and location of recovery are more difficult to explain.

Table 4: 1988 Containers: Subcategory, Material and Object Type by Trench.

SUBCATEGORY	MATERIAL	OBJECT TYPE	TRENCH					Grand Total		
			1	2	3	4	6		7	
COOKING?	EARTHENWARE	UNDETERMINED						1	1	
	EARTHENWARE Total							1	1	
COOKING? Total								1	1	
DINNERWARE	EARTHENWARE	BOTTLE						2	2	
		BOTTLE?			1	3			9	13
		BOWL?		4			2			6
		CUP		1						1
		JAR						1		1
		JAR?						1		1
		JUG?			1					1
		LID						1		1
		MUG			1					1
		PLATE			5					5
		PLATE?			15		2	3		20
		PLATE?SAUCER?			3			6		9
		SAUCER						1		1

DINNERWARE (continued)	EARTHENWARE (continued)	TEACUP					1		1	
		UNDETERMINED	2	39	2	5	17	21	86	
	EARTHENWARE Total			2	69	3	10	30	35	149
	GLASS	BOTTLE?				3				3
		UNDETERMINED		2		4				6
	GLASS Total			2		7				9
RED EARTHENWARE		UNDETERMINED						1	1	
RED EARTHENWARE Total								1	1	
DINNERWARE Total			2	71	3	17	30	36	159	
STORAGE	CORK		BOTTLE?				1		1	
	CORK Total						1		1	
	EARTHENWARE	BOTTLE?				3				3
		LID?		1						1
		UNDETERMINED					4			4
	EARTHENWARE Total		1		3	4				8
	GALVINIZED TIN	BOWL?			1					1
		UNDETERMINED			8					8
	GALVINIZED TIN? Total			9						9
	GLASS	BOTTLE					1		4	5
		BOTTLE?		4		1	3		3	11
		BOWL?					2			2
		BOWL?CUP?			1					1
		CUP?			1		3			4
		JAR?							1	1
		LID?		1			1			2
		PLATE			1					1
		PLATE?			4		16	5		25
		PLATE?SAUCER?					1			1
		SAUCER			1		1			2
		TUMBLER?			1					1
		UNDETERMINED		1	17	1	13	8	6	46
	GLASS Total		6	26	2	41	13	14	102	
IRON		UNDETERMINED				1		1		
IRON Total					1			1		
STORAGE Total			7	35	6	46	13	14	121	
STORAGE?	GLASS		BOTTLE?				1	1		
	GLASS Total		UNDETERMINED				2	2		
STORAGE? Total						3	3			
UNDETERMINED	EARTHENWARE	BOTTLE?			1			1		
		UNDETERMINED		1			1	2		
	EARTHENWARE Total			1	1		1	3		
	GLASS	BOTTLE?		1				11	12	
		JAR?						3	3	
		UNDETERMINED					2		8	10
GLASS Total		1			2		22	25		
UNDETERMINED Total			1	1	1	2	23	28		
Grand Total			10	107	10	65	43	77	312	

Sorting containers by sub-category, material and object type (Table 4) shows that cooking containers were virtually absent. Indeed, the one cooking vessel was a precontact

ceramic fragment. Dinnerware containers comprised over half (159 of 312) of all containers. Within this sub-category, 9 were glass and 149 were earthenware. All earthenware was white with a single exception from Trench 7, as noted above. Undetermined object types numbered half of all ceramic and glass dinnerware. Plates and suspected plates comprised the largest type of ceramic dinnerware. Next most numerous were bowls and suspected bowls, and these were about as numerous as saucers and suspected saucers. Cups, mugs, jugs and other drinking wares were very few in number. As noted above, Trench 2 contained the largest single categories of these artifacts, while Trenches 6 and 7 contained almost equal lesser numbers.

Known or suspected storage containers were predominantly glass (105/124), while only 8 were ceramic. Bottles and suspected bottles dominated the glass storage vessels and comprised about half of all storage artifacts. Jars and suspected jars were far less important than bottles among the glass storage vessels. Not surprisingly, undetermined glass storage vessels were quite numerous.

The distribution of glass storage vessels shows that the largest single number was recovered from Trench 4. The next largest number came from Trench 2, and Trenches 6 and 7 contained relatively few storage vessels. It may be that food preparation and/or consumption was more common in the areas of Trenches 2, 6 and 7 while food storage was more common in the vicinity of Trench 4.

Table 5. 1988 Stratum B Ceramic Dinnerware Containers.

DECORATION TYPE	COLOUR	DECORATIVE METHOD	PATTERN	TRENCH							Grand Total
				1	2	3	4	6	7		
EMBOSSSED	WHITE	FLORAL	(blank)					2		2	
		FLORAL Total						2		2	
		SCALLOPED	(blank)		1					1	
		SCALLOPED Total			1					1	
		(blank)	(blank)		3			3		6	
		(blank) Total			3			3		6	
	WHITE Total			4			5		9		
	WHITE; BLUE	(blank)	(blank)		1				1		
		(blank) Total			1				1		
	WHITE; BLUE Total			1					1		
EMBOSSSED Total				5				5		10	
PAINTED	WHITE	PURPLE LINE	UNIDENTIFIED						1	1	
		PURPLE LINE Total							1	1	
	WHITE; GOLD	ENCIRCLING BAND	(blank)					1		1	
		ENCIRCLING BAND Total						1		1	
	WHITE; GOLD Total						1		1		
	WHITE; RED; BLUE	STRIPE		(blank)		1				1	
		STRIPE Total			1				1		
		STRIPED		(blank)		1				1	
		STRIPED Total			1				1		
	WHITE; RED; BLUE Total			2					2		
PAINTED Total				2				1	1	4	
PAINTED; STAMPED	WHITE; PURPLE; RED	FLORAL; BAND	(blank)					1		1	
		FLORAL; BAND Total						1		1	

	WHITE; PURPLE; RED Total				1		1		
PAINTED; STAMPED Total					1		1		
STAMPED	WHITE; PURPLE	FLORAL	(blank)		1		1		
		FLORAL Total			1		1		
		FLORAL; BIRD	(blank)		1		1		
		FLORAL; BIRD Total			1		1		
WHITE; PURPLE Total					2		2		
STAMPED Total					2		2		
TRANSFER PRINT	WHITE; BLUE	CIRCLES	UNIDENTIFIED			1	1		
		CIRCLES Total				1	1		
		CURLICUES	UNIDENTIFIED			1	1		
		CURLICUES Total				1	1		
		CURLICUES ALONG RIM	SWISS COTTAGE 1830-36			2	2		
		CURLICUES ALONG RIM Total				2	2		
		FLORAL	B700?	1				1	
			FRUIT AND FLOWERS?	1				1	
			(blank)	3		1	4	8	
		FLORAL Total		5		1	4	10	
		FLORAL?	SWISS COTTAGE? 1830-36			1	1		
			UNIDENTIFIED			1	1		
			(blank)	1				1	
		FLORAL? Total		1		2	3		
		HERRINGBONE	(blank)	1				1	
		HERRINGBONE Total		1				1	
		SCENIC	ITALIAN			1	1		
			(blank)	3				3	
		SCENIC Total		3		1	4		
		UNDETERMINED	UNIDENTIFIED			5	5		
		UNDETERMINED Total				5	5		
		UNIDENTIFIED	UNIDENTIFIED			1	1		
		UNIDENTIFIED Total				1	1		
		WHITE FLOWERS	(blank)			1	1		
		WHITE FLOWERS Total				1	1		
		(blank)	BROSELEY?	1				1	
		(blank)	(blank)	1	4	1		7	
		(blank) Total		1	5	1		8	
		WHITE; BLUE Total		1	15	1	1	19	37
		WHITE; GREEN	FLORAL	UNIDENTIFIED			1	1	
			FLORAL Total				1	1	
			UNDETERMINED	UNIDENTIFIED			1	1	
(blank)	(blank)				1	1			
UNDETERMINED Total				2	2				
WHITE; GREEN Total				3	3				
WHITE; GREEN; GREY	FLORAL	(blank)	1			1			
	FLORAL Total		1			1			
WHITE; GREEN; GREY Total			1			1			
WHITE; GREEN; RED	FLORAL?	(blank)	1			1			
	FLORAL? Total		1			1			
WHITE; GREEN; RED Total			1			1			

TRANSFER PRINT (continued)	WHITE; GREY	FLORAL	(blank)		1				1	
	FLORAL Total				1				1	
	WHITE; GREY Total				1				1	
	WHITE; PURPLE	(blank)	(blank)		4				4	
(blank) Total			4				4			
WHITE; PURPLE Total				4				4		
TRANSFER PRINT Total				1	22	1		1	22	47
(blank)	BLUE	(blank)	(blank)			1			1	
		(blank) Total				1			1	
	BLUE Total				1			1		
	BROWN	RIDGED	(blank)			1			1	
		RIDGED Total				1			1	
		(blank)	(blank)	4		1	1	1	6	
	(blank) Total		4		1	1	1	6		
	BROWN Total		4		1	1	1	7		
	TAN	(blank)	(blank)	3					3	
		(blank) Total		3					3	
	TAN Total		3						3	
	TAN; BLUE	(blank)	(blank)	2					2	
		(blank) Total		2					2	
	TAN; BLUE Total		2						2	
	TAN; WHITE; GREY	(blank)	(blank)	2					2	
		(blank) Total		2					2	
	TAN; WHITE; GREY Total		2						2	
	WHITE	(blank)	(blank)	1	28	2	8	19	10	68
		(blank) Total		1	28	2	8	19	10	68
	WHITE Total		1	28	2	8	19	10	68	
	WHITE; BLUE	(blank)	(blank)					1	1	
		(blank) Total						1	1	
WHITE; BLUE Total						1	1			
WHITE; RED	(blank)	(blank)	1					1		
	(blank) Total		1					1		
WHITE; RED Total		1						1		
(blank) Total				1	40	2	10	20	12	85
Grand Total				2	69	3	10	30	35	149

Table 5 was prepared as a way to examine the ceramic dinnerware containers. Ten fragments of embossed dinnerware were recovered, five from Trench 2 and five from Trench 6. Nine fragments were plain white, and one was blue and white. No identifiable patterns were noted, although two fragments from Trench 6 exhibited a floral pattern and one fragment from Trench 2 had a scalloped pattern.

Painted ceramics were even less common. One fragment with a purple line was found in Trench 7, one with a gold line was recovered from Trench 6, and two fragments with red and blue lines were found in Trench 2. These fragments belong to the two stamped fragments coloured white and purple. The latter two are parts of a plate or saucer, and the former is part of a cup. All these fragments match one that was found in Stratum A immediately above units 1 and 2 of Trench 6. The painted and stamped fragments were from the rim and body of a cup and showed a floral pattern and a simple band. The plate or saucer fragments bore the stamped floral and bird design in purple on a white background.

Transfer printed designs comprised about one-third of all ceramic dinnerware. Almost 80% of these were blue and white transfer printed artifacts. Five fur trade patterns were identified among the blue transfer printed ceramics: Swiss Cottage (Minton), Italian (Copeland/Spode), B700 (Copeland/Spode), Fruit and Flowers or late Willow (Copeland/Spode) and Broseley (Copeland/Spode) (Fig. 22). No patterns were identified in the other colours of transfer printed ceramics. Copeland/Spode introduced the Italian pattern in 1816, so its presence may result from either NWC or HBC occupancy. The same company first manufactured Broseley in 1818, so it, too, could be present as a result of either NWC

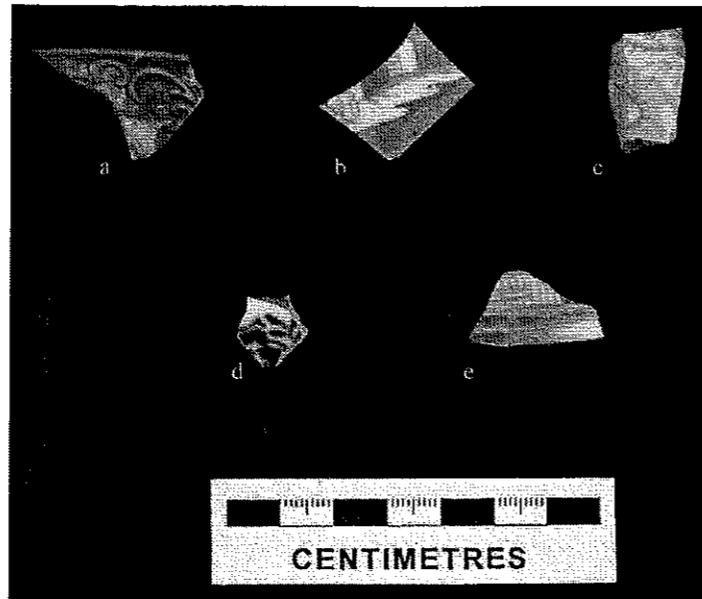


Figure 22: Transfer printed earthenware fragments: a) Swiss Cottage, b) Italian, c) B700, d) Fruit and Flowers or late Willow, e) Broseley.

or HBC activity. Minton's Swiss Cottage was first manufactured in 1822 and is likely to have been brought to the Forks by the HBC. Fruit and Flowers pattern first appeared in the Copeland/Spode inventory in 1826, after the HBC/NWC amalgamation. Copeland/Spode's B700 pattern was first made in 1838 and is undoubtedly an HBC import. These four patterns are present in Trench 5, so their presence in Stratum B indicates that artifacts in Stratum B are derived, at least in part, by fur trade activity. Since there is no evidence of removal of fur trade materials from Trench 5 subsequent to its use during that period, the presence of artifacts of that period in Stratum B occurs because of primary deposition.

By far the largest numbers of transfer printed artifacts were found in Trenches 2 and 7. Indeed, the recoveries of transfer printed ceramics outside these two loci are negligible. Food consumption near these trenches during the fur trade period is again suggested by these data.

Ceramic dinnerware fragments with no specified decorative technique numbered 85, i.e. about 57% of all ceramic dinnerware artifacts. Among these, by far the largest number consisted of plain white glazed and fired fragments. Trench 2 contained the largest single number of these, followed by Trench 6 with only two-thirds of that number and Trench 7 with about one-third. Trench 2 also contained the vast majority of ceramic dinnerware showing various colours.

In all, Trench 2 contained almost half of all ceramic dinnerware and Trench 7 one-quarter. Trench 6 contained about one fifth of all these artifacts, and the other trenches produced only a few each. Thus Trench 2 is again indicated to be a focus of food consumption activity during the fur trade and Trenches 6 and 7 are indicated as secondary foci.

Glass containers were examined for the relationship between colour and object sub-type (function). Several patterns are visible in these data (Table 6). Only 23 of 105 artifacts could be securely identified to function; the remaining 82 could only be organized by colour. Another pattern is the distribution of colours among functions. Beverage bottles, though numbering only six, exhibited clear, green and red glass. Liquor bottles were exclusively olive-coloured. This latter fact may be something of a self-fulfilling prophecy because the assumption is often made that if the colour is olive, the function is liquor bottle, and vice versa. While the assumption is often true, it may hide other functions of bottles made of olive glass. Glass storage containers of unknown sub-type(s) exhibited a wide variety of colours. The blue glass fragment from Trench 1 is suspected to be a Phillips' Milk of Magnesia" bottle fragment. This interpretation and the extent of disturbance in this trench suggest strongly that this artifact is of recent vintage.

OBJECT SUB-TYPE (FUNCTION)	COLOUR	TRENCH						Grand Total
		1	2	3	4	6	7	
BEVERAGE	CLEAR	1	1		1			3
	GREEN	1	1					2
	RED		1					1
BEVERAGE Total		2	3		1			6
LIQUOR	OLIVE		6		10			16
LIQUOR Total			6		10			16
MEDICINE?	BLUE	1						1
MEDICINE? Total		1						1
(blank)	AMBER		2	1				3
	AMETHYST				5			5
	AQUA					1		1
	BLUE-GREEN		1		1			2
	CLEAR	2	8		18	9	15	52
	GREEN	1	6		1	2	1	11
	OLIVE			1	4	1	1	7
PURPLE				1			1	
(blank) Total		3	17	2	30	13	17	82
Grand Total		6	26	2	41	13	17	105

The largest single colour was clear glass, and it may be that many of these fragments could be considered as beverage bottle or storage jar fragments. The seven olive glass fragments are also likely liquor bottle fragments. All of the olive glass fragments from Trench 4 and two from Trench 2 are listed as known or suspected case bottle fragments. Amethyst-coloured glass is rare, and this seems generally consistent with the late nineteenth century and early twentieth century technology involving manganese as an additive in glass, and it also seems consistent with the process of fill deposition associated with expanding railway activity in this area. The few amber glass fragments are suspected of being beer bottle fragments. Given the technologies available to glass makers in the nineteenth century, purple glass (and red?) may be variants of amethyst, and green (and/or aqua?) may be variants of olive glass.

The horizontal distribution of glass storage container fragments is also revealing. Trench 4 contained by far the largest single number of these artifacts, about 40%, as noted

above. Among the artifacts found in this trench, 19 were clear fragments that may be remains of beverage bottles or storage jars, and 14 were olive fragments that were likely liquor bottles. Storage, and possibly consumption, of liquids, including alcohol, in the vicinity of Trench 4 is suggested by these data.

One of the clear glass fragments was found in Trench 1 and exhibits the embossed letters "ADE" on its base. The fragment indicates that it was part of a square bottle. Another clear bottle base and body fragment was found in Trench 4, and it bears the embossed mark "WINNIPEG 60" although this number is unclear and may be "90". The artifact exhibits internal bubbles and mold seams. Both fragments are parts of beverage bottles, and both are likely to be later intrusions into the surface of Stratum B.

OBJECT	MATERIAL	TRENCH						Grand Total
		1	2	3	4	6	7	
SCRAP	ALUMINIUM?		9					9
	COPPER?						2	2
	EARTHENWARE						2	2
	GLASS		1				2	3
	IRON	4	48	1	15	53	7	128
	IRON; PAINT	1						1
	LINOLEUM	1						1
	PAINT	1						1
	PAPER; ASBESTOS		1					1
	PLASTIC?		1		1			2
UNDETERMINED				16			16	
SCRAP Total		7	60	1	32	53	13	166
SLAG	UNDETERMINED			1	1		1	3
SLAG Total				1	1		1	3
SPALL	UNDETERMINED						1	1
SPALL Total							1	1
Grand Total		7	60	2	33	53	15	170

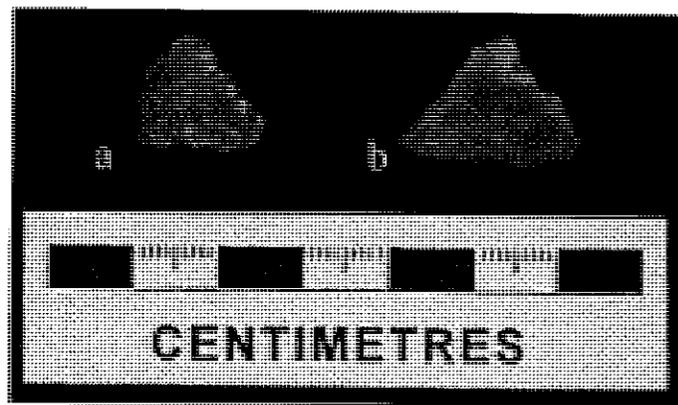


Figure 23: Lithic artifacts: a) retouched quartz flake, b) chert biface.

The Detritus category consisted of a single sub-category, Detritus, which was further subdivided under the common names Scrap, Slag and Spall. Of these types, Scrap was by far the most numerous (166/170). Most artifacts of the Scrap type were found in Trench 2, while slightly fewer were found in Trench 6. Trench 4 had a relatively moderate number of scrap artifacts, and only a few were found in other trenches. The most relevant characteristic of scrap was its raw material type, so the data was organized this way in Table 7.

The single occurrences of slag and spall in Trench 7 need simply to be noted in passing. Iron fragments dominated the scrap objects, and these were found almost exclusively in Trenches 2 and 6. Iron scrap fragments comprised the majority of the Trench 2 recoveries, but they constituted all of the Trench 6 recoveries. Several of these iron scraps are suspected sheet-cut nail fragments. Similarly, all Trench 4 recoveries were also iron scrap. The paint and linoleum in Trench 1 are clear intrusions, as is paper, asbestos and corrugated aluminum in Trench 2 and the plastic in

Trenches 2 and 3. The earthenware and glass in Trench 7 seems likely to be mis-entered data.

The Food Processing category contains only two artifacts, both precontact (Fig. 23). Both belong to the Utensil sub-category, one retouched flake (Fig. 23a) from Trench 2 and one biface (Fig. 23b) from Trench 7. Although these artifacts are assigned to the precontact period, they may have been deposited in Stratum B either before or after contact with Europeans. The biface is made of chert, and the retouched flake is made of quartz. Retouch on the flake is at least unifacial and possibly bifacial.

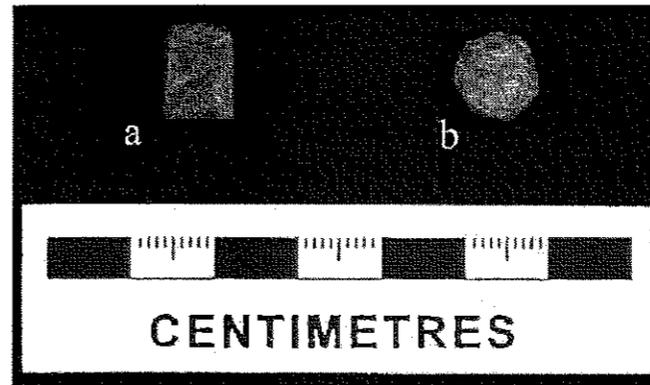


Figure 24: Food procurement artifacts: a) cartridge case, b) ball shot.

The Food Procurement category is represented by a cartridge case (Fig. 24a), a lead shot (Fig. 24b), and an iron/steel slug. All belong to the Hunting sub-category and were recovered from Trench 7. While cartridges and slugs become common in the later nineteenth century, lead shot represents an earlier technology that predominated during the fur trade. Although the number is small, the presence of all ammunition in only one trench is suggestive of an activity that was restricted to that area. The distribution also suggests that, despite the different technologies represented by the shot on one hand and the cartridge and slug on the other, some consistent activity was occurring near Trench 7.

The Natural Object Modified category and sub-category contained 79 fragments of charcoal and clinkers. Clinkers outnumbered charcoal approximately 5:3. Half the charcoal was found in Trench 7, and another third of it in Trench 4. By contrast, Trench 4 contained one third of all clinkers, Trench 2 about one quarter, and Trench 6 one fifth. The source of clinkers is difficult to identify because they could be intrusions from the railway period deposits (Stratum A) as easily as they could be the products of blacksmith activity during the fur trade. Similarly, charcoal could result from either of those same activities as well as simply from burning wood or other material in a stove, fireplace or furnace. In other words, not much useful information can be derived from this part of the data, but the more asymmetrical distribution of charcoal likely says more than the distribution of clinkers.

Unmodified Natural Object categories and sub-categories are represented by a variety of objects. Of the 32 such artifacts, 14 and 15 are found in Trenches 4 and 7 respectively. The only object that these two trenches share is spalls (six and five, respectively, of 13). All spalls are limestone except for one slate fragment. Since limestone pebbles and spalls are common in the area, nothing unusual seems to be represented by these artifacts. The pebble is also limestone, and the concretion is thought to be limestone. The coal fragments are restricted to Trenches 1 and 4, but, since they may be intrusions from the railway period, little more can be said. All the caliche artifacts were recovered from Trench 7. Caliche is defined in the Reader's Digest Great Encyclopedia as "a calcareous sediment usually found in warm, semi-arid or desert regions." Webster's New

World Dictionary defines caliche as "crusted calcium carbonate formed on certain soils in dry regions." Use of the term to describe the artifacts found here is loose and is meant to convey some mineral encrustation on or in the soil. The restriction of these artifacts to Trench 7 may say something about the observational acuity of the person excavation N1003/W1017 m, and it may be a function of activities that took place on that spot in the early to mid nineteenth century.

The Sample sub-category is represented by a single sample from Unit 1 of Trench 7 (N1001/W1017 m). It contained charcoal and clay and was taken for specialized lab analysis that has not yet been done.

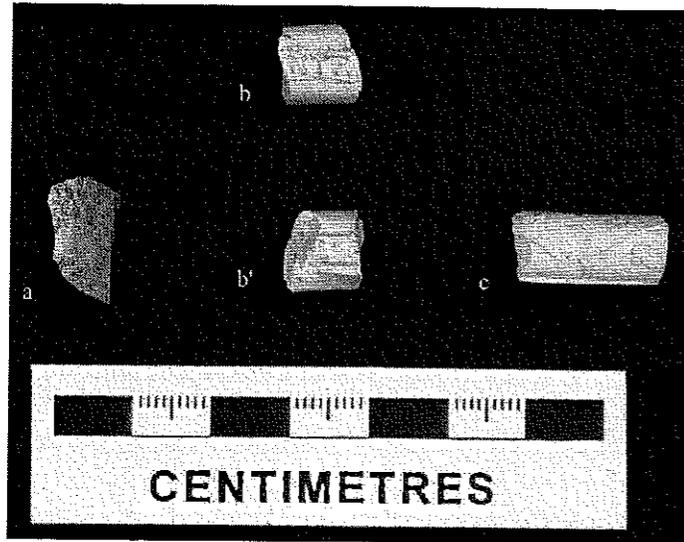


Figure 25: Clay smoking pipe fragments: a) bowl with grape motif, b, c) stem fragment "MA", "NTR", d) stem fragment with floral design.

and NTR on the other (Fig. 25b,c). These letters belong to Bannerman of Montreal. This manufacturer produced pipes after 1858. This artifact was recovered from Trench 6. The stem fragment from Trench 7 displayed a molded floral design (Fig. 25d).

Twenty-one stem fragments possessed bore diameters of  $5/64$ ". Four stem fragments had bore diameters of  $1/16$ " ( $4/64$ "), and three had  $11/128$ " ( $5.5/64$ ") bore diameters. Bore diameters were not measured for nine stem fragments, including the Bannerman artifact. Of the four bowl and stem fragments, bore diameters were obtained for three specimens, one of  $1/16$ ", one of  $5/64$ " and one of  $11/128$ ". The preponderance of  $5/64$ " bores and the small deviation in a few artifacts on either side of this mode suggest that most pipes were manufactured by the same type of technology and that most may be derived from a single source.

Clay pipes are associated with the fur trade and, because of their fragility and consequent short use lives, are unlikely to have been deposited as a result of activity associated with either the grist mill, first built in 1874, or the railway, which arrived in 1881. The overwhelming numbers of pipe fragments in Trench 7 suggests that either storage of the artifacts, or their use for smoking, commonly occurred in this vicinity.

The Recreation category contains only one sub-category, smoking equipment. All objects within this analytic unit are clay pipe fragments. The horizontal distribution is astonishing; of 61 artifacts, 56 were found in Trench 7. All bowl fragments are also found in Trench 7, but small numbers of stem fragments are found in other trenches. Two bowl fragments are decorated, one with a grape vine, leaf and fruit (Fig. 25a) and the other with oak leaves on the posterior mold seam. Both of these artifacts were recovered from Trench 7. Two decorated stem fragments were also recovered. One displayed a chain of embossed dots and the letters MA on one side

### Discussion

The Stratum B artifacts reveal several interesting spatial patterns. Trench 7 contains the greatest amount of artifacts. Within this number pipes, ammunition, pins, charcoal, mortar and chinking were proportionally higher than in all other trenches. Further, high proportions of nails, plaster and dinnerware were also found. These findings suggest that a building was nearby and that daily activities such as eating, smoking, clothing repair and firearm maintenance may have taken place in and around the building.

Trench 6 is noteworthy for the large numbers of nails and windowpane glass and the personal adornment artifacts (bead, comb, and mirror) that were found. Moderate numbers of dinnerware artifacts were found there, along with high quantities of scrap. These materials may be associated with Trench 5, discussed below.

Trench 4 contained the second largest number of artifacts. Charcoal and clinkers were relatively abundant, scrap detritus existed in moderate quantities, as did containers. Within these containers, storage vessels were almost three times as numerous as dinnerware vessels. Windowpane glass was overwhelmingly abundant in this trench. The picture of activity in this area is ambiguous. One possibility is the existence nearby of a support/storage infrastructure area such as a work area or storage building. A second possibility is that this area was an area of sheet refuse between buildings and activity areas within Fort Garry.

Trench 3, like Trench 1, is most noteworthy for its lack of material. The absence of much material from both these two trenches highlights the meaningfulness of the high quantities in the other four trenches. Trench 3 did not have anything that other trenches did not have in greater absolute or relative quantity, and it lacked windowpane glass, nails, structural artifacts, dinnerware, and detritus almost completely. Storage containers were totally absent. The notable lack of deposition in this trench is curious, but explanations of it are lacking.

Trench 2 contained similar quantities of material to Trenches 4 and 6. The largest single amounts of scrap detritus were found here, as were containers. Within this category, the pattern of dinnerware to storage was 2-3:1 as in Trenches 6 and 7, but the absolute quantities of each were two to three times as great as in Trenches 4, 6 and 7. Nails were very abundant, but windowpane glass and structural artifacts were few. The large quantities of nails, dinnerware and storage vessels suggest several interpretations. One possibility is that this trench was near a building in which food preparation and consumption occurred. Another possibility is that the trench was in or near an area of sheet refuse where nails and broken glass and ceramics were discarded.

Trench 1, like Trench 3, contained few artifacts. The greatest surprise is the low numbers of architectural objects and containers. Even detritus is almost absent. Some of this meager inventory may be attributable to the failure of the excavators to note stratum of recovery on their artifacts, but even so the level that was included in Appendix B-1 clearly was not productive of much material.

### Fauna

The master list of faunal remains is presented in Appendix B-2 and summarized in Table 8. A total of 1351 faunal remains (NISP) were recovered from Stratum B, and of these, all

but two were considered to be butchering remains. Trench 2 contained about one-third of all fauna, Trench 4 contained a marginally smaller amount, and Trench 7 contained about one-fifth. Trench 6 contained just over one-tenth of all fauna, and Trenches 1 and 3 contained almost none.

Birds and suspected birds accounted for only 44 fragments. Few birds could be identified to the Order level, so most remains occurred in the Undetermined category. Trench 6 contained by far the most bird remains, and all seven Galliformes elements were recovered there. All seven elements were identified to the species level as *Gallus domesticus*, or domestic chicken.

Bivalva (clams and mussels) were considered as Butchering Remains because they could not move from river-bottom mud to their location of recovery without assistance. While birds may have transported clams and mussels, their recovery in fur trade deposits suggests that they could also have been transported by human action in the nineteenth century. Clams predominate greatly over mussels, but altogether they are still few. No trench contains many, but Trenches 2 and 6 contain the largest individual numbers.

Mammals and suspected mammals comprise the largest single group of faunal remains. They represent 73% of all fauna and of butchering remains. Just over 40% of all mammal remains were found in Trench 4, while about 25% were found in Trench 2 and 18.6% were found in Trench 7. Trench 6 had a moderate number of remains, but Trenches 1 and 3 had very few. The Undetermined class of remains was the most numerous, highlighting the fragmentation of remains. Artiodactyls were clearly the predominant class of remains, while a few Carnivora (meat eaters) and Lagomorpha (rabbits) were represented. Unlike the overall distribution of mammal remains among trenches, which is dominated by the Undetermined class, the Artiodactyls (cloven-hoofed animals) were found most abundantly in Trenches 2 and 4, followed distantly by Trench 6. Mammal remains are discussed in further detail below.

Ostichthys (fish) remains comprise about 13% of butchering remains and total remains. By far the largest number of fish remains (ca. 77%) were found in Trench 2. Trench 6 contained another 10% of the fish remains, and the other trenches contained very small numbers. Elements and fragments that were unidentifiable to Order dominated the assemblage. The known Orders of fish were most frequently Perciformes (18 elements), followed by Cypriniformes (9 elements). The Perciformes consist of Drum (*Aplodinotus grunniens*), Walleye/Sauger (*Stizostedion spp.*) and Perch (*Perca sp.*), while the Cypriniformes consist of catfish (*Ictalurus sp.*) and suckers (*Catostomus sp.*). While the numbers of Cypriniformes is the same in Trenches 2 and 6, the numbers of Perciformes in Trench 2 comprises nearly all such elements from all trenches.

The suspected Butchering Remains consist of only 44 elements, 29 of which are unidentifiable to Class or below. The remaining 15 elements are identifiable to Class but, except for one Rodentia (rodents) element, not to Order. Little information is revealed in this portion of Table 11. Less informative still are the Natural Remains, except for the only presence of Gastropoda (snails). This element is a land snail that entered the assemblage by accident of discovery. All suspected butchering remains, and all natural remains were recorded from Trench 7. This situation may arise because of the real distribution of remains, but it may also arise because of excavator and/or analyst bias, i.e. greater caution by one analyst than another may have resulted in tentative identifications and classifications in Trench 7 compared to other trenches. Similarly, greater care or

SUBCATEGORY	CLASS	ORDER	TRENCH							Grand Total
			1	2	3	4	6	7		
BUTCHERING REMAIN	AVES	ANSERIFORMES				1	1			2
		GALLIFORMES					7			7
		UNDETERMINED		5	1	8	17	3		34
	AVES Total			5	1	9	25	3		43
	AVES?	UNDETERMINED							1	1
	AVES? Total								1	1
	BIVALVA	UNDETERMINED		3	1		1	1		6
		UNIONOIDA	1	6	1		4	2		14
		VENEROIDA					3			3
	BIVALVA Total		1	9	2		8	3		23
	MAMMALIA	ARTIODACTYLA		29	9	30	17	10		95
		CARNIVORA						9		9
		LAGOMORPHA				3		4		7
		UNDETERMINED	8	220	27	386	75	159		875
	MAMMALIA Total		8	249	36	419	92	182		986
	MAMMALIA?	UNDETERMINED				1		3		4
	MAMMALIA? Total					1		3		4
	OSTICHTHYS	ACIPENSERIFORMES				3				3
		CLUPEIFORMES					1			1
		CYPRINIFORMES		4	1		4			9
		PERCIFORMES		14		2	2			18
		UNDETERMINED	2	120		4	11	11		148
	OSTICHTHYS Total		2	138	1	9	18	11		179
UNDETERMINED	UNDETERMINED		52		1	2	14		69	
UNDETERMINED Total			52		1	2	14		69	
BUTCHERING REMAINS Total			11	453	40	439	145	217	1305	
BUTCHERING REMAINS?	AVES	UNDETERMINED						8	8	
	AVES Total							8	8	
	AVES?	UNDETERMINED						1	1	
	AVES? Total							1	1	
	MAMMALIA	RODENTIA							1	1
		UNDETERMINED							3	3
	MAMMALIA Total								4	4
	OSTICHTHYS	UNDETERMINED						1	1	
	OSTICHTHYS Total								1	1
	OSTICHTHYS?	UNDETERMINED							1	1
OSTICHTHYS? Total								1	1	
UNDETERMINED	UNDETERMINED							29	29	
UNDETERMINED Total								29	29	
BUTCHERING REMAINS? Total								44	44	
NATURAL	GASTROPODA	UNDETERMINED						1	1	
	GASTROPODA Total							1	1	
	MAMMALIA	RODENTIA						1	1	
	MAMMALIA Total								1	1
NATURAL Total								2	2	
Grand Total			11	453	40	439	145	263	1351	

different relevance criteria may have caused land snail remains to have been collected in Trench 7 compared to other trenches.

Table 9 continues the discussion of Mammals and shows their distribution among trenches sorted by Order, Family and Genus. Undetermined fragments dominate the assemblage, suggesting a high degree of fragmentation of mammal bones. Of the remains that could be identified to Order, Artiodactyls clearly predominate. Within this Order, the Bovidae family is most numerous with small numbers of Cervidae (deer and elk) and Suidae (pigs). Domestic cattle (*Bos sp.*) and bison (*bison bison*) make up the vast majority of the identified Bovid remains, although firmly identified cattle and bison are few in number due both to their many skeletal similarities and to the extent of fragmentation that these remains experienced. Sheep and/or goat make up only a small proportion by comparison. Trenches 2 and 4 contain the largest amounts of Bovidae remains and the only Suidae remains. The only Cervid element was recovered in Trench 2. Trench 6

ORDER	FAMILY	GENUS	TRENCH							Grand Total
			1	2	3	4	6	7		
ARTIODACTYLA	BOVIDAE	BISON					2	1	3	
		BISON/BOS		18	7	12	4	7	48	
		BOS					3	1	4	
		BOS?				2			2	
		OVIS				2			2	
		OVIS/CAPRA		3			1		4	
		UNDETERMINED		3		8	5		16	
	BOVIDAE Total			24	7	24	15	9	79	
	BOVIDAE?	UNDETERMINED				2			2	
	BOVIDAE? Total					2			2	
	CERVIDAE	ODOCOILEUS?		1					1	
	CERVIDAE Total			1					1	
	SUIDAE	SUS						1	1	
		SUS?		1		2			3	
	SUIDAE Total			1		2		1	4	
	UNDETERMINED	UNDETERMINED		3	2	2	2		9	
	UNDETERMINED Total			3	2	2	2		9	
ARTIODACTYLA Total			29	9	30	17	10	95		
CARNIVORA	CANIDAE	VULPES					9	9		
	CANIDAE Total						9	9		
CARNIVORA Total							9	9		
LAGOMORPHA	LEPORIDAE	LEPUS				3	4	7		
	LEPORIDAE Total					3	4	7		
LAGOMORPHA Total						3	4	7		
RODENTIA	CASTORIDAE	CASTOR					1	1		
	CASTORIDAE Total						1	1		
	UNDETERMINED	UNDETERMINED					1	1		
	UNDETERMINED Total						1	1		
RODENTIA Total							2	2		
UNDETERMINED	UNDETERMINED	UNDETERMINED	8	220	27	387	75	165	882	
	UNDETERMINED Total		8	220	27	387	75	165	882	
UNDETERMINED Total			8	220	27	387	75	165	882	
Grand Total			8	249	36	420	92	190	995	

contained the next largest amount of Bovidae (cattle, bison) remains. Relatively few to no remains were recovered elsewhere. The same pattern, not surprisingly, holds for Artiodactyls in general

The only carnivore remains are those of a suspected red fox (*Vulpes vulpes*) found in Trench 7, along with the single element from a beaver. The few rabbit remains present were found only in Trenches 4 and 7. They are identified as belonging to *Lepus americanus*, the snowshoe hare. Two rodent elements were found in Trench 7. One of these was from a beaver and the other one was unidentified and belonged to the Natural Remains sub-category.

Further information was sought on the presence of elements by genus (Table 10) and butchering marks on elements for identified genera (Table 11).

GENUS	ELEMENT	TRENCH							Grand Total
		1	2	3	4	6	7		
BISON	PHALANX						1		1
	RIB						1		1
	VERTEBRA							1	1
BISON Total							2	1	3
BISON/BOS	CARPAL				2				2
	CRANIAL							1	1
	FRONTAL		1						1
	HUMERUS		1					3	4
	INNOMINATE		1		2				3
	INNOMINATE?		1						1
	LONG BONE			2					2
	MANDIBLE			1					1
	PHALANX		2		1				3
	PREMOLAR						1		1
	RIB		4	3	5	2			14
	SCAPULA							2	2
	ULNA						1		1
	UNIDENTIFIABLE		2	1					3
	VERTEBRA		6			2		1	9
BISON/BOS Total			18	7	12	4	7	48	
BOS	CARPAL					1		1	
	TARSAL					1		1	
	VERTEBRA					1	1	2	
BOS Total						3	1	4	
BOS?	HUMERUS				2			2	
BOS? Total					2			2	
CASTOR	INCISOR						1	1	
CASTOR Total							1	1	
LEPUS	CRANIAL						2	2	
	RADIUS				3			3	
	TIBIA						1	1	
	TIBIA; FIBULA						1	1	
LEPUS Total					3		4	7	
ODOCOILEUS?	INNOMINATE		1					1	
ODOCOILEUS? Total			1					1	

OVIS	METATARSAL				2			2
OVIS Total					2			2
OVIS/CAPRA	PHALANX		1					1
	RIB		1			1		2
	SCAPULA		1					1
OVIS/CAPRA Total		3				1		4
SUS	SKULL;TEETH						1	1
SUS Total							1	1
SUS?	VERTEBRA		1		2			3
SUS? Total			1		2			3
UNDETERMINED	CALCANEUS				1			1
	CARPAL				1	1		2
	CARPAL/TARSAL?				1	1		2
	CRANIAL		2		1	3	2	8
	CRANIAL?						2	2
	FLAT BONE		3					3
	HUMERUS					1		1
	HUMERUS?			1				1
	HYOID		1					1
	INNOMINATE				1		3	4
	LONG BONE	1	31	7	27	10	7	83
	LONG BONE?			1				1
	MANDIBLE		1		1			2
	MAXILLA?				1			1
	OCCIPITAL		1					1
	OSSIFIED CARTILAGE?						1	1
	PHALANX				1	2		3
	RIB		11	4	31	5	2	53
	RIB?			1			2	3
	SCAPULA		1			3		4
SKULL		1					1	
TOOTH		3		1	2		6	
UNIDENTIFIABLE	7	163	14	324	50	146	704	
VERTEBRA		8	1	8	3	2	22	
UNDETERMINED Total		8	226	29	399	82	166	910
VULPES	PHALANX						9	9
VULPES Total							9	9
Grand Total		8	249	36	420	92	190	995

Table 10 shows that there is considerable variation in the horizontal distribution of mammal remains. Trench 4 contains by far the greatest proportion of these remains. Trenches 2 and 7 follow with moderate numbers of remains, and Trench 1 contains virtually no mammal remains. Elements of Undetermined genus dominate the assemblage. These elements are, by and large, highly fragmented bones that do not display sufficient numbers of diagnostic features to allow them to be assigned reliably to a particular genus. Of the 85 elements identified to genus, 57 were known or suspected to be *Bos* or *Bison*. Of the remaining 28 elements, nine were fox, seven were rabbit, and the remainder consisted of sheep/goat, pig, beaver and deer.

*Bos* and *Bison* remains were most abundant in Trench 2 (18 elements), followed closely by Trench 4 (14 elements). Trenches 6 and 7 each contained nine elements. There

are few elements that are clearly *Bison* (3). One rib and one phalanx were found in Trench 6 and one vertebra was found in Trench 7. Elements that are known or suspected to be *Bos* are also few in number (6), and the distribution is similar to that for *Bison*, i.e. Trenches 6 and 7, plus Trench 4. The two humerus fragments of the suspected *Bos* in Trench 4 refit, so one element is actually represented. Fragments that were either *Bison* or *Bos* numbered 48, of which ribs were by far the most common (14). Vertebrae were next most common (9), followed by humerus fragments and known or suspected innominate fragments (4 each). Phalanges and unidentifiable fragments numbered three each, and the remaining elements were represented by only one or two fragments each. The picture that seems to appear is one of non-exclusive preference for, or greater fragmentation of, the axial, post-cranial skeleton. Interestingly, ribs were found almost equally in Trenches 2, 3, 4 and 6, but not in Trenches 1 and 7. Eight of nine vertebra fragments were found in Trenches 2 and 4, as were the four known and suspected innominate fragments.

One beaver (*Castor canadensis*) incisor was recovered from Trench 7. Aboriginally, these elements were used for wood carving, and this may have been the function of this element. Nevertheless, the fur trade sought beaver pelts, so this may simply be a by-product of trapping beaver and trading their skins. Of the seven *Lepus* element fragments, five represent lower limbs, and two are cranial. *Lepus* elements were found only in Trenches 4 and 7. Only one suspected *Odocoileus* (deer) element was recovered, an innominate fragment. Like the *Bison* and *Bos* elements, it represents the axial post-cranial skeleton. Similarly, the element fragments from known and suspected sheep/goat and pig reveal use of the whole skeleton, but there is a preference for axial portions of those animals.

Unidentifiable fragments dominated the elements of Undetermined genus. Among the identified elements, fragmented longbones are most numerous, followed by rib fragments. Vertebra fragments are next most common, and all other elements are represented by less than 10 fragments. The picture here is not quite the same as that for *Bos* and/or *Bison*. The axial skeleton is still heavily represented, but longbone fragments of the fore or hind limb are numerically superior. One assumption that could reasonably be made of the Undetermined fragments is that they probably belong to the other genera that are known or suspected in similar proportions to those seen in the remainder of Table 13. The fact that the longbones cannot be assigned reliably to a genus indicates the high degree of their fragmentation. A most tempting interpretation of this situation is the extraction of marrow and/or bone grease from these elements. Such a practice would be consistent with pemmican production, and it would also be consistent with use of marrow bones for extra flavour and nutrition in British cookery.

The horizontal distribution of Unidentifiable remains is unlike that of the *Bison* and *Bos* remains. Whereas the latter were found in greatest quantity in Trench 2, then Trench 4, the former were found in huge quantity in Trench 4, followed distantly by Trench 2. This reversal is the result of the much higher number of unidentifiable fragments in Trench 4 compared to Trench 2 in the Undetermined genus. Simple calculation reveals that in Trench 2 there are 63 identifiable elements, and in Trench 4 there are 75, i.e. almost similar numbers, as in the *Bos* and/or *Bison* situation. Thus an important feature of the mammal element representation seems to be the extreme degree of fragmentation of mammal bone in Trench 4. This situation may reflect activities that were occurring in that area of the site but that were not followed to the same extent elsewhere.

Finally, fox remains (9) were found only in Trench 7. All these remains were phalanges, which suggests the skinning of a fox carcass for its pelt.

GENUS	MARKS	SKELETAL ELEMENT	TRENCH					Grand Total
			2	3	4	6	7	
BISON	CHOPPED	PHALANX				1		1
	CHOPPED Total					1		1
	CHOPPED; CUT	RIB				1		1
		VERTEBRA					1	1
CHOPPED; CUT Total					1	1	2	
BISON Total								3
BISON/BOS	CHOPPED	CARPAL			1			1
		PHALANX	1					1
		UNIDENTIFIABLE	1					1
		VERTEBRA	3		1			4
	CHOPPED Total		5		2			7
	CHOPPED; CUT	CARPAL			1			1
		ULNA				1		1
		UNIDENTIFIABLE		1				1
	CHOPPED; CUT Total			1	1	1		3
	CHOPPED; SAWN	HUMERUS	1					1
		RIB	1					1
	CHOPPED; SAWN Total		2					2
	CUT	FRONTAL	1					1
		PHALANX			1			1
		RIB		2	1	1		4
	CUT Total		1	2	2	1		6
	CUT; SAWN	SCAPULA					1	1
	CUT; SAWN Total						1	1
	SAWN	INNOMINATE	1					1
		INNOMINATE?	1					1
RIB		3					3	
VERTEBRA		2					2	
SAWN Total		7					7	
SPIRAL FRACTURE	HUMERUS					1	1	
SPIRAL FRACTURE Total						1	1	
BISON/BOS Total								27
BOS	CHOPPED	VERTEBRA				1	1	2
	CHOPPED Total					1	1	2
BOS Total								2
LEPUS	CUT	TIBIA; FIBULA					1	1
	CUT Total						1	1
LEPUS Total								1
ODOCOILEUS?	CHOPPED; CUT	INNOMINATE	1					1
	CHOPPED; CUT Total		1					1
ODOCOILEUS? Total								1

OVIS/CAPRA	CUT	RIB				1		1
	CUT Total					1		1
	SAWN	SCAPULA	1					1
	SAWN Total		1					1
OVIS/CAPRA Total								2
SUS?	CUT	VERTEBRA	1					1
	CUT Total		1					1
SUS? Total								1
UNDETERMINED	CHOPPED	CALCANEUS			1			1
		CRANIAL					1	1
		FLAT BONE	1					1
		LONG BONE			4	1		5
		RIB	1			1		2
		SCAPULA				1		1
		UNIDENTIFIABLE	1		6	1	1	9
	VERTEBRA	1				1	2	
	CHOPPED Total		4		11	4	3	22
	CHOPPED; CUT	CARPAL			1			1
UNIDENTIFIABLE		1					1	
CHOPPED; CUT Total		1		1			2	
CUT	CARPAL?TARSAL?					1	1	
	CRANIAL	1					1	
	FLAT BONE	1					1	
	HYOID	1					1	
	LONG BONE	4			1		5	
	PHALANX					1	1	
	RIB	1		2			3	
UNIDENTIFIABLE	3		8		4	15		
CUT Total		11		10	3	4	28	
CUT; SAWN	CRANIAL					1	1	
	SCAPULA					1	1	
CUT; SAWN Total						2	2	
CUT?	UNIDENTIFIABLE			1			1	
CUT? Total				1			1	
SAWN	LONG BONE			1			1	
	SCAPULA	1					1	
	SKULL	1					1	
	UNIDENTIFIABLE	2					2	
VERTEBRA	1					1		
SAWN Total		5		1			6	
SPIRAL FRACTURE	LONG BONE					2	2	
	UNIDENTIFIABLE					1	1	
SPIRAL FRACTURE Total						3	3	
SPIRAL FRACTURE?	LONG BONE					2	2	
SPIRAL FRACTURE? Total						2	2	
UNDETERMINED Total		21		24	9	12	66	
Grand Total		39	3	29	15	17	103	

Table 11, shows the kinds of butchering marks that were observed on mammal bones. The greatest number of butchered bones was found in Trench 2 (39), followed by Trench 4 (29). Trenches 6 and 7 contained moderate numbers of butchered bones (15 and 17, respectively). Trench 3 contained virtually no butchered bone, and Trench 1 contained none at all. Butchered bones of unknown genus and element constituted two-thirds of all butchered bone, as noted above. Nevertheless, the proportion of bone that was identifiable to genus and element was greatest in Trench 2.

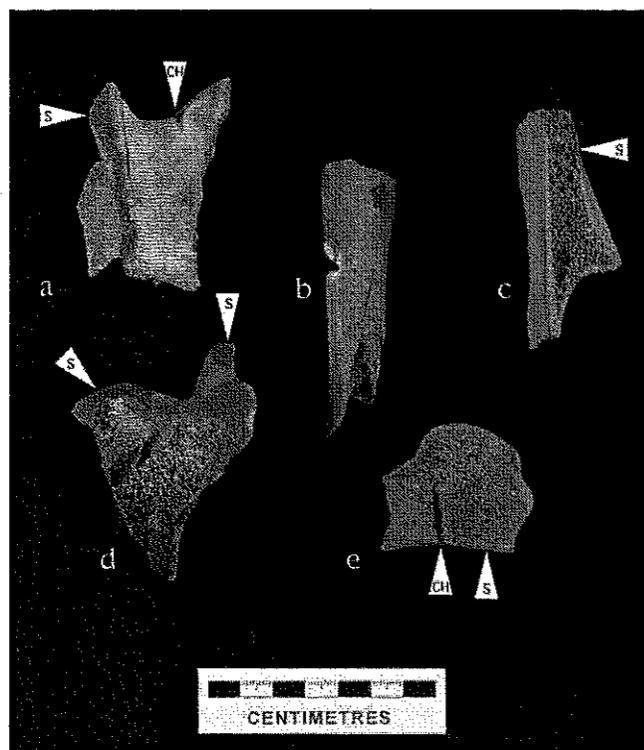


Figure 26: Butchered *Bison* and *Bos* bone: a) chopped vertebra, b) chopped rib, c) sawn scapula, d) sawn vertebra, e) split, chopped and sawn distal metapodial.

Trench 4, one ulna from Trench 6 and one unidentifiable element from Trench 3. One rib fragment and one humerus fragment, both from Trench 2, exhibited both chopping and sawing marks. Cut marks alone were observed on six elements, one frontal from Trench 2, one phalange from Trench 4, and four ribs from Trenches 2, 3, 4 and 6. Only one element, a scapula fragment from Trench 7 showed both cut and saw marks. Seven element fragments exhibited only saw marks, and all of these came from Trench 2. These marks were found almost equally on innominate, rib and vertebra fragments. Finally, one humerus fragment from Trench 7 displayed a spiral fracture. Sawing, cutting and chopping appear in similar frequencies, and combinations of these appear in lower frequencies. Elements that show any evidence of chopping, either alone or in combination with other marks, number 12; those that show cutting, alone or in combination number 7; those that show any evidence of sawing number 10. By a slight margin, then, chopping

*Bison* elements were chopped and cut (Fig. 26a). The meager evidence suggests that distal limbs were chopped off with an axe and that the carcass was subsequently divided into major sections with an axe as well. Cut marks made by knives were probably introduced during finer subdivisions of these sections, preparation and consumption. The evidence from known *Bos* fragments is compatible with that of *Bison*. An axe was used to create major sections of a carcass.

Elements and fragments that could be either *Bison* or *Bos* showed a greater range of butchering marks (Fig. 26), although this situation may simply be a function of sample size. Chopping alone was observed on seven elements, five from Trench 2 and two from Trench 4. Four of these elements were vertebra fragments, two were podial elements and one was unidentifiable. Elements that displayed both chopping and cutting numbered three, one carpal from

was the dominant form of butchering, followed closely by sawing. Cutting is less frequent than either of the other two butchering methods. No clear pattern emerges from an inspection of element by butchering method.

*Lepus* was represented only in Trench 7 by one lower hind limb fragment that was cut. A suspected *Odocoileus* innominate was found in Trench 2, and this was chopped and cut. One *Ovis/Capra* rib showed cut marks, and one scapula fragment showed saw marks, while one suspected pig vertebra exhibited a cut mark.

Element fragments of Undetermined genus displayed cut marks most frequently (28), followed closely by chop marks (22). Sawn elements numbered only 6. Among the chopped elements, unidentified ones were most numerous, followed by longbones, and among the cut bones the same pattern prevails. Chopped bones are found most frequently by far in Trench 4 while cut bones are found in similar numbers in Trenches 2 and 4. Although the sample size is small, this situation may suggest that primary disarticulation may have occurred more frequently near Trench 4 while secondary processing may have taken place near both areas.

#### Discussion

The spatial distribution of faunal elements, like the artifacts, reveals some interesting spatial patterning. Trench 1 contained few faunal remains. All were classified as butchering remains, and most of these were mammals. None of the mammal remains showed any butchering marks. In all, the area around Trench 1 did not seem to have been used much for activities that involved fauna.

Trench 2 contained the second largest amount of faunal remains. The largest amount of fish bone is found here, as well as the second largest amount of mammal bone. The identifiable fish consist of Perciformes (Drum, Walleye/Sauger and Perch) and the identifiable mammals consist of Artiodactyls, mainly *Bos* and *Bison*. The *Bos* and *Bison* remains are represented primarily by rib and vertebra fragments, although limb bones are also present. The greatest number of butchered bones was found in this trench, including the preponderance of bones that were chopped and/or sawn. The quantity of bone that was unidentifiable to genus or element was among the highest in this trench, but as a proportion of all such bone and of all bone, it was smaller, i.e. less heavily fragmented, than bone in Trench 4.

Trench 3 contained little bone, higher in frequency only than Trench 1. Almost all this bone was mammalian, although only nine elements could be identified to the Order level, the remainder being unidentifiable. Within the nine Artiodactyl remains, seven were Bovidae and two were undetermined. All Bovidae element fragments were *Bison* or *Bos*, and they consisted of several longbone fragments and several rib fragments, plus a mandible fragment. Two of the rib fragments were chopped and cut.

Trench 4 contained the largest amount by far of faunal remains. All of these were classified as butchering remains, and among these, mammals were the predominant Class. High frequencies of unidentified mammals inflated the frequency for mammals, but Artiodactyls were as numerous in this trench as in Trench 2. Also like Trench 2, there were also moderate numbers of birds found in Trench 4. Fish, by contrast, were quite infrequent. *Bison* and *Bos* were about as frequent in Trench 4 as in Trench 2, and both trenches contained small amounts of *Sus* and *Ovis/Capra* (sheep/goat). About half of the

few *Lepus* remains were found in Trench 4, the others being found in Trench 7. Large amounts of heavily fragmented mammal bone characterize Trench 4, and this suggests the possibility of nearby carcass butchering and/or processing. Most of the butchered bone showed evidence of having been either chopped and/or cut. Sawn bone was practically non-existent, and this may suggest an earlier nineteenth century date than the material in Trench 2.

Trench 6 contained only a moderate amount of faunal remains. The greatest number of bird remains was recovered in this trench, and it contained as many bivalve remains as Trench 2. The second highest frequency of fish remains were found in Trench 6, although they were far fewer than in Trench 2. Nevertheless, mammals dominate the faunal assemblage from this trench. While a few of the mammalian remains could be identified to *Bos/Bison* or *Ovis/Capra*, the vast majority were unidentifiable to either genus or element. Of those identifiable to element among the unidentified genus remains, the largest number by far was longbone fragments. Although this conforms to the pattern for most trenches, the number of bones involved is quite modest. Of the 15 bone fragments from this trench that showed butchering marks, only two of these showed sawing marks; the remainder were either cut and/or chopped.

Trench 7 contained the largest number of suspected butchering remains and natural remains. As noted above, this peculiar situation may be an artifact of the excavator(s) and analyst(s). Among the butchering remains, Trench 7 ranked third after Trenches 4 and 2. The remains were composed primarily of mammal bones and fragments. Few birds, bivalves, fish or undetermined remains were recovered. The mammal remains that were unidentifiable to genus and element constituted the bulk of all mammal remains and their frequency ranked third, a mirror for all butchering remains. A very high degree of fragmentation was evident in the mammal remains from Trench 7; a higher proportion, in fact, than in either Trench 2 or 4. About half of the few *Lepus* remains, some of the few *Sus* remains, and all of the *Vulpes* (phalanges) and *Castor* (incisor) remains were found in Trench 7. Interestingly, most of the other skeletal elements in Trench 7, regardless of genus, derive from the axial skeleton. Sawn bone occurs only once in Trench 7; all other remains are chopped and/or cut, and all the spiral-fractured bone is found here as well.

#### Summary

Trench 1 was largely devoid of both artifacts and fauna. This may result from several causes. The excavators failed to record the stratum of their recoveries, so the decision here to use only Level 70 materials may have inordinately reduced the sample size. On the other hand, including levels 69 and 71 would have certainly introduced materials from Stratum A and any that were buried in the sand under Stratum B. Conservatism in choosing the materials for analysis was considered to be the most preferable option. Another reason for the paucity of artifacts and fauna could be disturbance in the area. A cement foundation ran through the trench, and the original Stratum B may have been severely disturbed, or even removed. Yet another alternative explanation may be that there simply was not much nineteenth century deposition in the Trench 1 area.

Trench 2 contained large amounts of ceramic dinnerware, some storage containers and many nails. It also contained an abundance of fish remains and mammal remains. The mammal remains were often sawn, and mammal bones were relatively highly fragmented.

The relative abundance of sawn bone in this trench suggests the possibility of a later nineteenth century date than some other trenches. The relative abundance of fish in this trench, together with the breadth of mammalian remains and the preponderance of dinnerware and nails suggests that food consumption of moderately well regarded fur trade employees may have occurred in a nearby building. The abundance of heavily fragmented mammal long bones and unidentified bones also suggests that mammal carcasses may also have been processed nearby.

Trench 3 contained very few artifacts or faunal remains. The meager deposition in this area suggests either that it has been disturbed, with the result that most cultural remains have been removed, or that little deposition occurred here. If the latter is true, the absence of nineteenth century remains may itself be revealing.

Trench 4 contained the second largest number of artifacts and the largest amount of faunal remains. The abundance of windowpane glass, the dominance of storage containers over dinnerware, the diversity of faunal remains, especially mammals, and the high degree of fragmentation of unidentifiable mammal bone, esp. long bones and ribs, suggest that food processing and storage and infrastructure maintenance were activities likely to have occurred near this area.

Trench 6 contained noteworthy quantities of windowpane glass, nails, most of the personal adornment items, moderate amounts of faunal remains, including the greatest abundance of birds, and the second greatest abundance of fish, suggest that a residential building may have been nearby. Fortunately, it is known from the evidence from Trench 5, discussed below, that such a building did exist. If the material in Trench 6 is sheet refuse associated with the building that stood above Trench 5, then these data may serve as a model of nineteenth century fur trade sheet refuse.

Trench 7 was thought, on the basis of artifact recoveries, possibly to have been associated with a residential or other building. The faunal fragmentation, together with the preponderance of dinnerware over storage vessels, suggests that meals may have been eaten in this area. The preponderance of chop marks, cut marks and spiral fractures of bones suggests that the time of these activities was the early to mid-nineteenth century. The range of fauna found here is relatively great, like Trench 2, although fish and birds are much fewer here. The beaver incisor and the fox phalanges both seem to be parts of the fur trade. The incisor derives from the main animal of the fur trade and it could also be used as a wood-carving tool. The fox phalanges suggest the presence of a fox pelt on which the feet had been left or from which they had been discarded.

#### Trench 5

#### Artifacts

Table 12 presents the artifacts according to Category, Sub-Category and Object Common Name by Unit.

CATEGORY	SUBCATEGORY	OBJECT COMMON NAME	TRENCH					Grand Total
			5	5-1	5-2	5-3	5-5	
ADORNMENT	JEWELLERY	BEAD			4	2	1	7
	JEWELLERY Total				4	2	1	7

ADORNMENT (continued)	TOILETRY	HAIRBRUSH				1		1	
	TOILETRY Total					1		1	
ADORNMENT Total				4	3	1		8	
ARCHITECTURAL OBJECT	ACCOUTREMENT	LAMP?					1	1	
		WINDOWPANE	5	2048	916	129	3098		
	ACCOUTREMENT Total		5	2048	916	130	3099		
	HARDWARE	EYELET			1				1
		HINGE			1				1
		NAIL	25	191	119	72	407		
		NAIL?				2			2
		PIN?			1				1
		RING			2		1		3
		RIVET			1	2			3
		UNDETERMINED			6	2			8
		WIRE			2	4	2		8
	HARDWARE Total		25	205	129	75	434		
	STRUCTURE	BOARD?; LOG?			5				5
		BRICK	13	353	397	233	996		
		CHINKING	4	198	143	89	434		
		CHINKING?				39	39		
		CONCRETE			1	4			5
		MORTAR	31	796	866	470	2163		
		MORTAR; PLASTER			127	433	128	688	
		MORTAR?			10				10
		PLASTER	84	94	49	49	276		
		PLASTER?			5	13			18
		PUTTY					2		2
		SAMPLE			1				1
		STONE			2				2
	STRUCTURE Total		132	1592	1905	1010	4639		
	ARCHITECTURAL OBJECT Total			162	3845	2950	1215	8172	
	CLOTHING	FASTENER	BUCKLE				2		2
			BUTTON			12	5	6	23
			HOOK					2	2
	FASTENER Total		12	7	8		27		
	CLOTHING Total			12	7	8		27	
CLOTHING MANUFACTURE	IMPLEMENT	PIN			7	3	7	17	
	IMPLEMENT Total				7	3	7	17	
	MATERIAL	FABRIC	2		2			4	
MATERIAL Total		2		2			4		
CLOTHING MANUFACTURE Total			2	7	5	7	21		
COMMERCE	(blank)	BALE SEAL			1			1	
	(blank) Total				1			1	
COMMERCE Total				1			1		
COMMUNICATION	WRITTEN	PAPER				7		7	
		PENCIL				1		1	
WRITTEN Total						8		8	
COMMUNICATION Total					8		8		

CONTAINER	COOKING	SHERD					1	1
	COOKING Total						1	1
	DINNERWARE	SHERD		18	67	54	23	162
		SHERD?					1	1
	DINNERWARE Total			18	67	55	23	163
	DINNERWARE?	SHERD			1			1
	DINNERWARE? Total				1			1
	STORAGE	FRAGMENT			4		10	14
		SHERD		17	30	48	9	104
	STORAGE Total			17	34	48	19	118
	STORAGE?	SHERD		1	4	1	4	10
	STORAGE? Total			1	4	1	4	10
	TABLEWARE?	SHERD			2			2
	TABLEWARE? Total				2			2
	UNDETERMINED	SHERD				2	3	5
	UNDETERMINED Total					2	3	5
	CONTAINER Total			36	108	106	50	300
CONTAINER?	STORAGE?	SHERD			1		1	
	STORAGE? Total				1		1	
	UNDETERMINED	SHERD			1		1	
	UNDETERMINED Total				1		1	
CONTAINER? Total					2		2	
DETRITUS	DETRITUS	FLAKE		1		1	2	
		SCRAP	2	52	91	30	175	
		SPALL			1		1	
	DETRITUS Total		3	53	92	30	178	
DETRITUS Total			3	53	92	30	178	
FLORA	FOOD	NUT				1	1	
		SEED				6	6	
	FOOD Total					7	7	
	NATURAL	BARK				30		30
		WOOD		35	8	10	53	
	NATURAL Total			35	38	10	83	
UNDETERMINED	SEED				1	1		
UNDETERMINED Total					1	1		
FLORA Total				35	39	17	91	
FOOD PROCESSING	UTENSIL	SPOON			2		2	
	UTENSIL Total				2		2	
FOOD PROCESSING Total					2		2	
FOOD PROCUREMENT	AGRICULTURE	HARROW TOOTH				1	1	
	AGRICULTURE Total					1	1	
	FISHING	FISH HOOK				1	1	
	FISHING Total					1	1	
HUNTING	SHOT		2			2		
HUNTING Total			2			2		
FOOD PROCUREMENT Total				2	2		4	
HOUSEWARES	PERSONAL	UMBRELLA			1		1	
	PERSONAL Total				1		1	
HOUSEWARES Total					1		1	

NATURAL OBJECT-MODIFIED	NATURAL OBJECT-MODIFIED	CHARCOAL		12	24	80	9	125
		CLINKER				16	2	18
		FIELDSTONE; MORTAR				1		1
		PLATE/FRAGMENT					3	3
		SLAG			1			1
	NATURAL OBJECT-MODIFIED Total			12	25	97	14	148
NATURAL OBJECT-MODIFIED Total	SAMPLE	SAMPLE	1			2	3	6
	SAMPLE Total		1			2	3	6
NATURAL OBJECT-MODIFIED Total			1	12	25	99	17	154
NATURAL OBJECT-UNMODIFIED	NATURAL OBJECT-UNMODIFIED	CALICHE			1	1	4	6
		CLAY				1		1
		COAL			3	1		4
		PEBBLE			2			2
		SPALL		1	2	2	4	9
		TWIG?			3			3
	NATURAL OBJECT-UNMODIFIED Total			1	11	5	8	25
NATURAL OBJECT-UNMODIFIED Total	SAMPLE	SAMPLE	31		2	3		36
	SAMPLE Total		31		2	3		36
NATURAL OBJECT-UNMODIFIED Total			31	1	13	8	8	61
RECREATION	SMOKING EQUIPMENT	PIPE		3	27	55	39	124
	SMOKING EQUIPMENT Total			3	27	55	39	124
	TOY	PITCHER					1	1
	TOY Total						1	1
RECREATION Total				3	27	55	40	125
TRANSPORTATION	DRAUGHT	CURRY COMB				2		2
		HARNESS				6		6
		HORSESHOE NAIL			1			1
		NAIL					1	1
TRANSPORTATION Total					1	8	1	10
UNDETERMINED	UNDETERMINED	UNDETERMINED				1		1
	UNDETERMINED Total					1		1
UNDETERMINED Total						1		1
Grand Total			32	219	4138	3383	1394	9166

Trench 5 contained 9166 artifacts and fragments. Artifacts not assigned to unit numbered only 32. Not surprisingly, Unit 1, which was shallowest, produced the fewest artifacts of the four excavated units. Unit 2 contained 45% of all artifacts, Unit 3 contained 37%, and Unit 5, which was not fully excavated, contained 15%. The largest single category of remains was Architectural Object, accounting for 8172 artifacts (89% of all artifacts). Within the remaining 11%, Containers and suspected Containers numbered 302, and this number represented 3% of all remains. All other Categories existed in small absolute and relative frequencies. Despite these small frequencies, the types of remains are revealing. Adornment artifacts, Clothing and Clothing Manufacture artifacts, Recreation artifacts (mostly smoking pipes but also a toy teacup) and Transportation artifacts associated with horses indicate that the house above the cellar was occupied by a variety of personnel who undertook a variety of activities.

Table 13. 1988 Trench 5 Adornment Artifacts.

OBJECT	MATERIAL	OBJECT TYPE	STRATUM			Grand Total
			G	H	I	
BEAD	BONE	SIMPLE			1	1
	BONE Total				1	1
	GLASS	(blank)	1	2	3	6
	GLASS Total		1	2	3	6
BEAD Total			1	2	4	7
HAIRBRUSH	BONE	(blank)		1		1
HAIRBRUSH Total				1		1
Grand Total			1	3	4	8

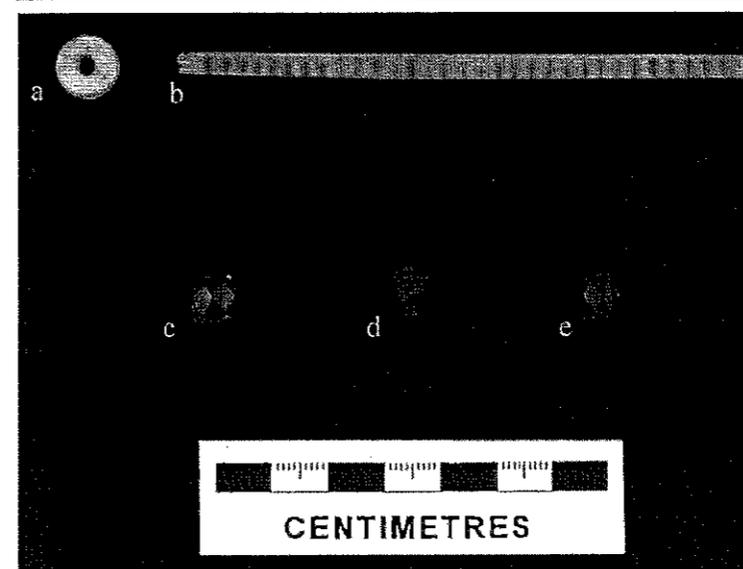


Figure 27: Adornment artifacts: a) bone bead, b) bone hairbrush fragment, c, d, e) blue polyhedral glass beads.

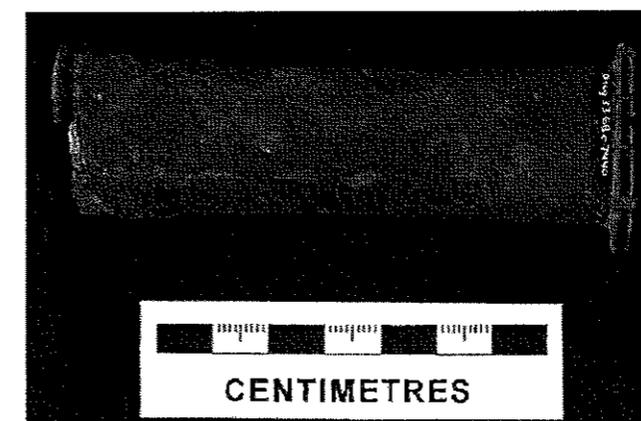


Figure 28: Lamp (?) with fish scale motif and horizontal lines.

Adornment artifacts consisted of Jewelry and Toiletry sub-categories. The Jewelry consisted of seven beads, and the Toiletry item was a hairbrush fragment. Table 13 presents Adornment artifacts according to Object Common Name, Material and Object Type by Stratum. These artifacts have a restricted vertical distribution, occurring in Strata G, I and H (oldest to youngest). One bead is made of bone that has been sawn and drilled (Fig. 27a). It is a simple bead that belongs to Type A2F - truncated disc bead (Karklins 1982:Fig. 5). There are six glass beads. The bead from Stratum G is blue, translucent, polyhedral bead commonly called blue glass trade beads. Two of the three beads from Stratum I are also blue glass trade beads of the same type as that from Stratum G (Fig. 27c). The third was made of wound glass and was also blue, except that it was opaque, tubular and smooth. The two beads from Stratum H were also blue, translucent, polyhedral glass trade beads (Fig. 27d, e). The hairbrush was made of bone (Fig. 27b). Although fragmentary, the recovered portion showed that it had been cut to shape then drilled to receive the bristles. All eight Adornment artifacts indicate that persons living in the house above the cellar took care with their personal appearance and that they may have decorated themselves or their clothing with beads of several sorts.

The Architectural Object category consists of the Accoutrement, Hardware and Structure sub-categories. The first of these contains one suspected lamp and 3098 fragments of windowpane glass. The suspected lamp (Fig. 28) was found in Stratum H. Upon re-examination, it seems unlikely to be a lamp part, but its identity is unclear. The artifact appears originally to have been tubular, but it has been subsequently crushed almost flat. It is incomplete, made of copper, corroded, blackened, cracked, incomplete and etched with fish scales and horizontal lines. The black colour indicates that the metal is a copper alloy, not pure copper, and the fish scale motif is interesting since it implies water, if not the sea. Copper and copper alloys, e.g. brass, were, and still are, used for boat fittings because they withstand corrosion, especially from salt water, better than ferrous metal fittings. The fish, i.e. marine, motif on this particular artifact, along with the copper alloy, suggests that the artifact may have a nautical origin.

Table 14 shows the distribution of windowpane glass. These fragments were coloured clear, blue-green or aqua, and they were all manufactured by rolling. Table 12 shows that two-thirds of all pane glass was found in Unit 2, while just under one-third was recovered in the neighbouring Unit 3. Unit 5 contained relatively little, and Trench 1 contained virtually none. Table 14, in which blue-green and aqua have been merged under the latter descriptor, shows the vertical distribution of pane glass. Blue-green glass occurs infrequently (N=49), mainly in Stratum I. Two fragments occur in the overlying Stratum H, and five occur in the underlying Stratum G. Finally, one "outlier" was found in Stratum E. Clear glass occurs in the vast majority (N=3049). Fully 75% of this number was recovered from Stratum T; indeed, this stratum is defined as one of glass fragments. The next largest amount (N=261) was recovered from the Stratum W just below. The next largest amount (N=161) occurs in Stratum R, just above Stratum T. All other strata that contain pane glass do so in small amounts, except Stratum I. Here are found the largest amounts of coloured glass and the fourth highest amount of clear glass. The four "peaks" of windowpane glass imply points in time when damage to windows occurred most frequently. The fragments in Stratum W can be assumed to represent breakage during initial construction of the building, either by the NWC or the HBC. The peak in Stratum T and the echo in Stratum R may represent cleanup of flood damage between 1826 and 1833. The peak in Stratum I may represent use of the building during the experimental farm period.

Table 14: 1988 Trench 5 Windowpane Glass.

COLOUR	COMPONENT																				Grand Total			
	IV					III				II							I		Blank					
	STRATUM					STRATUM				STRATUM							ST	Total	(blank)	Total				
	B	C	E	F	H	Total	G	I	N	Total	I-2	L	O	Q	R	S	T	U	Total	W		(blank)	Total	
BLUE-GREEN			1	2	3	5	41		46														49	
CLEAR	4	4	5	7	40	60	14	105	44	163	13	3	11	10	161	16	2336	9	2559	261	261	6	6	3049
Grand Total	4	4	6	7	42	63	19	146	44	209	13	3	11	10	161	16	2336	9	2559	261	261	6	6	3098

Table 12 shows that the Hardware sub-category consisted of 434 artifacts. The eyelet was found in Stratum G, and it was made of ferrous metal. The hinge was found in

Stratum N and is described as a "gudgeon; pintle" made of cast iron. Its corroded and friable state made difficult an exact identification of this artifact. Whether this object was a door hinge, or, as suggested by "gudgeon; pintle" it was part of a boat rudder, remains unknown. The suspected pin is thought to be that of a door hinge. It was found in Stratum E, and was made of ferrous metal. Three rings were found, all in Stratum I. They are made of copper and are thought to have been cast. Three rivets were found, one from Stratum B, one from Stratum H and the third from Stratum W. The rivets from Strata B and W were attached to a metal fragment. The Stratum B rivet was represented by the shank only, but the other two exhibited both head and shank. All were made of ferrous metal. Eight wire fragments were recovered. Six were found in Stratum H, one was found in I, and one had no stratigraphic provenience. All are made by extruding hot metal. The unprovenience wire fragment was recovered from Level 71, i.e. 230.10 - 230.20 m asl, so it occurs late in the depositional sequence of the cellar. It is made of iron and is galvanized. The Stratum I artifact is copper wire as are three of the artifacts from Stratum H. The two remaining wire artifacts from this stratum are iron.

Nails are presented in Table 15. Hand wrought nails numbered 35, of which half were found in Stratum I. Component IV contained 14% of the wrought nails, Component III contained 60%, and Components II contained 23%. None was found in Component I. There was no clear preference for head shape on wrought nails.

There were 284 nails identified as sheet cut, and another eight that are suspected of belonging to this type. Components III and IV contain roughly equal numbers of these nails, which together account for 82.5% of all sheet cut nails. Thus a period of heavy nail deposition occurred after 1848. Stratum I contains the highest number of sheet cut nails, followed by Stratum H. Component I contains 7 such nails, and Component II contains 33. The numbers of these nails, compared to the wrought nails, was a surprise because the *a priori* assumption was made that nails manufactured with the more advanced technology would not be present in such numbers on the fur trade frontier.

Sheet cut nails with the block head form are clearly the most common, representing just over one-third of this type of nail. One horseshoe nail was identified in Stratum Q, which implies the presence of shod horses and a blacksmith in the Settlement early in the 1826-1833 time period.

Nails without heads were described as "unidentifiable" object type, and they numbered 92. In Component I, headless nails represented 14% of all sheet cut nails. They comprised 21% in Component II, 42% in Component III and 30% in Component IV. These differences in relative amounts seem unusual. The increase in proportions of headless nails may be the result of an increase in renovation after 1833, compared to primarily new construction before that date. The incidence of nail breakage during their initial placement would be lower than the incidence of nail breakage during attempted extraction during renovation. Thus the peak occurrence of headless nails would indicate a peak in refurbishment, which would have occurred after the 1826 flood and during the occupation of the experimental farm. A decline in the relative frequency of headless nails in Component IV likely indicates maintenance activity designed to keep an aging structure functional.

Hand wrought nails have a slightly different chronological distribution than sheet cut nails. The peak occurrence of wrought nails occurs in Component III whereas the peak occurrence of sheet cut nails is shared in Components III and IV. As one might expect,



Table 16. 1988 Trench 5 Structural Sub-Category.

OBJECT	COMPONENT																				Grand Total																
	IV							III					II									I	(blank)														
	STRATUM						Total	STRATUM				Total	STRATUM									Total	W	Total	(Blank)	Total											
	B	C	E	F	H	H-4		G	G-2	I	N		I-2	L	O	Q	Q, N, I	R	S	T							U										
BOARD?; LOG?																														5							
BRICK	9	2	14	23	632	680	84	18	186	288																	2	6	6	20	20	996					
CHINKING		3		3	166	173	5	5	95	8	113	1	1	3																		1	1	1	1	1	434
CHINKING?									35	35																								4	4	4	39
CONCRETE									5	5																											5
MORTAR	56	31	19	27	1013	1146	189	8	502	71	770	14	37	44	17						9	51										172	41	41	34	34	2163
MORTAR; PLASTER		13		37	353	403	149		68	14	231					8																					688
MORTAR?					1	1			9	9																											10
PLASTER		66	1	3	53	123	24		97	3	124	3		4	1	2	13															23	5	5	1	1	276
PLASTER?					13	13			5	5																											18
PUTTY					1	1																													1	1	2
SAMPLE						1																															1
STONE									2	2																											2
Grand Total	65	115	34	93	2232	2540	452	31	1004	96	1583	18	39	51	26	2	38	5	178	23	380	75	75	61	61											4639	

There were 996 brick fragments recovered from the cellar. Hardly any were found in the lowest two components, but their numbers rose considerably in Component III and rose again dramatically in Component IV. This distribution implies a continual increase in this building material, especially after 1833. Stratum H alone contains about two-thirds of all bricks, suggesting that the most intensive deposition of bricks occurred around 1848.

There are 473 fragments of chinking and suspected chinking. This material consists of clay and silt that includes straw, straw impressions, and wood impressions, and is normally a tan colour. It was used to fill gaps between logs in the walls of buildings made in the Red River construction style (post on sill, primarily). The quantities of chinking are low in absolute frequency in Components I and II, although they comprised 30% of all structural artifacts in each component. Interestingly, a spike in frequency is seen in Stratum T, which is defined as a layer of broken windowpane glass. In Component III, chinking accounts for only 9% of all structural artifacts, and in the most recent component it accounts for 7%. Chinking clearly declines in utility throughout the history of the cellar feature. The large absolute frequencies of chinking in the two latest components likely result from cleaning and maintenance of the overlying building rather than use of chinking in new construction.

Five concrete fragments are inventoried from Stratum I. It seems unlikely that these materials are actually made with Portland mix, sand and water, so they will be considered as misidentified mortar.

Of the 4639 artifacts in this sub-category, almost half ( $n=2163$ ) are mortar fragments. Not surprisingly, mortar fragments are consistently the largest number of artifacts in each component, although the quantity of this artifact type increases dramatically between Components II and III. The distribution of mortar fragments

mirrors, to some extent, that of nails, except that mortar increases even more dramatically between Components III and IV. The distribution of mortar as a proportion of structural artifacts by component shows that, surprisingly, mortar is proportionally highest in Component I (54%), then varies between 45-48% in each of the other three components. The distribution of mortar likely indicates its continued use in construction, as well as its discard in maintenance and refurbishment, at a time when the use of chinking was declining. It is interesting that the peak of both brick and mortar deposition are found in Stratum H, and the second ranked incidence of their occurrence is in Stratum I.

The simultaneous occurrence of mortar and plaster is revealing. Plaster was often used as an esthetically pleasing finish coat on mortared walls. It may also embody some social symbolism because not everyone could afford this luxury. Component I produced only one such fragment, or 1% of the component's structural artifact assemblage. Component II produced 53 fragments, which comprised 14% of the component assemblage. Component III, with 231 such artifacts also constituted 14.5% of the assemblage, while Component IV, with 403 fragments, provided a value of 15%. The remarkable similarity of proportional frequency after the beginning of Component II suggests that the HBC maintained certain building codes and that the people who occupied the building were consistently of a relatively elevated position within the company.

The occurrence of plaster alone shows a slightly different distribution. The relative frequencies of this material hover around 5-8% in all components, although the absolute amounts in the two most recent components are equal to each other but much greater than the amounts in the two lower components. This time, Stratum I contains the largest absolute amount, suggesting that perhaps active plastering or plaster clean-up may have occurred after 1833.

Putty occurs in a known provenience only once, in Stratum H. This presence may indicate that window panes were being sealed in place by this artifact some time after 1848.

Stone occurs surprisingly infrequently in the deposit. Only two fragments, both from Stratum I, were identified as structural artifacts. This paucity of such a common raw material may indicate that it was not preferred for construction. By contrast, both Lower Fort Garry and Upper Fort Garry used vast quantities of limestone in their construction. This contrast remains to be satisfactorily explained, although a lesser value placed on the Fort Garry installation certainly must be considered.

When all architectural objects are considered together, several broad patterns can be seen. Of 8172 such artifacts, Component II contains 2986, Component III 1984, and Component IV 2775. Components II and IV clearly show the most evidence of deposition attributable to construction and/or renovation. Within these two components, Stratum T contains 2518 artifacts, of which 2336 are windowpane glass. Stratum H contains 2380 artifacts, over half of which is mortar and plaster, and a quarter of which are brick fragments. A similar pattern is seen in Component III, especially in Stratum I. Nails also show a dramatic increase in the two recent components. The picture presented by these data indicates several things. The abundance of material, especially fragile window glass, in Stratum T likely represents clean-up of damage from the 1826 flood. Stratum W1, a sterile light gray clay layer overlying the lowest stratum in the cellar, is interpreted as the residue of that flood. The horizontal nature of both W and W1, and the vertical stratigraphic distinction between these strata and Stratum C at the bottom of the wall

profiles, suggest that damage to the cellar had not occurred until W1 was partially or fully deposited. The strata of Component II show evidence of sloping on their upper surfaces, suggesting that they represent the beginning of trash deposition, rather than storage, in the flood damaged cellar. Broken windowpane fragments, other building debris, and silt were dumped into the former, now damaged, cellar. An attempt to re-crib the cellar appears to have been made after the flood, as evidenced by one or more vertical stratigraphic divisions at the south end of Strata S, T, L H3, M and I. Attempts may thus have been made twice, and perhaps as many as four times, to re-crib the pit as it filled, slumped and was refurbished.

The Clothing category contains 27 artifacts. Two of these are buckles. The first buckle was recovered in Stratum H, and it consisted of the frame and hinge (Fig. 29a). The metal is tentatively identified as copper, and there is a decoration on the face. The second buckle is thought to originate with an overshoe (Fig. 29b). It was found in Stratum N, is made of iron, and has four slots and three interior bars.

The Clothing category contains 27 artifacts. Two of these are buckles. The first buckle was recovered in Stratum H, and it consisted of the frame and hinge (Fig. 29a). The metal is tentatively identified as copper, and there is a decoration on the face. The second buckle is thought to originate with an overshoe (Fig. 29b). It was found in Stratum N, is made of iron, and has four slots and three interior bars.

Table 17. 1988 Trench 5 Buttons.

OBJECT TYPE	MATERIAL	COMPONENT							Grand Total
		IV		III		II			
		STRATUM	Total	STRA	Total	STRATUM	Total		
H		I		L	O				
SHANK	BRASS			2	2				2
	BRASS?			1	1				1
SHANK Total				3	3				3
UNDETERMINED	BONE			2	2				2
	BRASS;IRON			1	1				1
	IRON			1	1				1
	SHELL					1		1	1
UNDETERMINED Total				4	4	1		1	5
VERTICAL HOLE	BONE	1	1	6	6				7
	KOALIN?			1	1				1
	SHELL	1	1	5	5		1	1	7
VERTICAL HOLE Total		2	2	12	12		1	1	15
Grand Total		2	2	19	19	1	1	2	23

Twenty-three buttons were recovered, two each from Components II and IV, and 19 from Component III. Buttons made with vertical holes for attachment numbered 15, while those with shank attachments numbered 3. Bone and shell buttons (Fig. 29c, d) predominate, although brass and ferrous metal buttons (Fig. 29e, f) are not uncommon. One button is identified as being made of clay/ceramic (Fig. 29g). The repair of clothing is an activity most likely to occur in a domestic residence, and the abundance of buttons in Stratum I of Component III implies residential occupation of the building after 1833 and before 1848. This period coincides with the operation of the HBC experimental farm.

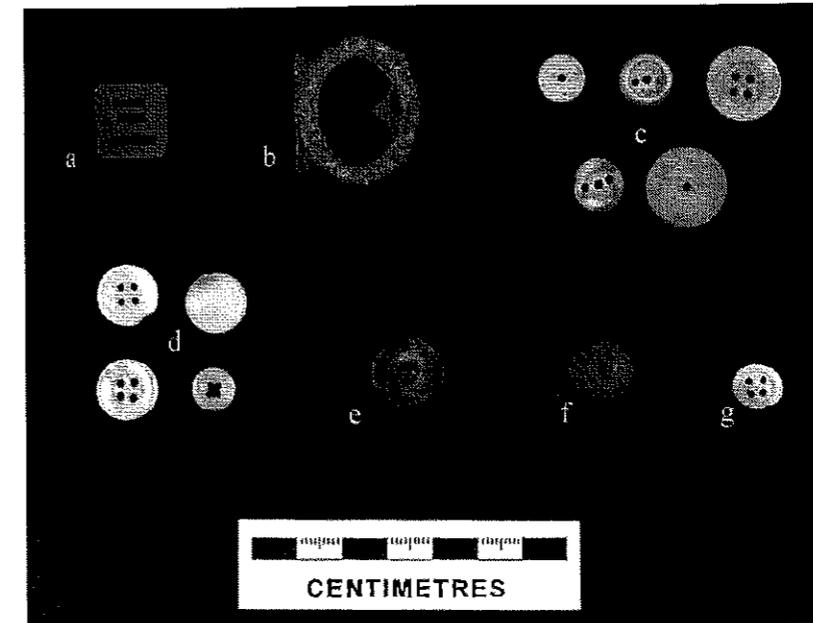


Figure 29: Clothing artifacts: a, b) buckles, c) bone button, d) shell button, e) brass button, f) ferrous metal button, g) ceramic button.

Two hooks were also recovered, one from Stratum F and the other from Stratum I. One is ferrous metal, and the other is copper or brass. Like buttons, these hooks indicate that clothing was used, repaired and discarded in the building above the cellar.

Table 18. 1988 Trench 5 Clothing Manufacture.

OBJECT	MATERIAL	COMPONENT								Grand Total
		IV			III		II			
		STRATUM	Total		STRATUM	Total	STRATUM	Total		
E	H		G	I		L	Q			
FABRIC	COTTON	2		2				2	2	4
FABRIC Total		2		2				2	2	4
PIN	COPPER		2	2		2				4
	COPPER;NICKLE		1	1			1		1	2
	COPPER?				1	2		3		3
	IRON				1	2		3		3
	IRON;NICKLE					4		4		4
	STEEL		1	1						1
PIN Total			4	4	2	10	12	1		17
Grand Total		2	4	6	2	10	12	1	2	21

Clothing Manufacturing artifacts are shown in Table 18. Four fragments of cotton cloth were recovered, two from Stratum E and two from Stratum Q. The latter stratum is a wood lens that is probably part of the 1826 flood clean-up. These two fragments were brown cloth with a floral pattern and were scorched and torn. The two fragments of gray, friable cloth from Stratum E belong to the end of the Fort Garry occupation, around 1850.

Straight pins were also found (n=17). The largest single number of these artifacts (n=10) were recovered in Stratum I. This distribution supports the idea that Stratum I

represents the core of the habitation refuse associated with the experimental farm. The pins, as a group, consist of ferrous metal and copper alloy artifacts, and most are bent and corroded.

An artifact identified as a bale seal represents commercial activity. There is some question around this identification, however, since most bale seals are made of lead whereas this one is made of ferrous metal. Although highly corroded, it seems more likely to have been a button frame.

The Communication category contains seven paper fragments and one pencil fragment. Three of the seven must be immediately discounted because they were found to be fragments of our own recording forms. The other four fragments, however, appear to belong to the fur trade. All were found in a confusion of strata labeled Q,N,I. Given the present division of components, these fragments could then come from either Component II or III. These fragments were gray paper and they did not show any writing. The pencil fragment was recovered from Stratum I2 in Component II. It consisted of a cut and ground slate fragment of the type used to write on slate boards.

Ceramic containers numbered 166, of which 34 were found in Component II, 60 were found in Component III, and 65 were found in Component IV. None was found in Component I. Predictably, Stratum H contained the largest amount of ceramic containers in Component IV, but there was a more even distribution of ceramics in the strata of Component III. Stratum Q, a wood lens thought to be deposited during flood clean-up, contained the of ceramic containers in Component II. Use and discard of ceramics clearly increased after 1833.

The types of ceramic containers have informative distributions. Bowls are more common in Component II than in later components, and the only soup tureen (Fig. 30a, b) and the only platter (Fig. 30c) were also found in this component. On the other hand, plates were more common in Components III and IV compared to II, and cups were confined to the two most recent components. Jugs and sugar bowls were only found after 1833. The picture that emerges from these data is one of a shift away from elaborate service of communal and/or liquid foods (soups, stews, roasts) served in tureens, platters and bowls. There appears to have been a move toward foods that could be served on plates and that were served with individualized serving dishes such as cups, jugs and small bowls.

Table 19. 1988 Trench 5 Containers.

MATERIAL	OBJECT TYPE	COMPONENT																Grand Total							
		IV				III				II				I	(blank)	(blank)	Total								
		STRATUM				STRA				STRATUM				ST	Total										
		B	C	E	F	H	Total	G	I	N	Total	I-2	L	O					Q	N, I	R	T	Total	W	Total
CERAMIC	BOWL					2	2		1	1					10	1			11						14
	BOWL?	1				3	4		1	3					2	1	1		4						12
	CUP					1	1																		1
	CUP?					1	1		2		1	3													4
	CUP?BOWL?					1	1			1	1														2
	JUG?					1	1		1			1													2
	PLATE	1	1	1		2	5		3	1	4	1			2				3						12

CERAMIC (continued)	PLATE?							2	2		3		3	1									1			1	1	7		
	PLATE?SAUCER?													3	3														3	
	SAUCER?											1		1															1	
	SOUP TUREEN?																	10					10						10	
	SUGAR BOWL													1	1														1	
	SUGAR BOWL?								2	2				1	1														3	
	UNDETERMINED (blank)	5		11	2	6	24	4	6	6	16						2	1					1	4			1	1	45	
CERAMIC Total	7	2	16	4	36	65	21	24	15	60	2	2	26	2	1	1	34									7	7	166		
FLORAL	STOPPER?												10	10		4													14	
FLORAL Total													10	10		4													14	
GLASS	BOTTLE	7						12	19	2	10	1	13		5	1						2	1	3	12	11	11		55	
	BOTTLE?	8		3				6	17	1	7		8	1									1	2	4	5	5	1	1	35
	GLASS								1	1																			1	
	JAR														2										2				2	
	TUMBLER?								1	1																			1	
	UNDETERMINED (blank)	4		1	3				8	1	1		2				1								1			1	1	12
GLASS Total	19		8	8	20	55	4	19	1	24	3	5	2				2	2	5	19	16	16	6	6	6	6	6	120		
Grand Total	26	2	24	12	56	120	25	53	16	94	5	9	4	26	4	3	6	57	16	16	13	13	13	13	13	13	300			

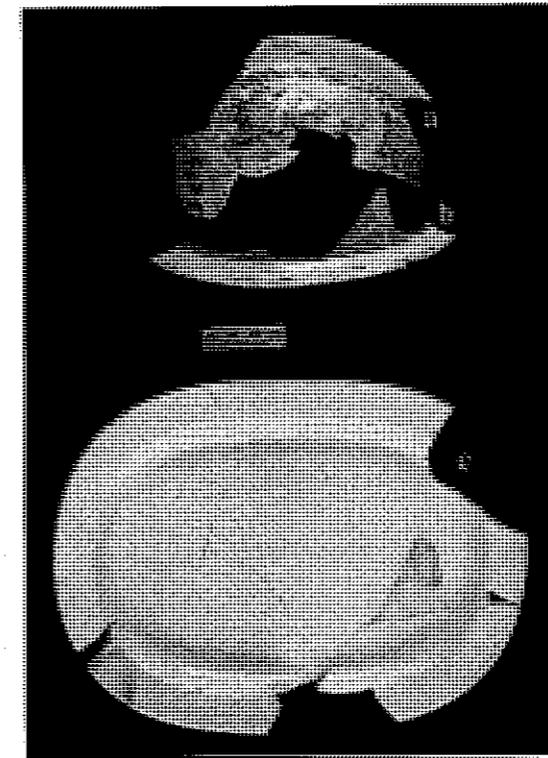


Figure 30: Ceramic vessels: a, b) soup tureen, c) platter.

Table 20 shows the distribution of ceramic according to their decorative patterns. Plain white ceramics ("blank" pattern) dominate the assemblage in all three components. In fact, the percentage of plain ceramics increases from 50% in Component II to almost 60% in Component IV. The increase in utilitarian ceramics suggests that occupants of the overlying building enjoyed progressively less social position within the HBC as time wore on and as the function of the building became less and less central to the HBC operation. "Willow" is the earliest pattern identified (Fig. 31a). Its manufacture began in the late 1700s and continues in the present. The fragment in Figure 31a is late Willow. As might be expected, this pattern is found in all three components. "Italian" pattern (Fig. 31b) was first manufactured in 1816 and is also found in all three components. "Swiss Cottage" pattern (Fig. 31c) was first produced in 1822 and continued in production until 1836. Its greatest abundance is in Component II, with small numbers in Components III and IV. Curation may account for the single fragment in the

most recent component. "Foliage" pattern (Fig. 31d) first came into production in 1830, and it is found only in the two recent components, and then only in small numbers. "Ruins" pattern (Fig. 31e), first produced in 1848, is found only in Component IV.

Table 20. 1988 Trench 5 Ceramic Patterns.

PATTERN	COMPONENT																	Grand Total	
	IV					III				II						(blank)			
	STRATUM					STRAT				STRATUM						STR			
	B	C	E	F	H	G	I	N	I-2	O	Q	Q,N,I	R	T	(blank)	(blank)			
(blank)	3	2	15	4	22	46	18	12	11	41	2	12	1	1	1	17	6	6	110
FOLIAGE? 1830-?	1					1	2			2									3
ITALIAN 1816-PRESENT					2	2		2		2		1				1			5
RUINS POST 1848					2	2													2
SWISS COTTAGE 1822-36					1	1	1	2		3		11				11			15
UNIDENTIFIED	1		1		8	10		5	4	9		2	1			3	1	1	23
WILLOW 1780'S-PRESENT	2				1	3		3		3		1	1			2			8
Grand Total	7	2	16	4	36	65	21	24	15	60	2	2	26	2	1	1	34	7	166

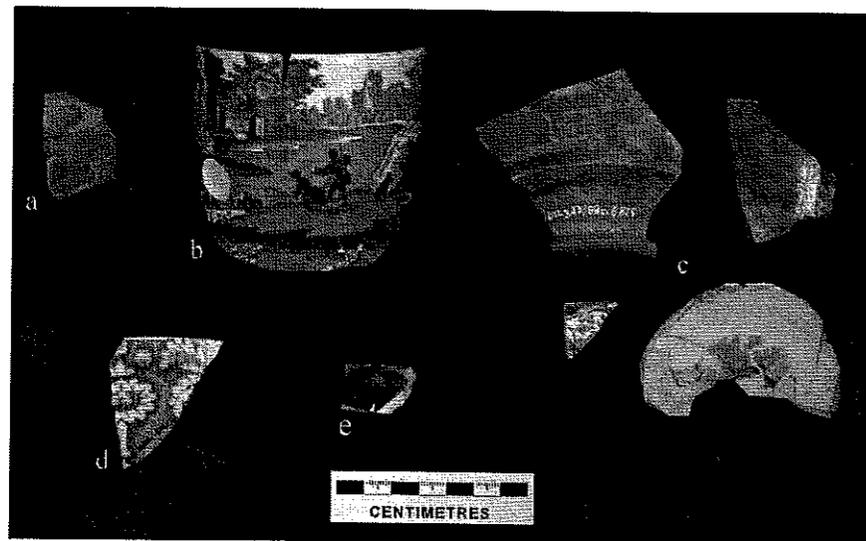


Figure 31: Transfer printed earthenware: a) late Willow, b) Italian, c) Swiss Cottage, d) Foliage, e) Ruins.

One puzzle that arises from this consideration of ceramic patterns is their absence from Component I. Both "Willow" and "Italian" patterns were manufactured before Fort Gibraltar II was built by the NWC and before the HBC took over the fort in 1821. There was time for these ceramics to be acquired, used, broken and discarded before the 1826

flood, as was "Swiss Cottage", yet no ceramics were deposited in Stratum W. One wonders why.

Table 19 shows that the Container category also contains floral artifacts. These consist of cork fragments, of which 10 were found in Component III and four in Component II. Assuming that these fragments represent bottle closures, the data indicate that wine or spirits consumption occurred to a greater extent between 1833-1848 than it did between 1826-1833. The friability of these artifacts due to their organic material may partly explain why more of them were not found, considering the distribution of bottles as described below.

Table 21 summarizes the distribution of glass containers. Three quarters of the glass containers are known and suspected bottles and bottle fragments. Bottles are the only glass containers in Component I, and they comprise almost all the glass containers from Components II and III. Only in Component IV do bottles become relatively less abundant due primarily to the increase in fragments for which the Object Type could not be identified. Nevertheless, this component contains the only artifacts identified as drinking glasses and tumblers. Two jar fragments were found in Component III. Wine and spirit bottles predominated in all components, specialized storage containers were rare, and, much like cups, sophisticated drinking vessels only appear in the later deposits of the cellar.

Table 21. 1988 Trench 5 Glass Containers.

OBJECT TYPE	COMPONENT																	Grand Total			
	IV					III				II						I			(blank)		
	STRA					Total				STRATUM						ST			STR		
	B	E	F	H	Total	G	I	N	Total	I-2	L	O	Q,N,I	R	T	Total	W		Total	(blank)	Total
BOTTLE	7			12	19	2	10	1	13		5	1	2	1	3	12	11	11			55
BOTTLE?	8	3		6	17	1	7		8	1				1	2	4	5	5	1	1	35
GLASS		1			1																1
JAR										2						2					2
TUMBLER?				1	1																1
UNDETERMINED	4	4	8	1	17	1	2		3		1					1			5	5	26
Grand Total	19	8	8	20	55	4	19	1	24	3	5	2	2	2	5	19	16	16	6	6	120

Table 3 shows that the Detritus category contains two flakes and one spall. All three artifacts are found in Component IV, a chert flake in Stratum E, and a slate fragment and a chert spall in Stratum H. The recency of all three lithic detritus fragments argues the notion that they result from aboriginal manufacture; instead, they likely result from an unidentified European activity.

Table 22. 1988 Trench 5 Detritus Scrap.

MATERIAL	COMPONENT																	Grand Total		
	IV					III				II						I				
	STRATUM					Total				STRATUM						Total				
	B	E	F	H	Total	G	I	N	Total	I-2	O	Q	R	T	U	Total	Total			
COPPER		3			3											1		1		4
GLASS				1	1	1	2	2	5											6
IRON	12	2	4	63	81		42	1	43	1	4	13	2	1	1	22				146
IRON?				4	4															4
LEAD							1	2	3											3
PLASTIC				2	2		3		3											5
TIN?							3		3											3
UNDETERMINED				1	1		2		2						1					4
Grand Total	12	5	4	71	92	1	53	5	59	1	4	14	3	1	1	24				175

Table 22 shows the type and distribution of detritus scrap. Ferrous metal scrap comprises 86% of all scrap, and just over 50% of all scrap is found in Component IV. A few bits of copper scrap were found in Components II and IV, while a few bits of lead and

tin (probably galvanized metal) were recovered in Component III. The few bits of glass scrap were also recovered from Component III. Most distressing is the recovery of plastic scrap from Strata H and I. Intrusion of modern plastic into these deposits, possibly by wind or gravity, is the most likely explanation for these recoveries. The absolute frequencies of scrap by component show a steady increase in this debris as the cellar deposits accumulated over time. Typically, Strata H and I account for about 85% of all scrap.

The Floral category (Table 23) contains 91 artifacts, with wood and bark fragments account for 83 of the total. Component I contained only one wood fragment. Component II contains only wood and bark, which account for two-thirds of all floral artifacts. Within this component, it is noteworthy that Stratum T contains only bark, while Stratum Q contains mainly wood. "Black spruce bark is thought to have been used as shingles, in addition to the more common materials of cedar and oak (Ross 1857: 388). The high concentrations of windowpane glass in Stratum T, together with the only occurrences bark fragments, supports the idea that this stratum represents post-flood clean up of the building above the cellar. Further support for this interpretation is provided by the concentrations of wood in Stratum Q, orange baked chinking in Strata I3 and U, and the almost sterile light gray clay deposits of Stratum S. Indeed, despite its thickness, Stratum S contained only 5 fragments of chinking with straw impressions, 16 windowpane fragments, and one headless wrought nail. Five wood fragments were found in Component III, and only four were recovered from Component IV. These numbers contradict the normal expectation of greater preservation, hence greater numbers, of organic materials in recent deposits, so human activity must be examined as the cause of this inversion of frequencies for wood and bark recoveries.

Table 23. 1988 Trench 5 Floral Artifacts.

OBJECT	COMPONENT														Grand Total
	IV			III			II				I		(blank)		
	STRATUM		Total	STRATUM		Total	STRATUM				ST W	Total	STRA (blank)	Total	
	C	H		G	I		I-2	Q	Q,N,I	T					
BARK						2	3		25	30					30
NUT		1	1												1
SEED				1	6	7									7
WOOD	1	3	4	2	3	5		33	1		34	1	1	9	53
Grand Total	1	4	5	3	9	12	2	36	1	25	64	1	1	9	91

A seed and two nuts were also recovered among the floral remains. One nut was recovered in six pieces from Stratum I (Component III), and it had been charred. Another nut, not charred, was found in Stratum H. Both nuts belong to genus *Corylus* (hazelnut), but the species was more difficult to identify with certainty. Either *americana* or *cornuta* are the likely species, and, between these, the former is favoured for two reasons. First, the shells appeared to be thinner than the comparative *C. cornuta*, more like the comparative *C. americana*. Second, *C. americana* is not common in old growth forest, as is *C. cornuta*, and most virgin forest in and near the RRS had been harvested by the time Component III was being deposited (after 1833). The seed was from Stratum G (component III), was not charred, was complete, and was identified as pumpkin (*Cucurbita maxima*). Perhaps this identification is too specific, but the seed most closely resembles some type of squash or gourd rather than a melon. The distribution of the seed and the nuts follows the normal

expectation that organic materials will be more abundant in more recent deposits because of less decomposition over time.

Two corroded copper spoon fragments represent food processing artifacts. Both fragments were recovered from Stratum I. One fragment is the bowl and stem of a spoon, and the other is the handle and stem. While it is tempting to think that they may belong to a single artifact, that connection is not evident from the fragments themselves. Nevertheless, the presence in Stratum I of artifacts associated with the preparation and consumption of food supports the inference so far that this stratum, and the component of which it is a part, derived from a domestic occupation of the overlying building.

The Food Procurement category contains only four artifacts. A harrow tooth was recovered from Stratum H, and a fish hook and two lead shot were found in Stratum I. Interestingly, the earlier Component III materials, which are thought to have been deposited by experimental farm employees between 1833 and 1848, consisted of hunting and fishing artifacts, whereas the later deposits in the cellar contained agricultural artifacts. The historical order of subsistence pursuits in the Settlement is reflected in the vertical distribution of these artifacts, but their component affiliations seem delayed by one step. One might expect that an experimental farm occupation (Component III) would result in the deposition of agricultural tools and that a fur trade deposit (Component II) would result in the deposition of artifacts of the chase. The apparent delay of one component in the deposition of these artifacts may indicate a discontinued use for them, hence their deposition in the component following their primary use.

The only artifact that was identified in the Housewares category was an object thought to be an umbrella spoke. Its recovery from Stratum T, however, seems unusual. This stratum is interpreted as being the result of flood cleanup in or after 1826. Windowpane glass and bark are hallmarks of this stratum, and, while a simplistic quip might be made that an umbrella would be most appropriate for rain and flooding, a reasonable explanation is difficult to formulate for the presence of such an artifact at this early date in the Red River Settlement, and in the house overlying this cellar deposit.

Table 24 shows the distribution of the category Natural Object Modified. As the name indicated, these are natural objects, but they have been modified somehow by human activity. No such objects were found in Component I, mirroring the relative lack of floral artifacts in this component. Component II contained only six artifacts, all charcoal fragments. Component III contained 81 artifacts, 75 of which were recovered from Stratum I. This stratum contained 71 of the 76 charcoal fragments recovered in Component III. Stratum I contained only one slag fragment and three slate fragments in addition to the charcoal. Heavy deposition of burned wood, again consistent with heating and cooking in an overlying domestic structure, is indicated here. Component IV contained 50 modified natural objects. Again, charcoal dominated this total (n=42), and Stratum H contained the greatest concentration of this and other artifact types. Seven clinkers were recovered in this component, mostly above Stratum H. One explanation for their presence is as intrusions from the overlying railway fill (Stratum A). This explanation cannot be discounted, but neither can the possible presence of blacksmithing, as indicated by the horseshoe nail in Component III. The consistently heavy deposition of a variety of materials in Stratum H, in contrast to light deposition in all other strata of Component IV, suggests that any post-1848 occupation of the building above the cellar resulted mainly in the deposition of Stratum H.

Table 24. 1988 Trench 5 Natural Object-Modified.

OBJECT	COMPONENT														Grand Total	
	IV				III				II				(blank)			
	STRATUM				STRATUM				STRATUM				STRAT	Total		
	C	E	F	H	G	I	N		I-2	L	Q		(blank)			
CHARCOAL	7		1	34	42	4	71	1	76	1	4	1	6	1	1	125
CLINKER		2	4	1	7	1			1					10	10	18
FIELDSTONE;MORTAR				1	1											1
SLAG							1		1							1
SLATE/FRAGMENT							3		3							3
Grand Total	7	2	5	36	50	5	75	1	81	1	4	1	6	11	11	148

Among the category Natural Object Unmodified, only coal deserves some attention. Four pieces were found, one from Stratum G, two from Stratum B, and one without provenience. The coal in Stratum B may be intrusive, but that in Stratum G must be considered as an in situ recovery. This recovery may indicate that material other than wood was being imported to the Red River Settlement, albeit in very small quantities, for use in buildings that were occupied by relatively high-ranking HBC personnel.

Pipes of the Smoking Equipment sub-category are presented in Table 25. One stone pipe was recovered from Stratum Q, a wood lens in Component II (Fig. 32a). It is described as made of basalt, but that seems unlikely because basalt is hard and difficult to work, especially by grinding, polishing and drilling. Instead, a black stone, possibly nephrite, steatite or soapstone, is a more likely identification of the material. The pipe is also described as L-shaped and consisting of the lip, bowl and extension. Its recovery in Stratum Q suggests that it may have been deposited in the house before the 1826 flood and dumped with other flood debris in the cellar during clean-up.

Table 25. 1998 Trench 5 Smoking Pipes.

MATERIAL	OBJECT SUB-TYPE	COMPONENT															Grand Total			
		IV				III				II				I	(blank)					
		STRATUM				STRATUM				STRATUM				Total		Total				
		B	E	F	H	G	I	N		I-2	Q	R	T		W	(blank)				
BASALT	L SHAPE												1			1				1
BASALT	Total												1			1				1
KAOLIN	OBLIQUE	3	2	7	18	30	6	53	3	62	1	7	1	5	14	13	13	4	4	123
KAOLIN	Total	3	2	7	18	30	6	53	3	62	1	7	1	5	14	13	13	4	4	123
Grand Total		3	2	7	18	30	6	53	3	62	1	8	1	5	15	13	13	4	4	124

Table 25 lists pipes as being made of kaolin, but this was simply a nomenclature convention that was adopted during the fieldwork. Walker (1971) shows in detail that such pipes are made of ball clay, not kaolin. Also, the convention was also applied that all pipe fragments came from oblique angled elbow pipes, even if the elbow was not present.

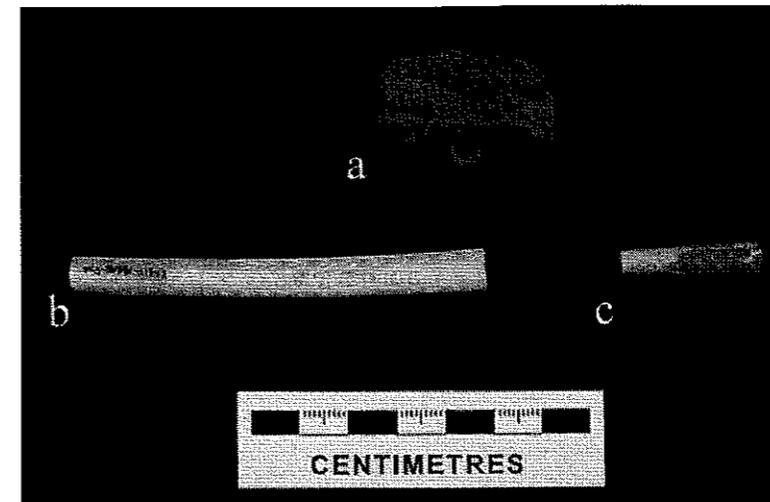


Figure 32: Smoking pipes: a) L-shaped stone pipe, b) floral motif clay stem, c) painted clay stem.

smoking activity, and associated pipe breakage and discard, can be inferred for Stratum I, and this interpretation is consistent with experimental farm occupation of the building that stood over the cellar. Occupation and smoking both appear to have continued after 1848 to judge by the abundance of artifacts in Component IV.

Two re-fitted stem fragments from Stratum W appeared to bear a floral motif (Fig. 32 b), and another stem fragment from the same stratum appeared to be painted (Fig. 32c). The size and condition of the artifacts precluded more precise description and identification. The dearth of easily identified and dated embossed pipe stems and bowls was frustrating. It remains to be explained why plain pipes were more abundant than decorated ones, but the availability or purchase of plain, expedient, probably relatively cheap, utilitarian clay pipes seems to be indicated.

A miniature ceramic pitcher from a doll's tea set was found in Unit 5, level 70. Although no stratigraphic association was noted for this artifact, other artifacts from this unit and level were found in Stratum E. A late deposition in Component IV is therefore indicated. The presence of female children in or near the building between 1848 and 1852 cannot be clearly associated with any event or occupation of the building, but the Red River Settlement was a thriving colony by this time, so the presence of female children and associated toys is not unusual.

Table 26 shows that Transportation category of artifacts. One currycomb fragment was found in each of Strata I and E. Six harness fragments were recovered, one from Stratum H and five without stratigraphic context. Examination of the artifact catalogue reveals that all five of these fragments were recovered from level 71 of Unit 3. The profiles show that Stratum E is the most likely stratum of recovery, although Stratum B, and to a lesser extent Stratum F, could also be the source of these fragments. In any case, Component IV contains all the harness fragments. Two horseshoe nails were also recovered, both from Component III. Though not great in numbers, these artifacts show that horse transportation was an important aspect of Settlement life from at least 1826.

One hundred and twenty-three clay pipe fragments were recovered from the cellar feature. Components I and II produced relatively few (n=13 and 15 respectively), while Component III produced half of all such artifacts (n=62) and Component IV produced 50. Predictably, Stratum I contained the greatest number in Component III, and Stratum H contained the greatest number in Component IV. Thus substantial amounts of

Table 26. 1988 Trench 5 Transportation.

OBJECT	COMPONENT										Grand Total
	IV			III			II		(blank)		
	STRATUM		Total	STRATUM		Total	STR Q,N,I	Total	STRA (blank)	Total	
	E	H		I	N						
CURRY COMB	1		1				1	1			2
HARNESS		1	1						5	5	6
HORSESHOE NAIL				1	1	2					2
Grand Total	1	1	2	1	1	2	1	1	5	5	10

### Summary

Component I (Table 27) dates between initial construction and the 1826 flood. This component consists of Strata W and W1, both of which are horizontal deposits with well-defined vertical edges. The configuration of these strata indicates that the cellar was cribbed after its initial construction and that deposition was relatively even over the floor of the cellar. No clear indication from the artifacts denotes the materials that may have been stored in the cellar, nor is there any clear indication whether the cellar was built before 1821 by the NWC or after 1821 by the HBC. Component I contained 380 artifacts, including 261 windowpane fragments, 41 mortar fragments, 22 chinking fragments, 16 bottle fragments, 13 smoking pipe fragments, a few nails and brick fragments, and several odds and ends. All items were recovered from Stratum W. Stratum W1 was a layer of light gray silt that has been interpreted here as the remains of the 1826 flood. The artifacts seem to indicate that relatively little deposition occurred in this component. Those artifacts that were deposited suggest an emphasis on construction, with smoking and drinking indicated in small quantity.

Component II (Table 28) is thought to represent a shift in the use of the cellar. No longer for storage, it now became a refuse pit under the floor of the house above it. The material in Component II is thought to derive from cleaning up the 1826 flood damage and is thought to have accumulated before 1833. Over 3100 artifacts are found in this component, of which over 2500 are windowpane glass fragments. Mortar fragments account for 172 artifacts, while chinking fragments account for a further 125. Bark, wood, plaster, bricks, mortar and plaster, and nails also account for approximately another 200 artifacts. Bottle sherds and smoking pipe fragments are the most abundant non-construction materials, and these data continue the importance of these artifacts from Component I. Thus about 3000 of the 3100 artifacts from this component reflect building materials. Their abundance in the various strata of this component suggests intensive

Table 27. 1988 Trench 5 Component I Artifacts.

OBJECT	STRATUM				Grand Total
	W	X	XX	Y	
BRICK	6				6
CHINKING	22				22
MORTAR	41				41
MORTAR; PLASTER	1				1
NAIL	8				8
NAIL?	1				1
PIPE	13				13
PLASTER	5				5
RIVET	1				1
SAMPLE	1	1	1	1	4
SHERD	16				16
WINDOWPANE	261				261
WOOD	1				1
Grand Total	377	1	1	1	380

deposition of the very materials that would have to be replaced after flood damage to a building.

Table 28. 1988 Trench 5 Component II Artifacts.

OBJECT	STRATUM										Grand Total
	H-3	I-2	L	O	Q	Q,N,I	R	S	T	U	
BARK		2			3				25		30
BOARD?; LOG?							1		4		5
BRICK			1				1				2
BUTTON			1	1							2
CHARCOAL		1	4		1						6
CHINKING		1	1	3			1	5	106	8	125
CURRY COMB						1					1
FABRIC					2						2
FRAGMENT			4								4
MORTAR		14	37	44	17		9		51		172
MORTAR; PLASTER					8		13		17	15	53
NAIL		2	2	13	19		5	1	4		46
PAPER						7					7
PENCIL		1									1
PIN			1								1
PIPE		1			8		1		5		15
PLASTER		3		4	1	2	13				23
SAMPLE	1	1		1	1		1	1	1	1	8
SCRAP		1		4	14		3		1	1	24
SHERD		5	5	4	26	4	3		6		53
UMBRELLA									1		1
UNDETERMINED				1							1
WINDOWPANE		13	3	11	10		161	16	2336	9	2559
WOOD					33	1					34
Grand Total	1	45	59	86	143	15	212	23	2557	34	3175

The distribution of materials by stratum is also informative. Stratum U is a restricted lens of orange baked chinking that also contains mortar, windowpane glass, and one fragment each of bottle glass and metal scrap. Stratum T overwhelms all other strata in terms of artifact numbers, with over 2500 artifacts of which over 2300 are windowpane glass. All other double and triple-digit frequencies consist of construction refuse. Only six bottle sherds and five smoking pipe fragments indicate any evidence of occupancy in the overlying building. Stratum S, though thick, contains few artifacts, and they are all related to construction. Stratum R contains the second largest artifact count, and most of them are windowpane fragments. Most other artifacts in this stratum are construction-related, with only three bottle fragments and one clay pipe fragment representing daily living activities. The mixed deposit Q,N,I predictable contains few artifacts about which little can be said. Stratum Q, defined mainly on the dense concentration of wood, contains the third largest artifact total despite its thinness. Construction materials predominate, windowpane glass becomes scarce from this stratum onwards, and there are increased signs of domestic activity. Twenty-six ceramic sherds (including multiple fragments of a plain white earthenware platter), eight clay pipe fragments, two cloth fragments, and one charcoal fragment suggest that occupation of the overlying building may have recommenced by this

point. Only one button breaks the tradition of construction-related artifacts in Stratum O. Stratum L contains mostly construction debris too, but another button, some charcoal, a pin and some bottle fragments indicate possible domestic activity in the overlying building. Much the same interpretation can be applied to Stratum L, except that the few domestic artifacts now consist of a slate pencil, a clay pipe fragment and a few bottle sherds.

The shape of the strata themselves also indicates damage to the walls of the cellar. Stratum C appears to have encroached above Stratum W1, and a new cribbing appears to have contained Strata Q, R, S and T. The east wall profile suggests that this cribbing may have extended upwards to about 229.60 m asl, but the west wall profile suggests that part of the cribbing may have given way before Stratum G was deposited starting around 1833. The vertical line of stratigraphic breaks for Strata O, M and I indicates possible reconstruction of this failed cribbing some time in the period 1833-1848.

Table 29 presents the artifacts from Component III. The variety of artifacts in this component is immediately apparent, as are the main types and their stratigraphic distribution. Over 2300 artifacts were recovered with almost 1600 of these in Stratum I, almost 600 in Stratum G, and almost 200 in Stratum N. Windowpane glass accounts for only 209 artifacts, although construction-related artifacts are still very clearly important. Bricks make their debut in numbers, and mortar and plaster become predominant over mud chinking. Non-construction artifacts increase dramatically in this component. Charcoal from cooking, plates and plate fragments, bottle fragments, spoons, pins and clay pipe fragments are just some of the domestic artifacts that begin to appear in abundance during this period. Smaller indicators such as seeds, lead shot, rings, a hook and eye, a fish hook, a buckle and a few beads attest to the type and quality of life experienced by the house occupants. By the time that Stratum I was deposited, the cribbing on the east wall also appears to have failed again. Some possible reinforcement of this cribbing may have been added, judging from the south end of Stratum I.

Table 29. 1988 Trench 5 Component III Artifacts.

OBJECT	STRATUM							Grand Total
	G	G-2	G-3	G-4	I	M	N	
BALE SEAL					1			1
BEAD	1				4			5
BRICK	84	18			186			288
BUCKLE							1	1
BUTTON					19			19
CALICHE					4		1	5
CHARCOAL	4				71		1	76
CHINKING	5	5			95		8	113
CHINKING?					35			35
CLAY					1			1
CLINKER	1							1
COAL	1							1
CONCRETE					5			5
EYELET	1							1
FISH HOOK					1			1
FRAGMENT					10			10
HINGE							1	1
HOOK					1			1

HORSESHOE NAIL							1	1
MORTAR	189	8			502		71	770
MORTAR; PLASTER	149				68		14	231
MORTAR?					9			9
NAIL	39	1			134		10	184
NAIL?					1			1
PIN	2				10			12
PIPE	6				53		3	62
PLASTER	24				97		3	124
PLASTER?					5			5
PLATE/FRAGMENT					3			3
RING					3			3
SAMPLE	3	1	1	1	2	1	1	10
SCRAP	1				53		5	59
SEED	1				6			7
SHERD	25				43		17	85
SHOT					2			2
SLAG					1			1
SPALL	1				6			7
SPOON					2			2
STONE					2			2
UNDETERMINED	1				1		1	3
WINDOWPANE	19				146		44	209
WIRE					1			1
WOOD	2				3			5
Grand Total	559	33	1	1	1586	1	182	2363

Table 30 shows the artifacts from Component IV. Like Component III, the variety of artifact types is very broad. The paucity of artifacts from the variants of Stratum H is explained by the identification of subtle variations in H when the profiles were drawn that could not be distinguished when excavation was in progress. The dark colour and similar consistency of these silt deposits, found mainly between 1.5 and 2.0 m below surface in a 1 m wide trench that was cribbed according to Workers Compensation Board standards, likely led to the excavators' lack of ability to distinguish subtle variation within strata from subtle distinctions between strata.

Almost 800 artifacts were recovered from this component, with almost 550 of these found in variants of Stratum H. In the component as a whole, construction materials are still clearly important, but domestic artifacts associated with food preparation and consumption, recreation and personal adornment are quite evident. Some indication of agricultural activity is also evident in the form of horse harness fragments and a harrow tooth. There appears to be little difference between Stratum H and the later strata, except that small numbers of coal, curry comb, fabric and pins infrequently occur in later strata but not in H. No special significance appears to derive from this distribution. The strata appear to have accumulated in a depression that lacked cribbing. This depression, presumably under a trap door in the floor of the overlying building, continued to form a convenient refuse disposal option for the building's occupants. By the time of Component IV, these occupants were no longer experimental farm employees; instead, they were likely miscellaneous HBC employees who were housed here during the last stages of the building's life.

Table 30. 1988 Trench 5 Component IV Artifacts

OBJECT	STRATUM														Grand Total
	B	C	E	F	H	H-1	H-2	H-4	H-5	H-6	H-7	H-8	H-9	H/O	
BEAD					2										2
BRICK	9	2	7	6	113										137
BUCKLE					1										1
BUTTON					2										2
CALICHE					1										1
CHARCOAL		1		1	8										10
CHINKING		1		1	51			1							54
CLINKER			1	2	1										4
COAL	2														2
CURRY COMB			1												1
FABRIC			1												1
FIELDSTONE;MORTAR					1										1
FLAKE			1		1										2
HAIRBRUSH					1										1
HARNESS					1										1
HARROW TOOTH					1										1
HOOK				1											1
LAMP?					1										1
MORTAR	6	12	4	3	103										128
MORTAR; PLASTER		1		1	8										10
MORTAR?					1										1
NAIL	14		30	20	92										156
NUT					1										1
PEBBLE					1										1
PIN					4										4
PIN?			1												1
PIPE	3		2	6	18										29
PLASTER		4	1	3	14										22
PLASTER?					1										1
PUTTY					1										1
RIVET	1				1										2
SAMPLE	1	1	1	1	3	1	1	1	1	1	1	1	1	1	16
SCRAP	7		3	2	23										35
SHERD	26	2	20	9	51										108
SHERD?					1										1
SPALL				1	2										3
TWIG?					1										1
UNDETERMINED					2										2
WINDOWPANE	4	2	5	5	27										43
WIRE					4										4
WOOD		1			3										4
Grand Total	73	27	78	62	547	1	1	2	1	1	1	1	1	1	797

Fauna

Table 31 presents the distribution of faunal classes by Unit within Trench 5. Six thousand bone fragments were recovered from the cellar feature, almost half of which were fish bones. This NISP is large because fish bones do not fuse throughout life as do mammal and bird bones. Mammals account for 2400 bones and fragments, and birds account for 634. The component distribution of material shows that a small number of skeletal elements were recovered from Component I, and that, among these materials, fish and mammals predominated. Component II contributed 2112 bones and fragments, with Stratum Q contributing 1236 of them. Here, fish elements dramatically outnumber mammal and bird elements. Strata U, and I2 contained several hundred elements each, while the other strata in this component contributed relatively few bones. The relative proportions of fish and mammal NISP values change across the strata within the component. Stratum U contains 100 mammal fragments and no fish. Stratum R contains relatively equal numbers of each, but Strata I2 and Q each contain disproportionately large numbers of fish in relation to mammal. Component III R contributes 2152 bones and fragments to the assemblage, and fish elements again slightly outnumber mammal elements, with birds coming a distant third. Stratum I contributes almost 1500 elements with Strata N and G contributing the remaining quarter of the component total. Fish NISP generally is slightly higher than mammal NISP, except in Stratum N where the frequency for mammals rises slightly in relation to fish. Of particular note is the dramatic increase in bird remains in Stratum I. In Component IV the situation changes. Mammal NISP values

Table 31. 1988 Trench 5 Fauna.

CLASS	COMPONENT														Grand Total												
	IV				III			II				I	(blank)	Total													
	STRATUM				STRATUM			STRATUM				Total	(blank)														
	B	C	C/E	E	E/F	F	H	Total	G	G-2	I	N	Total			I-2	L	O	Q	Q,N,I	R	S	T	U	Total	W	Total
AMPHIBIA				2			2	272	9		42	203	14				83	7	33		4		141	7	7	11	634
AVES	2	4		1			265	4			265	4					1		1				2			11	634
AVES?							4	4			4						1		1							1	6
BIVALVA							29	29			29																29
MAMMALIA	11	10	1	9	4		845	892	107	3	567	891	15	11	32	82	7	135		58		100	440	171	171	14	2408
MAMMALIA?				1			1	1			1	1															2
OSTICHTHYS	2	8		2			160	179	119	2	771	1054	223	43	37	1067	11	128		10		1523	150	150	1	2907	
OSTICHTHYS?							1	1			3	3				3		3					6				10
UNDETERMINED							1	1				1															1
Grand Total	15	22	1	15	4		1301	1381	235	5	1494	2152	252	54	69	1236	25	300		72		100	2112	328	328	26	5999

rise substantially in relation to fish; indeed, fish NISP values fall below those of birds in this component. All bivalve and amphibian elements also were found in this component. Stratum H contributes 1301 of 1381 elements in this component, with quite minor contributions from all other strata.

Two amphibian vertebrae were found in Stratum E and were judged to be of natural origin. Similarly, all bivalves were recovered from Strata F and H, all are considered to belong to the Natural sub-category, and all belong to the Family Unionidae, probably Genus Lampsilis, which includes freshwater mussels that grow in both the Red and Assiniboine Rivers.

Table 32 presents the Aves class by component and stratum. Of 634 elements, 7 were found in Component I, 141 in Component II, 203 in Component III, and 265 in Component IV. Birds not identifiable to Class comprised the largest number of elements, almost two-thirds. Elements of ducks and geese were by far the most abundant of the identified remains. Chickens and turkeys were about as common as other birds.

The small sample size from Component I precludes any reliable statement about class preference, although ducks and geese may have been more preferred than other birds. The birds in Component II were almost exclusively ducks and geese. Very few chickens and turkeys or other birds were represented. Stratum Q contained the bulk of the bird remains and almost all the duck and goose remains. Stratum R contained the next highest count of bird elements; however, it contained less than half the amount of remains of Stratum Q, and almost all of them were unidentified to Class. A continued preference for ducks and geese is shown by the frequencies in Component III, but chickens and turkeys and other birds become relatively more abundant at this time. Stratum I contained the largest number of elements, but the vast majority of them is not identifiable to Class. This stratum contains the largest numbers of identifiable elements from chickens and turkeys and from other birds, but few elements were identifiable as ducks and geese. In contrast to this situation, Stratum N contained a large proportion of ducks and geese, few chickens and turkeys, no other birds, and surprisingly few unidentifiable elements. Stratum G is highly notable for the virtual absence of bird remains despite the volume of this deposit. Component IV contains the largest absolute frequency of bird remains, and all but seven were found in Stratum H. The vast majority of bird elements could not be identified to Class, but the identified elements were about equally distributed between the three identifiable classes.

Table 32. 1988 Trench 5 Aves.

ORDER	COMPONENT																Grand Total			
	IV				III				II				I					(blank)		
	STRATUM				STRAT				STRATUM				I					STRAT		
	B	C	E	H	G	I	N	Total	I-2	Q	Q,N,I	R	T	Total	W	Total		(blank)	Total	
ANSERIFORMES	2			40	42	1	6	25	32		43	1	5		49	3	3	5	5	131
GALLIFORMES				35	35		17	2	19		4				4			2	2	60
PASSERIFORMES				35	35	1	13		14				2		2					51
(blank)		4	1	155	160	7	116	15	138	14	36	6	26	4	86	4	4	4	4	392
Grand Total	2	4	1	265	272	9	152	42	203	14	83	7	33	4	141	7	7	11	11	634

The Order Anseriformes (waterfowl) are shown in Table 33. It contains the Family Anatidae (ducks, geese and swans) that is further divided into a number of Sub-Families. Both these latter taxonomic divisions have been merged under the heading Family in Table 33. The Family Anatidae was the best level of identification that could be attained for 67 elements, thus little more is known about them that, indeed, they are waterfowl. Much of this apparent inability to separate elements by Family, and also by Genus and Species must be attributed to the high degree of skeletal similarity between many of the duck species. Anatidae are most heavily represented in Component IV, moderately represented in Components II and III, and very rare in Component I. The Sub-Family Anatinae contains surface feeding, or dabbling, ducks. Their distribution among components shows that they are rare in Components IV and III, most abundant in Component II, and absent from Component I. The Sub-Family Anserinae consists of geese, and they are about half as abundant in total as are dabbling ducks. Geese, of course, feed in the water by dabbling also. Their distribution across components shows that they are virtually absent from Components I and IV and that their frequencies in the middle two components, although not high, is equal to each other and greater than in the earliest and latest components. The Sub-Family Aythyinae consists of diving ducks, and there were very few recovered elements from these birds. All four for the entire site came from Stratum Q in Component II. Overall, only three strata, H, N and Q, account for 108 of the 131 waterfowl elements.

Table 33. 1988 Trench 5 Anseriformes.

FAMILY	COMPONENT														Grand Total	
	IV			III				II			I		(blank)			
	STRA		Total	STRAT			Total	STRATUM			Total	W	Total	STRA (blank)		Total
	B	H		G	I	N		Q	Q,N,I	R						
ANATIDAE	2	29	31	1	3	13	17	10	1	3	14	2	2	3	3	67
ANATIDAE?						6	6	1			1					7
ANATINAE		9	9		2	1	3	24			24					36
ANATINAE?		1	1													1
ANSERINAE		1	1		1	5	6	4		2	6	1	1			14
ANSERINAE?														2	2	2
AYTHYINAE								4			4					4
Grand Total	2	40	42	1	6	25	32	43	1	5	49	3	3	5	5	131

Table 34. 1988 Trench 5 Order Galliformes.

FAMILY	COMPONENT										Grand Total		
	IV		III			II		(blank)					
	STR	H	Total	STRATUM		Total	STR	Q	Total	STRA (blank)		Total	
				I	N								
MELEAGRIDIDAE	3		3	5		5							8
PHASIANIDAE	31		31	12	2	14	4		4	2		2	51
(blank)		1	1										1
Grand Total	35		35	17	2	19	4		4	2		2	60

Two Families comprise the Order Galliformes as shown in Table 34. The smaller of the two Families is Meleagrididae, consisting entirely of *Meleagris gallopavo*, or wild turkey. The other Family, Phasianidae, consists solely of domestic chicken. Turkey remains are far fewer than those of chicken, and turkey remains are confined to

Components III and IV whereas chicken remains were also found in Component II, albeit in small quantities. Minimal use of wild turkeys appears to have been confined to the post 1833 period, but the growing consumption of domestic chicken likely began after 1826. Stratum H has over half of all Galliformes remains, and most of them are chicken. Stratum I has half the number of these remains, but chickens are still more abundant than turkeys.

The Order Passeriformes (perching birds) contains no more specific taxonomic information, so the comments derived from Table 32 above are all that can be said. They are found in greatest abundance in Stratum H of Component IV. Stratum I in Component III contains less than half the number of elements in Stratum H. These birds are scarcely represented in Component II and are not present in Component I.

An examination of the individual avian skeletal elements reveals that all bird elements are present. The general inference can thus be made that whole birds were being brought to the building where they were cooked and eaten. Their bones were then discarded in the cellar feature. Such a conclusion is not surprising because a dead bird, even the size of a goose, can be treated as a single butchering unit and can be transported easily without butchering. There are a few anomalies that deserve discussion. The NISP for ulnae is 20, nine left and 11 right, but the NISP for radii is only 12, five left and seven right. Carpometacarpi were present 11 times, and humeri only 8. Most of the NISP values for forelimbs suggest that 8-12 of these elements were present, representing a minimized MNI estimate of 4-6 birds. The presence of three skulls suggests that the lower of these estimates is likely to be more accurate, however the presence of 14 sternal fragments suggests that an equal or lesser number of birds may be represented. Consideration of the element distributions by component for each of the Sub-Families Anatinae and Anserinae did not show robust patterns. The surface feeding ducks were represented by a full range of skeletal elements that showed element distributions similar to the entire Anatidae family. The geese showed a more restricted range of skeletal elements, mostly thorax and proximal limb bones, but the sample is small (n=14) and does not provide reliable results.

A similar pattern is evident in the Galliformes remains. A wide range of elements is present from all body regions and both body sides. The Meleagrididae were too few to provide meaningful patterns, but the Phaenidae show that all elements are represented and that an MNI estimate of two birds could account for the bone assemblage. Of course, some breakage could account for the higher NISP values for syncacra and sterna. Again, entire birds appear to have been brought to the fort and consumed there.

The avifauna show several trends. Few bird remains were found in Component I, so it appears that this food source was relatively unimportant during that time period. Waterfowl, in the form of ducks and a few geese, were predominant over chickens and turkeys in Component II. The increased numbers of chickens and turkeys in Component III, especially chickens, seems to indicate that domestic fowl, and land birds generally, increased in importance as food sources after 1833. Even greater reliance on birds appears to have occurred in Component IV. Bird remains are distributed between strata differently than artifacts. Stratum G contains virtually no bird remains, but it contains many artifacts. Strata R and Q, which normally account for few artifact remains, contain many of the Component II birds. In concert with artifacts, Strata I and H contain large numbers of bird remains. Whole birds were transported to, and consumed in, the building above the cellar. After consumption, the bones were dumped into the cellar. The low number of bird remains in Component I may reflect the cellar's storage function, whereas discard of bones

beginning in Component II suggests that change in function of the cellar to a refuse disposal pit. Wild aquatic birds remain important at least from Component II, but with the introduction of domesticated land birds (chickens), wild land birds (turkeys) appear to have received increased attention.

Table 35 presents the distribution of mammalian Orders by Component and Stratum. Predictably, unidentifiable mammal bone accounts for the largest single percentage of the total NISP. Lagomorpha (rabbits and hares) account for a quarter of the total remains, and Artiodactyla (cloven-hoofed animals) account for one-sixth of the total. Rodentia and Carnivora account for virtually none of the skeletal elements.

Table 35. 1988 Trench 5 Mammals.

ORDER	COMPONENT														Grand Total										
	IV				III			II				I		(blank)											
	STRATUM				STRATUM			STRATUM				Total	(blank)												
	B	C	C/E	E	E/F	F	H	Total	G-2	I	N	Total	I-2	L		O	Q	Q,N,I	R	T	U	Total	W	Total	(blank)
ARTIODACTYLA	2		1	1	1	184	190	33		20	180	1	1	8	13		9	3		35	8	8	6	6	419
CARNIVORA						2	2																		2
LAGOMORPHA								1	1	155	157	10			33		118	46		100	307	148	148		612
RODENTIA		1					1	2			2			5	1					6	2	2			11
RODENTIA?						1	1	2	1		3														4
(blank)	9	9		9	3	11	658	699	3	439	39	4	10	23	31	7	8	9		92	13	13	8	8	1362
Grand Total	11	10	1	10	4	12	845	893	3	568	214	15	11	32	82	7	135	58	100	440	171	171	14	14	2410

The stratigraphic distribution of mammalian elements shows that Component I contains relatively few elements, Component II contains one-sixth of all mammal remains, and that Components III and IV contain almost equal numbers of elements that, together, comprise about three-quarters of all mammal remains.

Consideration of the vertical distribution of each Order is informative. The artiodactyls are very minimally represented in Components I and II; almost all their numbers are found in the two more recent components. Within each of these latter two components, Strata H and I contain the greatest numbers of elements. Lagomorphs show the opposite distribution to artiodactyls. Their greatest numbers are found in Component II, while Components I and III contain substantial, and almost equal, numbers of these bones. No lagomorph bones are found in Component IV. Notably, of the 171 bones in Component I, 148 (86.5%) belong to lagomorphs, all of which were found in Stratum W. In Component II, the vast majority of lagomorph bones were found in Strata R and U, while in Component III the majority was found in Stratum N. Surprisingly, Stratum I contained only one bone, although it normally contains the bulk of recovered materials in this stratum.

Rodent bones show little variation between components, due mainly to their paucity. Both the absolute numbers and the relative frequencies of unidentifiable mammal bone declines from the top to the bottom of the cellar. In Component IV, unidentifiable mammal bone accounts for 78% of the component's NISP. In Component III the amount drops to 61.6%, then to 21% in Component II and to 7.6% in Component I. There seems to be a tendency for bones to be more highly fragmented as time passes. The taphonomic processes behind this phenomenon are not immediately clear.

The artiodactyls are presented in Table 36 by Family and Genus. Bovidae account for 75% of all remains, while Suidae (pigs) account for a mere 14%. Relatively few elements (n=38) could not be identified at least to the Family level.

Table 36. 1988 Trench 5 Artiodactyla.

FAMILY	GENUS	COMPONENT																		Grand Total					
		IV						III				II					I		(blank)						
		STRATUM						STRAT				STRATUM					ST	Total	(blank)		Total				
		B	C/E	E	E/F	F	H	Total	G	I	N	Total	I-2	L	O	Q	R	T	Total		W	Total	(blank)	Total	
BOVIDAE	BISON							1	1	1	3				1		1	2						5	
	BISON/BOS						10	10	6	30	12	48		1	1		4	6	1	1	1	1	1	66	
	BOS	1					30	31	8	32	1	41			2	4	3	9						81	
	CAPRA?						1	1																1	
	OVIS						6	6	2	13		15	1					1						22	
	OVIS/CAPRA	1	1	1			82	85	2	17	2	21			1			1				2	2	109	
(blank)					1	17	18	10	3	1	14				2		2	1	1				35		
BOVIDAE Total		2	1	1		1	146	151	29	96	17	142	1	1	4	7	7	1	21	2	2	3	3	319	
BOVIDAE? (blank)							1	1		1		1												2	
BOVIDAE? Total							1	1		1		1												2	
SUIDAE	SUS						24	24	2	18	2	22			3	1	2	6	5	5	1	1	1	58	
	SUS?						2	2																2	
SUIDAE Total							26	26	2	18	2	22			3	1	2	6	5	5	1	1	1	60	
(blank)	(blank)														1			1						1	
(blank) Total					1		11	12	2	12	1	15			4	2	1	7	1	1	2	2	2	37	
Grand Total		2	1	1	1	1	184	190	33	127	20	180	1	1	8	13	9	3	35	8	8	6	6	6	419

The distribution of artiodactyls among components shows that these animals were not widely used in Component I. Of the eight elements in this component, only two were Bovidae while, surprisingly, five were Suidae. Such early use of pigs in the Red River Settlement was unexpected. The use of Bovidae increases somewhat in Component II, and they outnumber Suidae at this time; nevertheless, artiodactyls in general are still not abundantly used during this period. Components III and IV look almost identical in terms of the absolute and relative frequencies of remains. Together, they contain 88% of all Artiodactyl elements. Bovidae clearly predominate these assemblages, Suidae are present in small frequencies, and unidentifiable bone comprises very small frequencies.

The distribution of elements at the Genus level within the Family Bovidae can also be examined in Table 36. *Bison* bone does not occur frequently, and it is only found in Components II and III. Elements that are definitely *Bos* (domestic cattle), by contrast,

number 81, while a further 66 could not be distinguished between cattle and bison. These data imply that bison bone was not being brought to the Red River Settlement in any quantity. One explanation might be that only dried meat and pemmican were brought to the Settlement, so no bones would be expected. Another explanation might be that bison meat was not important as a food source in the Settlement. Two other implications also seem clear. One, bison appear not to have been hunted and butchered close to the Settlement, even early in its history. Two, bison and cattle were consumed in different quantities and perhaps they were also processed in different ways. Cattle bones are distributed differentially among the components. There is one equivocal element in Component I, small amounts in Component II, the largest frequency of remains in Component III, and a moderate decline in numbers of elements in Component IV.

The *Ovis/Capra* "genus" actually represents sheep; there are no records, nor are there any incontrovertible skeletal remains, of goats in the Settlement before 1852. These remains number 132, or one third of all Bovidae. They also outnumber cattle 2:1, although the latter clearly produce more meat per individual than the former. As one might expect, no sheep elements are present in Component I. Two elements are present in Component II, one in Stratum O and the other in Stratum I2. Both these strata immediately underlie Stratum G in the west wall profile, so it may be that two elements were mis-assigned to their stratum during excavation. It also may be that both strata should have been included in Component III. Sheep bones were deposited in numbers first in Component III, particularly in Stratum I, and their numbers almost triple by Component IV, notably in Stratum H.

The Bovidae indicate that bison, to judge from skeletal elements, was never important as a food source, although dried and processed meat could have been important. Cattle were infrequently used in the earlier components but reached their peak frequency in Component III. Thereafter their importance appears to have declined somewhat. Sheep, on the other hand, appear clearly in Component III and increase their numbers in Component IV. Thus the consumption of cattle appears to have been more frequent than the consumption of sheep in Component III, while in Component IV the reverse was true. As noted in the discussion of Table 38, pigs were infrequently consumed during Components I and II, then the numbers of their elements increased in both Components III and IV.

An examination of butchering patterns shows that very few remains in Component I show any such evidence. One unfused distal epiphysis of the femur of a juvenile individual that could not be distinguished between bison or cattle showed evidence of having been chopped and cut. It had also been gnawed. The only other bovid element in Component I was a thoracic vertebral centrum fragment that lacked any butchering marks. The evidence is meager for interpretation of butchering patterns, but the disarticulation of the knee of an immature cattle or bison by chopping and cutting suggests that in Component I times large land mammals were eaten and that they were processed crudely. The presence of a thigh from such an animal may indicate that a generally low ranking portion of the animal was consumed in the building above the cellar.

A bison right scapula spine fragment from Component II showed cut marks. A *Bison/Bos* femur had been sawn transversely at two places, forming a cylinder of bone mid-shaft. This element also bore cut marks. Two *Bison/Bos* ribs showed evidence of having been cut and chopped. One was the right first rib, and the other was a left rib. Two

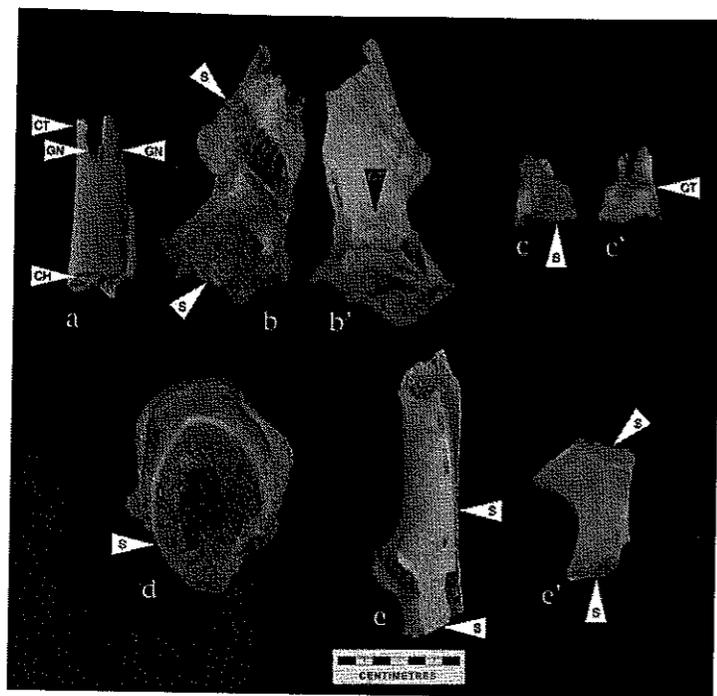


Figure 33: Butchering remains: a) cut, chopped and gnawed *Bos/Bison* rib, b) cut and sawn *Bos/Bison* vertebra, c) cut and sawn *Bos/Bison* vertebra, d) sawn *Bos* humerus head, e, e') cut and sawn *Bos* innominate.

continue as butchering methods, and sawing first appears. Disarticulation of carcasses appears to have been accomplished by chopping through the lumbar vertebrae, probably close to the posterior end of the rib cage. The rib cage was reduced by sawing or chopping in a line from head to tail somewhere near the rib mid-shaft. This operation was finished by knife and produced both rib roasts and short ribs/brisket. Meatless bones, possibly used for soup or marrow, were removed from the hind limb, and probably the forelimb, by axe following the pattern established in Component I. Thighs were cut transversely by knife and saw to produce round roasts and/or steaks. Cut marks on the scapular spine suggest the creation of chuck steaks or roasts. The impression created by the use of sawing and the locations of various types of cuts is one of sequential carcass reduction and the creation of meat cuts that resemble those produced commercially today. The cut marks in this component suggest that relatively little large animal consumption occurred during this time period.

Component III contained only one cut and broken bison rib. The only other bison element was a phalange that was unmarked. The importance of bison is clearly low by this time, and the handling of bison carcasses appears to be different from that of cattle. Two *Bos/Bison* femoral fragments were recovered; one showed cut marks and the other had been sawn. Two metacarpals were chopped and cut, and one phalange was cut. Three ribs were chopped, one was cut and sawn, and the other was simply sawn. One vertebra was chopped and sawn and another was cut and sawn; both were lumbar vertebrae (Fig. 33c).

*Bos/Bison* vertebral fragments showed evidence of having been cut and chopped. Both fragments were found in Stratum R, and both were from one or two lumbar vertebra. One fragment was the left lateral process, and the other was the right anterior articular process. Six *Bos/Bison* rib fragments showed evidence of cutting, chopping, sawing, or gnawing, or a combination of several such modifications (Fig. 33a). Similarly, a *Bos* vertebra fragment had been cut and sawn (Fig. 33b). Chopping was evident on the right posterior articular process of a *Bos* first or second lumbar vertebra. The picture that dimly emerges from this examination is one of a continued focus on large land mammals. Little butchery of bison was evident, but modest amounts of cattle bone showed butchering marks. Cutting and chopping

Among the *Bos* (cattle) remains, one carpal exhibited cut marks, as did the proximal end of a femur. The articular condyle of a mandible had been cut so that the lower jaw could be removed. This individual was a sub-adult animal. Six metatarsals bore cut marks; three carried them at the proximal end, and three at the distal end. There was no pattern according to left or right side of the animals. One phalange showed cut marks also. Five *Bos* ribs were cut and broken, while one each was cut, cut and chopped, and cut and crushed. Two vertebrae, one of which was a cervical, had been cut and sawn. The butchering of cattle appears to have continued as described in Component II. The appearance of numerous cut marks on the lowest fore and hind limb bones suggest that hides are being removed by circling knife cuts around the "wrists" and "ankles", or lower, so that the skin can be kept for tanning. Cut marks on the mandible suggest that tongues were being extracted and consumed.

Sheep appear in Component III for the first time. Surprisingly, few bones exhibit butchering marks. A charred phalanx defies easy explanation because it is unlikely to be food refuse. Two *Ovis/Capra* ribs exhibited cut marks, and one *Ovis/Capra* rib was sawn. Two scapula fragments were cut, and one vertebra each was chopped and cut. The chopped vertebra was cervical, while the cut vertebra was lumbar. Sheep butchery is far less well documented than is that of cattle. Chopping occurs on only one element, a neck vertebra. This is an entirely different location from the lumbar disarticulation seen in primary butchery of cattle. Sawing also appears not to have been very common at this time; instead, most butchery seems to have been done by knife. This practice may simply be a function of the relatively smaller size of sheep carcasses than those of cattle.

Component IV contained no bison and showed no evidence of butchering on *Bos/Bison*. Only *Bos* among the large artiodactyls showed butchering evidence. Astragali and carpi showed cut marks. The humerus in this component was represented by the proximal head that had been sawn (Fig. 33d). This is the location of standard commercial butchering sub-sectioning of the shoulder area to remove the neck portion. An innominate fragment consisting of the left ilium and pubis of a juvenile bull had been sawn (Fig. 33e,e'), and this may indicate the production of sirloin cuts. Ribs showed evidence of cutting, sawing and cutting and breaking. A sacrum fragment and a scapula fragment were cut, and three vertebral fragments were cut and sawn (two thoracic and one lumbar) while one was only cut. The pattern of cattle butchery shows that chopping has become less frequent as a method of carcass disarticulation. In addition, sawing appears to have become more important at this time and to have facilitated the production of more recognizable, standard beef cuts. It is unlikely that a commercial butchery existed in the Settlement at this time, but the emergence by this time of beef cuts that are recognizable in today's supermarket or butcher shop indicates that HBC employees were being fed cuts of beef much like those we know ourselves.

Component IV sheep remains indicate that cutting was the primary method of butchery. One vertebra was both cut and broken, one rib fragment was chopped and another was cracked, and a femur was sawn. Apart from these few examples, all butchered bone showed only cut marks. The femoral fragments numbered three. One was the proximal epiphysis, and it exhibited cut marks. Another was the distal epiphysis, which also exhibited cut marks. The third was a diaphysis that had been sawn. These marks bear no relation to modern sheep butchery, which leaves the entire rear leg and pelvis in a single cut. The butchery of sheep in the Settlement appears to have involved removing the leg

from the pelvis, then separating the "thigh" from the "calf" at the "knee", all with a knife. This "thigh" was then subdivided at mid-shaft by sawing. An entire right mandible with M3 erupting had been cut, suggesting that the tongue of the animal had been removed. No information was recorded for the location of the cut on the metatarsal or on the radius. The vertebrae showed no chopping or sawing; cutting was the primary means of disarticulation. Seven cut vertebrae were cervical, one was caudal, and one was lumbar. Interestingly, one of the cut cervical vertebrae was tentatively identified as the 6th cervical, and it is at this point that commercial sheep butchery separates the neck from the shoulder. The pattern of sheep butchery is thus one primarily of knife use, supplemented very occasionally by sawing and by chopping. There is some indication that cuts that might be familiar today were being produced, but other sections of the animals were being cut up quite differently than we would see today.

Suidae (pigs) were few in number, but their distribution among strata shows that they were present in the deposits from the earliest component and that their peak of discard appears to have been during Components III and IV. A wide range of elements are represented in the deposits, so processing, consumption and discard of all parts of pigs is inferred. Cut marks show that only knives were used to butcher pigs; no bones showed chopping or sawing.

Carnivores are represented by only two elements. These elements were proximal phalanx fragments on which the epiphyses were fused. The elements were tentatively identified to the Family Canidae, and they were found in Stratum H of Component IV.

Lagomorpha are shown in Table 37 and they all belong to the Family Leporidae. The only Genus and Species that could be confidently identified was *Lepus americanus*, the Snowshoe hare. Not only are the remains of hare the most abundant of all fauna, but the distribution by strata and components is revealing as is the distribution of skeletal elements.

The vertical distribution shows that no hare remains were found in Component IV. Component III contained 157 elements of which 155 were found in Stratum H. Component II contained 307 elements, or half the total number of hare remains, and over 200 of these elements were found in Strata R and U. Considering that these two strata are not thick, the density of hare remains in these strata is remarkable. The largest surprise, though, is the abundance of hare remains in Component I. Here, 148 elements were recovered, almost the same number as in Component III. Thus, while Component I produced little Artiodactyl material, it produced an abundance of Lagomorpha. Clearly, small wild mammals were an important resource during the early years of the cellar's existence.

Consideration of the element distribution of hare remains provides more interesting information. Metatarsals are by far the most abundant elements. Phalanges are the next most abundant element, followed closely by metacarpals. All these elements belong to the fore and hind limb extremities. Lesser numbers of limb bones then appear in the deposits, but even here the distribution is intriguing. Lower limb bones appear in modest numbers among the elements identified as *Lepus* (28 radii, 12 ulnae, 26 tibiae, 5 astragali, 7 calcanei), but upper limb bones appear infrequently (2 humeri, no femora) as do most bones of the axial skeleton. The exception to the latter statement is cranial fragments, of which 14 were recovered. A similar distribution is seen in the elements that could only be assigned to the Family Leporidae. This examination indicates that hares were being

skinned for consumption and that the lower limb bones, and probably the head, were being discarded in the cellar feature, possibly attached to the pelt. The carcass, consisting of the whole body and generally the limbs above the wrist and ankle, was cooked and eaten. The bones from these meals were then discarded in the cellar.

Table 37. 1988 Trench 5 Lagomorpha.

GENUS	SKELETAL ELEMENT	COMPONENT											Grand Total	
		III				II					I			
		STRATUM			Total	STRATUM					Total	STR W		Total
		G	I	N		I-2	Q	R	T	U				
LEPUS	ASTRAGALUS			1	1		1		3		4			5
	CALCANEUS			1	1			1	2	2	5	1	1	7
	CRANIAL			1	1		2	5	6		13			14
	HUMERUS											2	2	2
	INNOMINATE			1	1							1	1	2
	MANDIBLE			4	4		2		1		3			7
	METACARPAL			17	17	3		10		6	19	28	28	64
	METAPODIAL			3	3									3
	METATARSAL			29	29	3	3	8	13	15	42	30	30	101
	PHALANX			23	23		1	5	8	21	35	11	11	69
	RADIUS			5	5			1		4	5	18	18	28
	RIB			1	1									1
	SCAPULA											1	1	1
	STERNUM								1		1			1
	TIBIA			6	6	2	2	4	4	1	13	7	7	26
ULNA			4	4			2		1	3	5	5	12	
VERTEBRA			1	1		1				1			2	
LEPUS Total				97	97	8	12	36	38	50	144	104	104	345
(blank)	ASTRAGALUS							1		1				1
	CALCANEUS			1	1	1	1	3		2	7	1	1	9
	CARPAL ?							1		1				1
	CHEEKTOOTH			3	3		2		4	6				9
	CRANIAL			1	1			1		1				2
	INCISOR			3	3									3
	LONG BONE							6		6				6
	MANDIBLE			1	1									1
	METACARPAL			17	17			9		6	15	8	8	40
	METAPODIAL					1	3			4				4
	METATARSAL			15	15		6	35	3	15	59	18	18	92
	PHALANX			15	15		1	8		21	30	3	3	48
	RADIUS	1	1	1	3			2		4	6	4	4	13
	RIB							1			1	4	4	5
	TIBIA			1	1			6	1	1	8	3	3	12
ULNA						2	1		1	4	3	3	7	
(blank)						6	8			14			14	
(blank) Total		1	1	58	60	2	21	82	8	50	163	44	44	267
Grand Total		1	1	155	157	10	33	118	46	100	307	148	148	612

Cut marks on hare bones are, predictably, unevenly distributed. Many bones showed no cut marks at all, while one metapodial element and one phalange exhibited one

cut mark each. Three cranial fragments exhibited cut marks, all unexpectedly on the forward portion of the head (maxilla and zygoma, nasal, and premaxilla). The remaining 13 cranial fragments showed no butchering marks. None of the 104 metacarpals nor any of the 193 metatarsals showed cut marks. Eleven radii exhibited cut marks, and all but one of these elements consisted of the distal portion of the bone. The pattern for ulnae is the same; all cut marks are on distal ulna fragments. In other words, cuts were being made at the "wrist" of the hare, and the distal elements of the forelimb were discarded with the skin. Twelve tibiae exhibited cut marks. Three of these elements were diaphysis (mid-shaft) fragments, and the other nine were distal fragments. None of the calcanei nor the astragali (ankle bones) of hares showed any cut marks, so, as expected, the lower hind limbs were being severed just above the ankle joint and the foot bones were also discarded with the skin.

MNI estimates for the entire cellar feature indicate that at least 23 hares would be required to produce the bones that were recovered. This estimate is a minimizing estimate because it takes the cellar deposit as a whole. Sub-dividing the cellar deposit by components produces different estimates. Component I required eight animals to produce the observed assemblage, Component II required 15 (12?), and Component III required eight (6?) animals. The intensity of harvesting snowshoe appears to have been greatest in Component II with lesser but equal intensity in Components I and III.

Table 38. 1988 Trench 5 Rodentia.

GENUS	SKELETAL ELEMENT	COMPONENT								Grand Total
		IV		III		II		I		
		STR C	Total	STR G	Total	STRATUMM O	Total	STR W	Total	
CASTOR	CHEEKTOOTH	1	1							1
	HUMERUS							1	1	1
	MANDIBLE							1	1	1
CASTOR Total		1	1					2	2	3
SCIURUS	METACARPAL					2	2			2
SCIURUS Total						2	2			2
(blank)	CHEEKTOOTH			2	2					2
	INCISOR					3	3			3
	INNOMINATE					1	1			1
(blank) Total				2	2	1	3	4		6
Grand Total		1	1	2	2	1	5	6	2	11

The rodents are presented in Table 38. Their numbers are not large, especially among those identified to Genus, but a vague pattern may be present. *Castor* (beaver) and *Sciurus* (squirrel) are the two genera present in the remains. Of three beaver elements, one humerus and one mandible were found in Component I, and one cheektooth was found in Component IV. Two squirrel metacarpi were found in Component II. While little can be said about the elements that are unidentified to Genus, the few elements that could be identified to this level may indicate the fur trade emphasis in the earliest years of the Settlement. The squirrel remains in Component II may be related to the large numbers of hares in this deposit. If, as proposed in this report, Component II represents clean-up from the 1826 flood, the dramatic rise in numbers of rabbit remains, and perhaps squirrel to a

lesser extent, may indicate a reliance on wild game for a short period after the flood. This reliance may have occurred because domestic cattle drowned in numbers, and the replenishment of their numbers would have required several years, either through importation or through local breeding.

Consideration of the faunal material that is not identified to the Class level shows that many of the elements can be identified. The implication is that the elements are not so crushed and broken that the elements themselves cannot be recognized; however, their degree of breakage precludes reliable taxonomic identification. The distribution of these elements by stratum and component mirrors that of the major mammalian taxa that can be identified, thus there does not seem to be any differential breakage by taxon.

The mammalian fauna exhibits some general trends. A surprising lack of bison bone, even in Component I, may suggest one of two things. Either bison meat was consumed primarily as boneless dried meat or as pemmican, or bison was relatively unimportant. If the cellar functioned as a food storage location during Component I times, then deposition of bison remains, like birds as noted above, might not have occurred until the cellar's use changed to one of refuse disposal. By this time, reliance on bison may have shifted toward domestic cattle. The prodigious numbers of hare lower limb bones suggests that, at least for a time during Component II when Strata R and Q were deposited, hare were heavily relied upon. If the component separation and dates are accepted, these peaks in rabbit consumption may relate to the drowning of cattle during the 1826 flood and the reliance on wild animals, especially small game with potential for quick population replacement. This interpretation is consistent with the reliance on wild waterfowl that was seen in the discussion of birds. Hares cease to be important by the end of Component III, and the use of domestic mammals (cattle, pigs and sheep) replaces them. Sheep act as a chronological marker, having been imported to the Settlement first in 1833. Pigs, on the other hand, were present from the outset, albeit in small numbers at first. Butchery of bison and cattle was accomplished by sectioning the carcass with an axe. Sections were sub-divided with a knife and later with a saw. By Component IV times, recognizable commercial beef cuts were being produced. Sheep and pigs were butchered mainly by knife.

Fish Orders are shown in Table 39 by Component and Stratum, and a clear skewing among the remains is evident. Acipenseriformes (sturgeon) remains number only six, two from Component II and four from Component IV. These fish were clearly not sought regularly nor in abundance. Clupeiformes, or herring-like fish, which includes Lake Whitefish, mooneye, goldeye, and pike, account for about one-third of all remains identified to this level and about 10% of all fish remains. The vast majority of these remains are found in Component II; virtually none was found in Component III, and only a few were found in Component IV. Cypriniformes (suckers, catfish) account for only 61 elements, and two-thirds of these were found in Component II. None was found in Component I and only a few were found in Components III and IV. Perciformes accounted for two-thirds of all elements identified to the Order level or better, and they accounted for 20% of all fish remains. Within this Order are found walleye, sauger, perch and freshwater drum. A modest number of fish of this Order were found in Component I, and over half of them were found in Component II. The number of their remains declined in Component III, and they were all but absent in Component IV. Unidentified fish were

most common in Components II and III where they totaled approximately 1750 of 1937 such remains and well over half of all fish remains.

Table 39. 1988 Trench 5 Ostichthys.

ORDER	COMPONENT													Grand Total														
	IV			III			II				I		(blank)															
	STRATUM			STRATUM			STRATUM				STRATUM	STRATUM	STRATUM															
	B	C	E	F	H	Total	G	G-2	I	N	Total	I-2	L		O	Q	Q,N,I	R	S	T	Total	W	Total	(blank)	Total			
ACIPENSERIFORMES					4	4									2						2						6	
CLUPEIFORMES					24	24									2						2							312
CYPRINIFORMES				1	8	9									1						1							61
PERCIFORMES		4		2	24	30									1						1							601
(blank)																												1937
Grand Total																												2917

Component I contained about 5% of fish remains, but Component II, by contrast, contained over half of all fish remains. Stratum Q alone accounted for over one-third of all fish remains, and Strata I2 and R also provided substantial numbers of elements. Component III contributed another one-third of all fish remains with the greatest number coming from Stratum I and substantial numbers from Strata G and N. Component IV contributed marginally more fish bone than Component I, and Stratum H contained most of these elements.

The *Acipenser* (sturgeon) remains consisted of one possible frontal bone from Stratum H, three scutes from the same stratum, and two scutes from Stratum Q. The cartilaginous nature of Acipenseridae almost guarantees that few remains of these fishes will be found. Only the scutes, bony plates found in the skin, are sufficiently mineralized to be found with any frequency. The presence of scutes, though, suggests that sections of sturgeon were brought onto the site, that they retained their skin, and that they were large enough to contain scutes.

The genera within the Order Clupeiformes are shown by Component and Stratum in Table 40. It is immediately apparent that the Genus *Esox* (pike) is only tentatively identified, is present only in small numbers, and is found only in Component IV. *Hiodon* (mooneye and goldeye) is clearly the most important genus within this Order, accounting for 267 definite and 21 suspected elements. Fish of this Genus are found in small numbers

in Component I, huge numbers in Component II, small numbers in Component III, and they are absent from Component IV. Stratum Q within Component II contained over two-thirds of all Clupeiformes remains, and the vast majority of these were *Hiodon* elements.

Table 40. 1988 Trench 5 Clupeiformes.

GENUS	COMPONENT											Grand Total											
	IV		III			II				I													
	STR	Total	STRATUM		Total	STRATUM				STRA	Total												
	H		I	N		I-2	Q	R	T	W													
ESOX?	24	24																				24	
HIODON			2	3	5	3	225	28	2	258	4	4											267
HIODON?							21			21													21
Grand Total	24	24	2	3	5	3	246	28	2	279	4	4											312

*Hiodon* elements are shown by component and stratum in Table 41. Component II contains almost all of these elements, and the range of elements indicates that whole fish are being brought to the site and prepared, consumed and discarded there. Both Mooneye and Goldeye belong to the genus *Hiodon*, but the habitat preferences of each virtually eliminate Mooneye as the fish in the deposits. Instead, Goldeye, which prefer turbid, slow-moving water, are the most likely fish represented in the cellar deposits. Goldeye winter in lakes and deep water below the ice. During Spring breakup, Goldeye move upstream in turbid rivers and spawn between May and July in ponds, backwater pools and turbid lake margins. They then continue moving upstream, and then return to deeper river locations and lakes for the winter. They are primarily nocturnal and feed at, and occupy, the water surface (Scott and Crossman 1973:329).

Table 41. 1988 Trench 5 Hiodon.

SKELETAL ELEMENT	COMPONENT									Grand Total	
	III			II				I			
	STRATUM		Total	STRATUM				STR	Total		
	I	N		I-2	Q	R	T	W			
ANGULAR					3			3			3
CLEITHRUM		1	1	2	30	9		41	1	1	43
CORACOID					5			5			5
DENTARY					15	3		18			18
FRONTAL					4			4			4
HYOMANDIBULAR					8	2	1	11			11
INTEROPERCULUM					3	1		4			4
OPERCULUM					15	1	1	17	1	1	18
PHARYNGEAL PLATE					8	3		11			11
POSTCLEITHRUM					9	2		11			11
POSTTEMPORAL					3			3			3
PREOPERCULUM					1	17	6	24	2	2	26
QUADRATE					1			1			1
SCAPULA					4			4			4
SUBOPERCULUM		1	1		19			19			20
SUBOPERCULUM?	1	1	2								2
VERTEBRA	1		1		81	1		82			83
Grand Total	2	3	5	3	225	28	2	258	4	4	267

Two cleithra, one left and one right, exhibit clear or probable cut marks, and one postcleithrum is cut. These bits of evidence suggest that fish were beheaded on site as part of the food preparation process. Charring and discolouration were noted on 22 *Hiodon* elements, all of them cranial. This finding implies that fish heads were discarded in a fire before they were discarded in the cellar trash.

It appears that Goldeye were exploited as a food resource when floodwaters were receding in 1826. Damage to domestic livestock may have required that wild resources be taken to replace lost cattle, pigs and chickens. Thus, fish, in addition to ducks, geese and rabbits, appear in abundance in deposits associated with the flood and its aftermath. Because Goldeye spawn in turbid, slow-moving water following Spring breakup of lake and river ice, the abundance of Goldeye remains in specific strata may suggest that these strata were deposited in late Spring as floodwaters receded.

Sixty-one elements from fish of the Cyprinidae Order were recovered. Two of these elements were from the Genus *Catostomus* (suckers), suggesting that these fish were not an important food source. Fifty-seven elements were definitely attributed to the Genus *Ictalurus* (catfish), while two more were tentatively identified to that group. Catfish constitute the Family Ictaluridae, and, while a number of genera within this family are found in Manitoba, the two largest, i.e. those that would be useful to humans as food, are *Ictalurus nebulosus* (brown bullhead) and *Ictalurus punctatus* (channel catfish). The presence of numerous cranial and post-cranial elements indicates that whole fish were brought onto the site, and the presence of cut and/or charred elements indicates that these fish were food resources. Some of their remains were initially disposed of in a fire, but all remains, as food waste, were discarded in the cellar.

Over half (n=35) of the *Ictalurus* remains were found in Stratum Q, along with the *Hiodon* remains. All other recoveries of *Ictalurus* remains were small numbers in other strata of Components II, III and IV. No *Ictalurus* remains were recovered from Component I.

Table 42. 1988 Trench 5 Perciformes.

GENUS	COMPONENT																				Grand Total
	IV				III					II							I				
	STRA			Total	STRATUM				Total	STRATUM							ST	Total			
	C	F	H		G	G-2	I	N		Total	I-2	L	O	Q	Q, N, I	R			S	T	
APLODINOTUS	4	2	13	19	43	1	25	71	140	105	21	9	41	5	6	1	188	76	76	423	
STIZOSTEDION			11	11	5				5				153		8	1	162			178	
Grand Total	4	2	24	30	48	1	25	71	145	105	21	9	194	5	14	1	350	76	76	601	

Two genera within the family Perciformes are shown in Table 42. The Genus *Aplodinotus* belongs to the Family Sciaenidae and most likely denotes the Species *grunniens* (freshwater drum). The Genus *Stizostedion* belongs to the Family Percidae and most likely denotes the Species *vitreum* (walleye). *Aplodinotus* remains numbered 423, while those of *Stizostedion* numbered 178. The vertical distribution of the remains shows that *Aplodinotus* was found in modest numbers in Component I, but no *Stizostedion* were found there. In Component II, the numbers of elements from each genus were almost equal, although most *Aplodinotus* were found in Stratum I2 whereas most *Stizostedion*

were found in Stratum Q. Their different depositional contexts indicate that they were deposited separately. This observation implies that they were consumed at different times, which, in turn, implies that they were caught at different times. Stratum Q underlies Stratum I2, so the inference is made that *Stizostedion* were caught, consumed and discarded before *Aplodinotus*. *Aplodinotus* remains are abundant in three of four strata in Component III, but *Stizostedion* remains are virtually absent from the component. Stratum H of Component IV contains most of the few *Aplodinotus* and *Stizostedion* elements found here. A few *Aplodinotus* were found in Strata C and F as well.

*Stizostedion* normally live in lakes, but some move to rivers to spawn. This event takes place shortly after ice break-up when water is barely above freezing. Favoured locations are in areas of white water and rocky bottoms below impassible dams or falls, and spawning usually occurs at night (Scott and Crossman 1973:771). The location within the Red River Settlement that most closely fits this description is St. Andrew's rapids, now Lockport. *Aplodinotus* normally lives in large, shallow water bodies. Although it prefers clear water, it can survive well in highly turbid waters also. It occurs in shallow water and is a bottom feeder. Spawning occurs in summer, although the life cycle of *Aplodinotus* had not been well studied by 1973 (Scott and Crossman 1973:813-814). The presence in numbers of these two genera is therefore temporally separated because of their spawning and migration cycles. This temporal cycle is reflected in the sequential stratigraphic distribution of their remains. In addition, it is possible to infer that *Stizostedion* were probably taken at St. Andrew's rapids, while *Aplodinotus* could have been taken at or near the Red-Assiniboine junction.

All parts of the body of *Aplodinotus* were present in the deposits; therefore, whole fish likely were brought to the site. *Stizostedion*, however, were represented by far more vertebrae and far less cranial elements than were *Aplodinotus*. Vertebrae of the latter genus comprised 31% of all elements of that genus, whereas *Stizostedion* vertebra accounted for 72.5% of all *Stizostedion* remains. Durability may account for this discrepancy, but it is also highly likely that most walleye were beheaded and gutted where they were caught, and only the cleaned bodies were brought to the site for consumption.

Few butchering marks were observed on *Aplodinotus* remains. Cuts were observed on pectoral, anal and dorsal fin spines, a basipterygium, interhaemal spines (pterygiophores), and one hypural was chopped. Two supracleithra were cut as well, as were several pre- and post-abdominal vertebrae. The processing of these fish seems infrequently to have included beheading, and there are suggestions of filleting, tail removal, and evisceration. Very few remains were charred. *Stizostedion* remains showed a cut on a postcleithrum indicating beheading, and a few cuts on post-abdominal vertebrae indicated meat removal, either as a result of filleting or consumption. Only a few elements exhibited charring.

Fish remains provide an interesting glimpse of the events that took place between cellar construction and 1852.

Heavy emphasis was placed on fish in Component II, and this resource was also exploited to a slightly lesser extent in Component III. Goldeye and Drum, and to a lesser extent Walleye, were the preferred species. These fish appear to have been caught as they spawned, and, except for Walleye, they appear to have been brought whole to the site. Walleye, probably caught at St. Andrew's rapids, appear to have been cleaned and beheaded there and brought as finished carcasses to the site. Sturgeon, a great delicacy to

some, was virtually ignored. Although it is a cartilaginous fish, the scarcity of scutes, or dermal plates, implies either that sturgeon were skinned before being brought to the site or that sturgeon was infrequently consumed. Some fish remains were disposed of by burning them in the fire, but most were simply discarded into the cellar feature after consumption.

### Summary

The faunal remains provide a picture of food acquisition for the early and middle periods of the Settlement's existence. Birds were exploited for the entire period, but the initial emphasis on wild water birds (ducks and geese) was supplemented beginning in Component III with domestic and wild land birds (chickens, turkeys). Pigs were present in small numbers throughout the deposit, while cattle first appeared in Component II and sheep first appeared in Component III. Cattle still predominated over sheep in Component III, but by Component IV cattle remains far outnumbered sheep. All domestic mammals are represented as whole skeletons, that is, there appears to have been no selective transport of carcass parts. The implication of this finding is that animals were slaughtered and butchered close to the site. Pigs and sheep were butchered by knife, but cattle appear to have first been butchered with axe and knife. Later, sawing was added to the butchering process, and recognizable commercial beef cuts appear in the deposits. A range of quality characterized the cuts that were identified. Wild mammals, in the form of hares, were heavily utilized in Component II and moderately used in Component III. These animals appear to have been skinned and disarticulated at the wrist and ankle so as to leave the fore and hind extremities with the skin.

Faunal remains often are distributed differently among strata compared to artifacts. Stratum T, for example, contained a volume of window glass but virtually no faunal remains. Instead, Strata Q, R and U contained the bulk of the fauna from Component II. In Component III, Stratum G contained large amounts of artifact remains, but faunal remains were generally scarce. By contrast, Stratum I contained quantities of both artifacts and fauna. Stratum H of Component IV also contained large quantities of both artifacts and fauna.

Comment has already been made about the sequencing of *Aplodinotus* and *Stizostedion* acquisition and deposition. The other seasonal indicators in Component II are the water birds and the hares. The latter appear in greatest numbers in Strata R and U, while the former is most abundant in Stratum Q. This stratum contained an abundance of Goldeye remains, most of the catfish remains, and most walleye remains. The majority of Drum remains were found in Stratum I2. Spring and early summer appear to be represented by Stratum Q, while early summer and mid-summer appear to be represented by Strata R and I2 respectively. Wild waterfowl appear to have been taken throughout the spring and early summer. Wild remains were therefore clearly very important as revealed by depositional events in Component II.

Beavers, the *raison d'être* for the fur trade, appear not to have played a major role in the subsistence economy. Of the three beaver remains that were found, two came from Component I, a time when the cellar was used for storage and when the fur trade was still the dominant enterprise. The storage function of the cellar may have precluded abundant refuse deposition.

### The Sea of Bricks

### Artifacts

Trench 7 contained a short exposure of undisturbed strata at its south end. Materials recovered from Units N1001-1005 m have already been discussed with Stratum B artifacts. The remaining units in Trench 7 are discussed here. North of Unit N1005/W1017 m the

Table 43. 1988 Trench 7 Artifacts.

CATEGORY	EXCAVATION UNIT																Grand Total
	N1070/W1017	N1064/W1017	N1062/W1017	N1039/W1017	N1036/W1017	N1035/W1017	N1034/W1017	N1032/W1017	N1031/W1017	N1030/W1017	N1028/W1017	N1027/W1017	N1026/W1017	N1025/W1017	N1024/W1017	N1023/W1017	
ADORNMENT	5																5
ARCHITECTURAL OBJECT	1	7	18	24	1	29	139			21	24	38	50	30	28	14	1119
ARCHITECTURAL OBJECT?																	9
CLOTHING																	28
CLOTHING MANUFACTURE																	22
COMMUNICATION																	2
CONTAINER																	321
CONTAINER?																	19
DETRITUS																	344
FLORA																	7
FOOD PROCUREMENT																	5
HOUSEWARES																	3
NATURAL OBJECT-MODIFIED																	236
NATURAL OBJECT-UNMODIFIED																	38
RECREATION																	88
TRANSPORTATION																	3
Grand Total	129	356	126	55	24	126	124	160	91	15	62	14	55	41	24	114	2259

stratification was complex and obviously disturbed. Differentiation of the fine stratification was difficult and at times impossible. It was clear, though, that the disturbance through which the trench passed was post-fur trade, but it appeared to belong to the nineteenth century. The distinguishing feature of these excavation units was the presence of a vast jumble of bricks, especially in Units N1011-1018 m, and these artifacts provided the name "Sea of Bricks." The ubiquitously confused deposits in the majority of



The nails are shown in Table 45. By far the majority are sheet cut (434 of 616), with an additional 22 that were thought to be sheet cut. There were 148 nails for which the manufacturing technique could not be determined. Three were hand wrought and nine were wire cut. Units at the south end of the trench tended to contain higher numbers of nails than other units, although N1032 m, again, contained the largest single number (n=79). Units N1005-N1008 m were noteworthy because the number of sheet cut nails in these units is fewer than the number of undetermined nails, whereas the situation was the reverse in all other units. This observation suggests that nails may have been more deformed and broken in these four southern units, either during construction, modification or dismantling of a building at this location. Two of the nine wire nails were found in the two southernmost units, together with the large proportions of undetermined nails. In contrast, five wire nails were found in the two most northerly excavation units.

Table 45. 1988 Trench 7 Nails.

MANUFACTURE	EXCAVATION UNIT															Grand Total														
	N1005/W1017	N1006/W1017	N1007/W1017	N1008/W1017	N1009/W1017	N1010/W1017	N1011/W1017	N1012/W1017	N1013/W1017	N1014/W1017	N1015/W1017	N1016/W1017	N1017/W1017	N1018/W1017	N1019/W1017		N1020/W1017	N1021/W1017	N1022/W1017	N1023/W1017	N1024/W1017	N1025/W1017	N1026/W1017	N1027/W1017	N1028/W1017	N1030/W1017	N1032/W1017	N1034/W1017	N1039/W1017	N1064/W1017
HAND WROUGHT																														3
SHEET CUT	6	18		16	5	3	40	38	10	22	5	7	5	6	7	15	16	6	20	16	27	3	4	17	16	76	15	14	1	434
SHEET CUT?	3			12			1	2								1	1								3					22
UNDETERMINED	24	77	5	17	2		9						1		5	1	6													148
WIRE	1	1					1							1													2	3		9
Grand Total	34	96	5	45	7		50	41	10	23	5	7	6	7	12	17	23	6	20	16	27	3	4	17	16	79	15	17	5	616

Fourteen wire fragments also belong to the Hardware sub-category. Their recovery was only occasional, but the presence of drawn wire made of ferrous metal places this deposit at a later time than both Stratum B and the cellar feature.

Further consideration of the Hardware sub-category in Table 47 reveals that all other artifact categories appear in very small numbers. An emphasis seems apparent, though, in heavy construction (e.g. spikes, bolts, washers, nuts) that likely involved wooden timbers. As well, the presence of rivets, a pipe and a pipe coupling suggest that plumbing may have been part of a building.

The Structure sub-category contains a deceptively small number of artifacts (n=214). The "Sea of Bricks" appellation seems unwarranted by the number of bricks and fragments reported in Table 44. This small number is accounted for by the decision that was made during excavation not to remove bricks unless they bore some useful information or would provide useful samples. The remainder were drawn and photographed in situ after excavation, then simply removed from the unit.

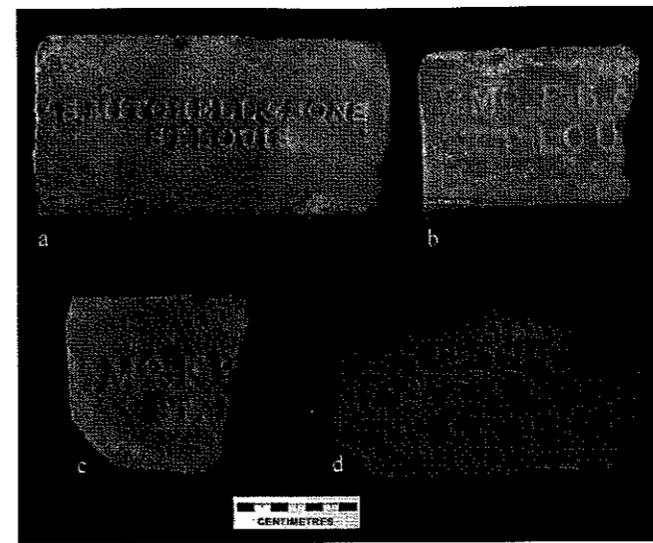


Figure 35: Bricks with manufacturers' marks: a) "S. Mitchell & Sons, St. Louis," b, c) "M.O.F.B." over "ST. LOU," d) "ST. LOUIS" over "V.&F.B. CO" over "STAR" (flanked by crosses).

undoubtedly a "B". These bricks appear to have come from the same company. The fourth inscription, found on an orange brick in N1064 m, reads "ST. LOUIS" on the first line, "V.&F.B. CO" on the second line, and on the third line a symbol like an Iron Cross at each end of the word "STAR" (Fig. 35d).

Test excavations by Quaternary Consultants also found similar brick fragments in this area. One brick fragment exhibited "...Louis", "...F.B. CO", and "...DARD" on one surface. The brick was thought to come from either a brick manufacturer in St. Louis or a "St. Louis Standard" manufacturer in California (Kroker and Goundry 1993a:16).

Research conducted at the Missouri Historical Society library indicated that S. Mitchell and Sons appeared in the St. Louis City Directory between 1881 and 1886. In 1887, the company changed its name to the Mitchell Clay Manufacturing Company (Stratman 2003:pers. comm.). A company named The Missouri Fire Brick and Clay Company was listed in the St. Louis City Directory from 1883 to 1887. In 1888, it changed its name to The Missouri Fire Brick Company (Stratman 2003:pers. comm.). This company is likely the one that produced the bricks impressed with "MO.F.B.&" and "Mo.F.P." where the corner of the "B" has been broken off, leaving what appears as a "P". No references were found to a company that might be associated with the "ST. LOUIS V.&F.B. CO", and no speculation was offered about the meaning of the "V" (Stratman 2003:pers. comm.). It is the author's suspicion that the "V" stands for "vitreous" and that the company was likely short-lived.

The evidence from the bricks indicates that the building in which they were used was built between 1883 and 1887. These bricks seem too recent to have been used in McLane's mill, but they could have been part of the HBC mill if it were an expansion of the McLane mill or if it were a different building altogether. An expansion or a different

The bricks that were retained included four with manufacturers' marks. All marks were molded inscriptions, and all indicated that their origin was in St. Louis, Missouri. One inscription named the company "S. Mitchell & Sons, St. Louis" (Fig. 35a), and the orange brick bearing this inscription was found in an ash deposit in N1006 m. Two other brick fragments, one from N1016 m and the other from N1024 m, bore the inscriptions "MO.F.B.&" above the inscription "ST. LOU" and "Mo.F.P." above "ST.L" respectively (Fig. 35b,c). Both bricks were orange, and the former was recovered in a stratum containing ash, light brown soil, and dark brown soil. The latter inscription was clearly truncated by the break in the brick, and the "P" was

building might explain why Trench 7 does not appear to intersect McLane's mill. Another explanation for the location of the bricks is their having been removed and discarded after the mill (or mills) were demolished. Removal and discard of the bricks would explain their location away from the recorded mill location(s), and it would explain the jumbled orientations of the bricks.

Six of the eight chinking fragments were recovered from N1012 and south. The other two were found in N1020 m and N1032 m. The northern half of the trench lacked chinking. Both fragments from N1008 m were charred, and one of them also contained floral material. The chinking fragment from N1009 m contained a floral impression, and the one from N1020 m bore straw impressions. Why chinking should be present in these disturbed deposits is difficult to surmise. These artifacts could be intrusive from earlier fur trade deposits that became mixed with the later material, or they could have been associated with a building that also included the fire bricks.

The single piece of concrete can be attributed to the later railway period. Removal of the railway overburden along the trench was not perfect, and the intrusion of modern construction material into the surface of the disturbed strata does not present an interpretive problem.

Mortar, on the other hand, was abundant and was found throughout the disturbed strata. The southern units (N1006 m, N1008-1010) m contained 63 of the 141 mortar fragments, while Unit N1026 m contained 16 and N1032 m and N1034 m contained 10 and 11 respectively. Thus there appear to be two concentrations of mortar, one in the south end of the trench and a smaller one in the middle. That mortar should be found in abundance is not a surprise considering the large quantity of bricks and fragments that were exposed.

Eight plaster fragments were found in units scattered along the trench. No pattern or association appears in their distribution, and their scarcity suggests that finishing walls with this material was not a common practice in the place and time represented by the building in the sea of bricks.

Tarpaper was found only in N1026 m where 10 fragments were recovered. Clearly used in post-fur trade construction, this finding is consistent with the amount of mortar that was also found in the same unit.

Table 46 shows the Fastener and Footwear sub-categories of Clothing. Interestingly, neither of these sub-categories was found in the north half of the trench. The marginal totals show that, of 28

SUB-CATEGORY	OBJECT	OBJECT TYPE	EXCAVATION UNIT							Grand Total		
			N1005/W1017	N1006/W1017	N1012/W1017	N1017/W1017	N1020/W1017	N1021/W1017	N1023/W1017		N1025/W1017	N1027/W1017
FASTENER	BELT	(blank)								1	1	
	BELT Total									1	1	
	BUCKLE	(blank)			1			1	1		3	
	BUCKLE Total				1			1	1		3	
	BUTTON	SHANK			1		1	1				3
		VERTICAL		1	1		1			1		4
BUTTON Total			1	1	1	1	1		1		7	
FASTENER Total			1	1	2	1	1	2	1	1	11	
FOOTWEAR	SHOE	(blank)		2				1	1		13	
	SHOE Total			2				1	1		13	
FOOTWEAR Total				2				1	1		13	
Grand Total			1	3	2	1	1	3	2	1	14	

artifacts in this category, 11 were Fasteners and 17 were footwear. While the Fasteners were distributed in small numbers throughout the southern units, 13 of the 17 Footwear artifacts came from N1027 m.

A brown leather belt fragment was found in N1027 m. One ferrous metal buckle frame was found in each of N1012 m, N1021 m and N1023 m (Fig. 36a, b, c).

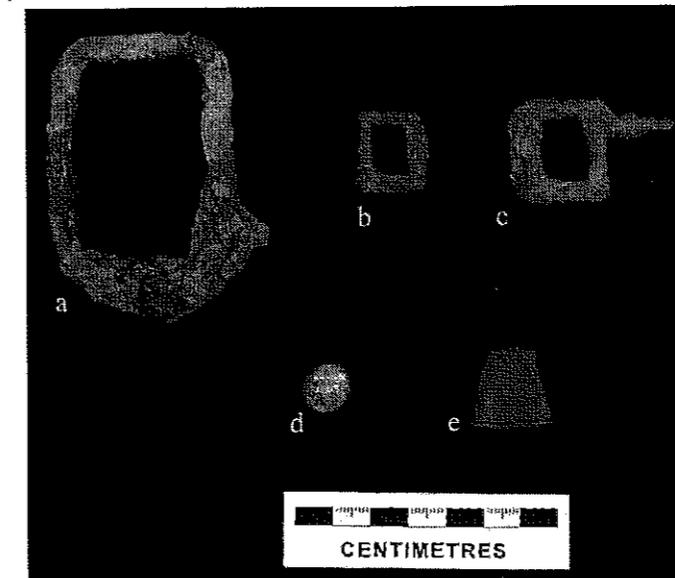


Figure 36: Clothing artifacts: a, b, c) ferrous metal buckle frames, d) brass button, e) thimble.

Three buttons with shank fasteners were also found, a ferrous metal one from N1012 m, a brass one from N1020 m and a second brass one from N1021 m. The artifact from N1020 m bore a stamped design (Fig. 36d). Four buttons that were attached by means of four vertical holes in a recessed center were also found, one each in N1005 m, N1006 m, N1017 m and N1025 m. One was made of brass, one of ferrous metal, one of shell and one of glass. Glass buttons became common after the 1840s and were listed in HBC inventories after 1880 (Deck and Ward 1999: 60). The clothing fasteners suggest that buttons and belts were being broken, torn off, and lost within a restricted area that included the southern 22 metres of Trench 7.

Footwear was found in Units N1006 m, N1021 m, N1023 m and N1027 m. The southernmost unit contained two fragments of molded rubber sole. Unit N1021 m contained a fragment of black leather upper with eyelets for laces. A black leather heel fragment, including nails, was found in N1023 m, and 13 fragments of black heel, shank and upper were found in N1027 m. At least two shoes are represented in these fragments. The southern shoe appears to be relatively modern and could be an intrusion. The black leather shoe fragments further to the north could belong to one or several shoes, and they could belong to a wide range of time. Since this style of shoe or boot post-dates the Napoleonic Wars, these fragments could have been deposited at any time during or after the Red River Settlement's existence.

Artifacts associated with clothing manufacture are presented in Table 47. Of 22 clothing manufacture artifacts, 20 are implements that include pins and a thimble, while there are two pieces of cloth. All artifacts are found in N1021 m and south, with the largest single number found in N1011 m.

Straight pins numbered 19, of which 9 were found in N1011 m and four were found in N1021 m. Most pins were made of ferrous metal, but two identified as copper were found in N1020 m and N1021 m. The lone thimble was also found in N1011 m. It was made of brass, had a waffle-weave surface, and bore the inscription "Reward for Merit"

stamped along the rim (Fig. 36e). The pins and thimble from N1011 m were all found in proximity to one another and may represent a lost or discarded sewing kit.

The two items of material consisted of a felt fragment and a piece of cotton thread. The felt was recovered from N1006 m, while the thread was found in N1015 m.

Only two items belonged to the Communication category. A newspaper fragment wrapped in metallic foil was recovered from N1010 m and is clearly an intrusion. A graphite fragment from a pencil was found in N1032 m. This artifact may also be an intrusion, given that slate pencils appear to have been used at the school on Donald Gunn's property in the 1850's but appear to have become rare by the late nineteenth century (Deck and Ward 1999:74-75; Monks 1999:105).

Table 47. 1988 Trench 7 Clothing Manufacture.

SUB-CATEGORY	OBJECT	EXCAVATION UNIT										Grand Total			
		N1006/W1017	N1010/W1017	N1011/W1017	N1013/W1017	N1015/W1017	N1019/W1017	N1020/W1017	N1021/W1017	N1022/W1017	N1024/W1017				
IMPLEMENT	PIN		1	9	2		2	1	4	19					
	THIMBLE			1						1					
IMPLEMENT Total			1	10	2		2	1	4	20					
MATERIAL	FABRIC					1									1
	FELT	1													1
MATERIAL Total		1				1									2
Grand Total			1	10	2	1	2	1	4	22					

The Containers are presented in Table 48 by Material Type, Sub-Category and Object Type according to their excavation unit. Glass container fragments numbered 203 while Earthenware containers numbered 114. The remaining materials included one aluminum fragment, one cotton-wrapping fragment, and two red earthenware fragments. Most units contained some container fragments, but those with the highest numbers were N1006 m and N1032 m, with 53 and 47 artifacts respectively. N1005 m contained 29 container fragments, N1028 m contained 25, and N1011 m contained 24. A substantial number of ceramic and glass containers are thus represented, and they appear to be clustered around the south end of the trench and around N1028-1032 m.

The aluminum foil fragment was found in N1062 m and is clearly an intrusion. The cotton wrapping fragment was found in N1017 m and was made of brown cloth, the yarn of which was spun, then woven.

The Earthenware artifacts consisted of 88 definite Dinnerware artifacts, 13 suspected Dinnerware artifacts, eight Storage artifacts, and five artifacts of Undetermined sub-category. Of the 101 known and suspected Dinnerware artifacts, 46 were known or

Table 48. 1988 Trench 7 Containers.

MATERIAL	SUB-CATEGORY	OBJECT TYPE	EXCAVATION UNIT															Grand Total				
			N1005/W1017	N1006/W1017	N1007/W1017	N1008/W1017	N1009/W1017	N1010/W1017	N1011/W1017	N1012/W1017	N1013/W1017	N1014/W1017	N1015/W1017	N1016/W1017	N1017/W1017	N1018/W1017	N1019/W1017					
ALUMINIUM?	COOKING	FOIL																				
	COOKING Total																					
ALUMINIUM? Total																						
COTTON	WRAPPING	UNDETERMINED												1								1
	WRAPPING Total												1								1	
COTTON Total													1								1	

SUB-CATEGORY	OBJECT	EXCAVATION UNIT															Grand Total							
		N1005/W1017	N1006/W1017	N1007/W1017	N1008/W1017	N1009/W1017	N1010/W1017	N1011/W1017	N1012/W1017	N1013/W1017	N1014/W1017	N1015/W1017	N1016/W1017	N1017/W1017	N1018/W1017	N1019/W1017								
EARTHENWARE	DINNERWARE	CUP																					1	
		CUP?																						3
		PLATE																						5
		PLATE?	7																					34
		PLATTER?																						4
	UNDETERMINED	4	2																				41	
	DINNERWARE Total		4	2																				88
	DINNERWARE?	PLATE																						1
		PLATE?																						6
		UNDETERMINED	1	3																				6
	DINNERWARE? Total		1	3																				13
	STORAGE	BOTTLE																						2
		BOTTLE?																						5
EWER?																							1	
STORAGE Total																							8	
UNDETERMINED	UNDETERMINED																						4	
	WASH BASIN?																						1	
UNDETERMINED Total																							5	
EARTHENWARE Total		9	14																				114	
GLASS)	DINNERWARE?	PLATE?																					1	
		DINNERWARE? Total																						1
	STORAGE	BOTTLE		1	3																			23
		STORAGE (continued)	BOTTLE?	3	8																			33
			JAR?	4	1																			
	UNDETERMINED	1	2																				9	
	STORAGE Total		9	13																				71
	STORAGE?	BOTTLE?		6	6																			43
		UNDETERMINED	UNDETERMINED	1																				37
			STORAGE? Total		7	6																		
	UNDETERMINED	UNDETERMINED		4	20																			50
		UNDETERMINED Total		4	20																			
	PHARMACEUTICAL	TEST TUBE?																						1
		PHARMACEUTICAL Total																						
	GLASS Total			20																				203
	RED EARTHENWARE	UNDETERMINED																						2
		UNDETERMINED Total																						
	RED EARTHENWARE Total																							2
Grand Total			29																				321	

suspected plate fragments. Four fragments were from cups and four were from platters; the other fragments were of unknown type. Again, major and minor clusters of Dinnerware ceramics are evident at the south end of the Trench and around N1032.

Earthenware storage vessels were represented by eight fragments, seven from known or suspected bottles, and one from a suspected ewer or pitcher. Four of the known or suspected bottle fragments were found in N1005. Two of these fragments were parts of

the same bottle that were glued back together. These fragments were gray-brown, wheel-thrown, and salt-glazed. They bore the manufacturer's mark of Doulton Lambeth and are dated to 1858 or later (Fig. 37a). The two other fragments were tan-brown and re-fit to each other. These two artifacts do not belong to the first two because they are of different colour and they were found in separate strata. The remaining suspected bottle fragments were found in N1011, and they consist of two body sherds and one lip sherd, all brown and salt-glazed. In all likelihood, they belong to the same artifact, but the intervening pieces are missing. The ewer or pitcher lip fragment was found in N1006 (Fig. 37b). It is made of white earthenware with a brown transfer print with a lace-like border that was identified

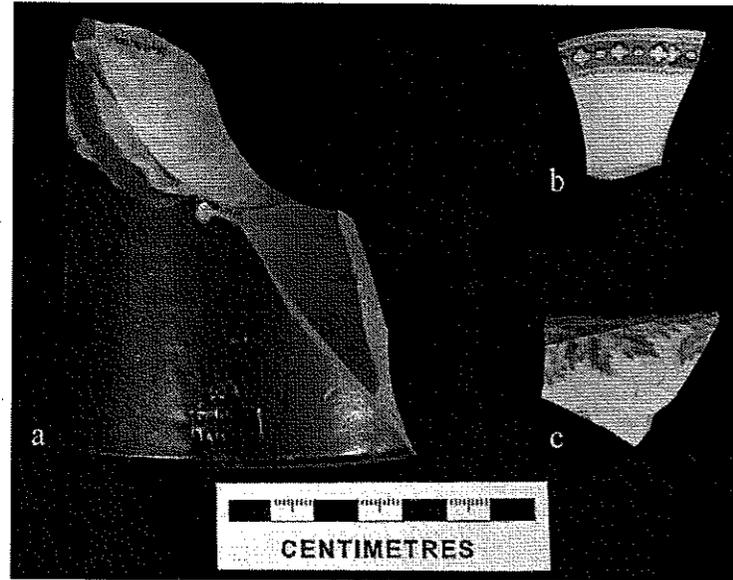


Figure 37: Earthenware fragments: a) bottle, b) ewer/pitcher, c) washbasin.

A suspected glass plate was found in N1021 m. It was blue and contained air bubbles. The inclusion of air bubbles indicates poor manufacturing technology, so the artifact may have been manufactured at an early date and may not have been a prized object.

Glass storage vessels numbered 71, of which 56 were known or suspected bottle fragments. Units N1006 m and N1028 m each contained 13 fragments, and N1005 m contained nine. This distribution mirrors that of other artifacts, as already noted above. Consideration of the glass storage containers showed that 34 known and suspected bottles were mold blown. Five may have been free blown, and the remainder bore no evidence of manufacturing technology. Clear glass bottles outnumbered green bottles 38 to 27. This shift in frequency may derive from at least two sources. One possible source is the improvement of glass manufacturing technology as the nineteenth century progressed. Impurities could be bleached out of glass more easily, so clear glass could be produced in abundance at this time. Another source of this shift is the function of the bottles. Green bottles are usually associated with liquor, but clear bottles may have contained those liquids or they may have contained other substances more closely associated with the function of the building, the remains of which appear in Trench 7.

as the "Hawthorn" pattern of Copeland and Spode, made around 1873 (Sussman 1979:125, Plate 134)

A washbasin fragment was found in N1024 m. It consisted of a body fragment and bore a blue transfer printed pattern, again "Hawthorn" of Copeland and Spode (Fig. 37c).

Glass container fragments numbered 203 and were found in greatest abundance in N1005 m, N1006 m, N1028 m and N1032 m. These four units accounted for 121 artifacts. The southern cluster of artifacts numbered 59, while 62 were found in the northern cluster.

The glass jar fragments were found in N1005 m and N1032 m. Four were recovered from the southern unit, and they appeared to belong to the same artifact. All were clear, they comprised parts of the body and lip of a jar, and all were mold-blown. The two fragments from N1032 m were also mold-blown and clear, and they were parts of the lip, shoulder and body of a suspected jar.

An artifact suspected of being a test tube was found in N1028 m. It consisted of a curved fragment of thin, clear glass that appeared to belong to a narrow, parallel-sided container.

Two red earthenware container fragments were recovered, one each from N1011 m and N1012 m. The portion of the original artifact could not be determined for one fragment. It was molded, fired and glazed, and it was brown. The other fragment exhibited a silver glaze and appeared to be the lip or rim fragment.

The containers indicate that food consumption likely took place in the structure that formerly stood above Trench 7. The complete absence of faunal remains and food preparation artifacts suggests, however, that food procurement and preparation occurred elsewhere and that a domestic structure is not represented here. Two foci of such activity are present, a major one at the south end of the trench and a secondary one to each side of N1030. Recording activity is seen in the inkwells. The inkwells and the "Hawthorn" pattern of the ewer/pitcher and basin provide useful chronological information for the deposits.

Detritus consisted of 344 artifacts, 283 of which were ferrous metal scrap. Units N1005-1020 m contained 243 of these ferrous metal fragments. Thus the south end of the trench contained almost all such scrap. Lead scrap was uncommon, but six of the eight pieces were also found south of N1020 m. Leather scrap accounted for 11 fragments, and these were found in N1016 m (n=7), N1020 m and N1022 m (n=1 each), and N1032 m (n=2). The fragments in N1020 m and N1032 m were black, and it will be recalled that black shoe fragments were recovered in N1021 m and N1023 m. Thus the scrap fragment from N1020 m may in fact be part of that shoe. Also, black shoe fragments were found in N1027 m, so the fragment from N1032 m may belong to that shoe. The fragments from N1016 m and N1022 m are both brown, and the latter is thin and strap-like.

Seven pieces of rubberized canvas were found, six in N1023 m and the other in N1024 m. This advanced technology may not belong to the nineteenth century, oiled canvas being more common for waterproofing during that period. Rubber laminated onto canvas is likely a twentieth century development, so intrusion of this material into earlier deposits is a possibility.

Within the Flora category 17 items were recovered, at least eight of which were determined to be non-cultural. Six wood fragments and two seeds were thought or known to be culturally derived, and one seed could not be assigned as cultural or non-cultural. All six cultural wood fragments were found in N1006 m. Five of them were charred, with one of them having been cut and four having been broken. The sixth piece was simply broken, but its association with the other five led to its inclusion here. One seed was found in N1006 m and two were found in N1034 m. No identification of these seeds has been accomplished.

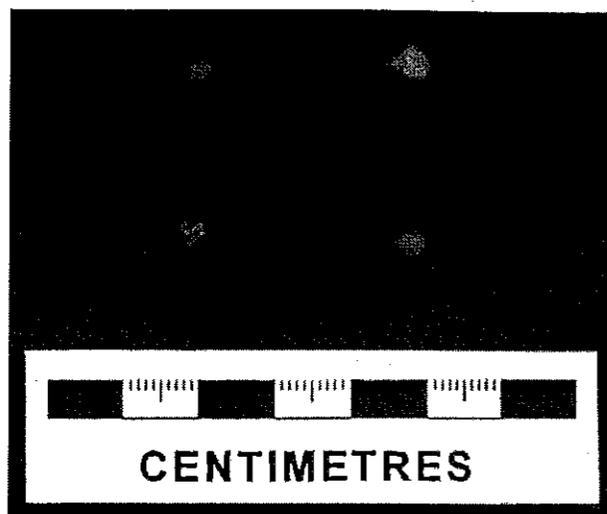


Figure 38: Lead shot.

Five food procurement artifacts were recovered, all of them small, spherical lead shot (Fig. 38). Two were chipped and three were flattened on one side. These artifacts may have been defective upon manufacture and so discarded, but the ease of re-casting lead and the flattened surfaces on three of them suggest that at least three of them may have been damaged in use. All five were found in the south end of the trench.

The Housewares category is represented by three fragments of a paintbrush that were found in N1008 m. These artifact fragments imply a different kind of surface finish for interior and/or exterior walls, compared to the fur trade era. The type of surface that usually requires paint and paintbrushes is wood, whereas walls were commonly covered with chinking, mortar and plaster during the fur trade.

Table 49. 1988 Trench 7 Natural Object Modified.

OBJECT	EXCAVATION UNIT										Grand Total
	N1005/W1017	N1006/W1017	N1008/W1017	N1009/W1017	N1010/W1017	N1011/W1017	N1014/W1017	N1018/W1017	N1032/W1017	N1062/W1017	
CALICHE					3						3
CHARCOAL			2	50		1			2		55
CHARRED WOOD						1					1
CLINKER	1	25	2		3		11	100	2		144
COAL				23							23
FIRE CRACKED ROCK								1			1
SAMPLE	1		1	5		1					8
UNDETERMINED								1			1
Grand Total	2	25	1	4	81	3	1	2	13	102	236

The Natural Object Modified category is presented by Object Name and excavation unit in Table 49. Of 236 such artifacts, 144 were clinkers. Their presence in such numbers requires careful consideration because they are produced when coal is burned, e.g. in steam boilers. These artifacts could be intrusive from the railway overburden, or they could be the products of a steam grist mill that is thought to have stood on or near the site. Charcoal is the next most abundant artifact (n=55), while coal accounted for 23 artifacts. Caliche (calcareous lumps of soil), burned wood, firecracked rock, samples and unidentifiable materials comprise small quantities of the remaining artifacts.

The distribution of artifacts by excavation unit is interesting. Unit N1062 m contained 100 clinkers, over two-thirds of all clinkers, and two charcoal fragments. Unit N1010 m contained 81 artifacts, but none were clinkers. Instead, all the coal (n=23) and 50 of 55 charcoal fragments were found here. N1006 produced 25 clinkers. A pattern that may be drawn from the distributions of these materials is one where coal is found close to

the Assiniboine River, along with charcoal, while the product of coal burning is found in abundance away from the river, as if it had been discarded behind a building.

The Housewares category is represented by three fragments of a paintbrush that were found in N1008 m. These artifact fragments imply a different kind of surface finish for interior and/or exterior walls, compared to the fur trade era. The type of surface that usually requires paint and paintbrushes is wood, whereas walls were commonly covered with chinking, mortar and plaster during the fur trade.

The Recreation category is shown in Table 50. It consists entirely of clay smoking pipe fragments, all of them but one completely plain. There were 20 bowl fragments, 49 stem fragments, and 17 fragments that included parts of the stem, bowl and spur. Of the total 88 fragments, 31 were found in N1019 m, including all 17 of the stem, bowl and spur fragments. Several pipe fragments were found in a number of other units, and all units containing pipe fragments were south of N1040 m. The decorated fragment (Fig. 39a) was one of four found in N1023 m. The artifact was a bowl fragment on which the decoration was difficult to identify but appears to floral.

Table 50. 1988 Trench 7 Smoking Pipes.

OBJECT PART	EXCAVATION UNIT										Grand Total											
	N1005/W1017	N1006/W1017	N1007/W1017	N1008/W1017	N1009/W1017	N1010/W1017	N1011/W1017	N1012/W1017	N1013/W1017	N1014/W1017		N1015/W1017	N1017/W1017	N1018/W1017	N1019/W1017	N1020/W1017	N1021/W1017	N1023/W1017	N1025/W1017	N1028/W1017	N1030/W1017	
BOWL				1	2		3	1	1			1		6	2					3	20	
SPUR				1																	1	
STEM	1	3	1	2		3	3	3		3	3	1	1	8	6	1	4	1	2	2	1	49
STEM;BOWL										1											1	
STEM;BOWL;SPUR														17							17	
Grand Total	1	3	1	4	2	3	6	4	1	3	4	2	1	31	8	1	4	1	2	5	1	88

The Transportation category consisted of two pieces of asphalt bearing yellow paint and a single horseshoe. The asphalt was found in N1062 m, while the horseshoe was found in N1064 m (Fig. 39b). The former fragments can only be explained as intrusions from the 20th century overburden. The horseshoe appears to be hand-made.

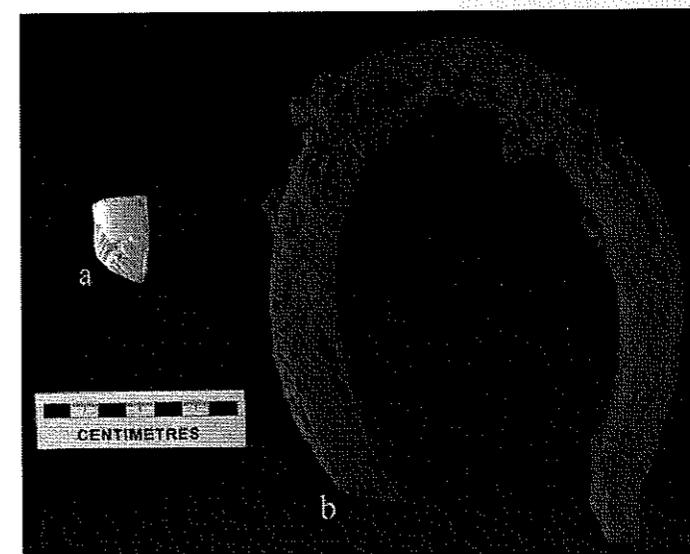


Figure 39: a) Decorated smoking pipe, b) horseshoe.

It may be associated with the other late nineteenth century deposits, or it may have been introduced from earlier fur trade deposits.

### Fauna

The Trench 7 fauna is shown in Table 51. No fauna was recovered north of N1039, while, with several notable exceptions, the units south of N1039 m contained relatively few bones. The exceptions are N1008 m, N1011 m, N1012 m and N1019 m, which, between them, contain 231 of the 365 faunal elements. All other units that contain faunal remains contributed less than 20 elements or fragments. The abundance of faunal remains in the southern units is generally consistent with the major clustering of artifacts in that area as well, but there was not an obvious secondary cluster of productive units centered around N1032. Only Units N1028 and N1030 contained slightly elevated numbers of faunal remains compared to those units near them. In all, 305 faunal remains were found in Units N1005-1020.

CLASS	EXCAVATION UNIT																		Grand Total							
	N1005/W1017	N1006/W1017	N1008/W1017	N1009/W1017	N1010/W1017	N1011/W1017	N1012/W1017	N1013/W1017	N1014/W1017	N1015/W1017	N1016/W1017	N1017/W1016	N1017/W1017	N1018/W1017	N1019/W1017	N1020/W1017	N1021/W1017	N1023/W1017		N1024/W1017	N1027/W1017	N1028/W1017	N1030/W1017	N1032/W1017	N1036/W1017	N1039/W1017
AVES			1	1	1		3		6																	12
AVES?				2																						2
BIVALVA						2	1		1									6	4			1				15
MAMMALIA	14	17	13	7		52	23	11		9	1		2	1	28	2	5	3		1	11	13	4	1	1	219
MAMMALIA?		1	6			1																				8
OSTICHTHYS			5		6	8		5			1				71											96
OSTICHTHYS?			2																							2
UNDETERMINED			4																							4
(blank)			1	1		3	1	1																		7
Grand Total	14	18	32	11	1	63	37	12	12	9	1	1	2	1	99	2	5	9	4	1	11	14	4	1	1	365

The most abundant class of remains was mammals, which contributed 227 known or suspected elements and fragments to the total assemblage. Fish contributed 98 known or suspected fragments, birds accounted for only 14 elements, and 15 bivalve shells were recovered. Only 11 elements and fragments could not be identified to class. Mammals, therefore, appear to be the predominant class of remains, with a modest contribution from fish and minor contributions from birds and molluscs. Considering the volume of earth moved in Trench 7, the rate of faunal recovery was extremely low.

The Aves remains consisted of 12 fragments, six of which were eggshell, all from N1014 m, and six skeletal fragments, three from N1012 m and one each from N1008-1010 m. The element from N1008 m was identified as a swan (*Olor sp.*) vertebra, while one of the remains from N1012 m was identified as a chicken's (*Gallus sp.*) right coracoid. The consumption of eggs as food mirrors the situation in the later two components of Trench 5.

N1009 m contained an unidentified parietal fragment, and N1012 contained two furculum fragments that were both attributed to a small/medium sized unidentified bird.

Ten of the 15 bivalve fragments belonged to the Order Unionoida and the Family Unionidae, but the remaining bivalve fragments could not be assigned to any Order or Family. The Unionidae are probably Genus *Lampsilis*, a freshwater mussel common to the Red and Assiniboine rivers.

The vast majority of the mammalian remains shown in Table 52 are unidentifiable to either Order or Family. This heavy preponderance of unidentifiable bone suggests that a considerable amount of breakage occurred to mammal bone in Trench 7. Indeed, several excavators noted that the faunal remains in their units were highly fragmented, e.g. N1011 m. Thus fragmentation, rather than increased amounts of deposition, may account for much of the apparent mammalian abundance.

ORDER	FAMILY	EXCAVATION UNIT																		Grand Total						
		N1005/W1017	N1006/W1017	N1008/W1017	N1009/W1017	N1011/W1017	N1012/W1017	N1013/W1017	N1015/W1017	N1016/W1017	N1017/W1017	N1018/W1017	N1019/W1017	N1020/W1017	N1021/W1017	N1023/W1017	N1027/W1017	N1028/W1017	N1030/W1017		N1032/W1017	N1036/W1017	N1039/W1017			
ARTIODACTYLA	BOVIDAE			1		1																				20
	SUIDAE					1				1																4
	(blank)									1		1												1		5
ARTIODACTYLA Total				1	1	1		1	1	3			1	9		2	2		5	1		1			29	
CARNIVORA	(blank)										1															1
CARNIVORA Total											1															1
LAGOMORPHA	LEPORIDAE									1	1															2
LAGOMORPHA Total										1	1															2
PERRISODACTYLA	EQUIDAE																									1
PERRISODACTYLA Total																										1
(blank)	(blank)	14	17	12	5	49	22	10	6	1	2		18	2	3	1	1	6	12	4					186	
(blank) Total		14	17	12	5	49	22	10	6	1	2		18	2	3	1	1	6	12	4					186	
Grand Total		14	17	13	7	52	23	11	9	1	2	1	28	2	5	3	1	11	13	4	1	1			219	

Among the firmly identified remains, Artiodactyls are most abundant. Bovidae numbered 20 fragments, while Suidae numbered four. None of the Bovidae was unambiguously identified as *Bison*: instead, 13 were identified as *Bison/Bos*, six were identified as *Bos*, and one was thought to be *Bos*. There is no clear emphasis, therefore, on large wild ungulates; only domestic ungulates could be clearly identified. Although the sample is small, all body parts of these animals appear to be represented. The distribution between units did not reveal any clear pattern, other than to identify N1019 m as the unit with the greatest number of remains. Among those elements showing butchering marks, five elements were chopped: a left astragalus, a rib, an unfused proximal epiphysis of a tibia, the neural spine from a 7th cervical vertebra and a lumbar centrum with unfused epiphyses. A neural spine from a 1st thoracic vertebra had been both chopped and cut. Three elements were cut, a calcaneum, a rib and a 1st thoracic vertebra fragment. An innominate fragment consisting of the acetabulum and pubis had been sawn, chopped and cut (Fig. 40a). This butchering pattern produces the commercial beef cut known as a rump

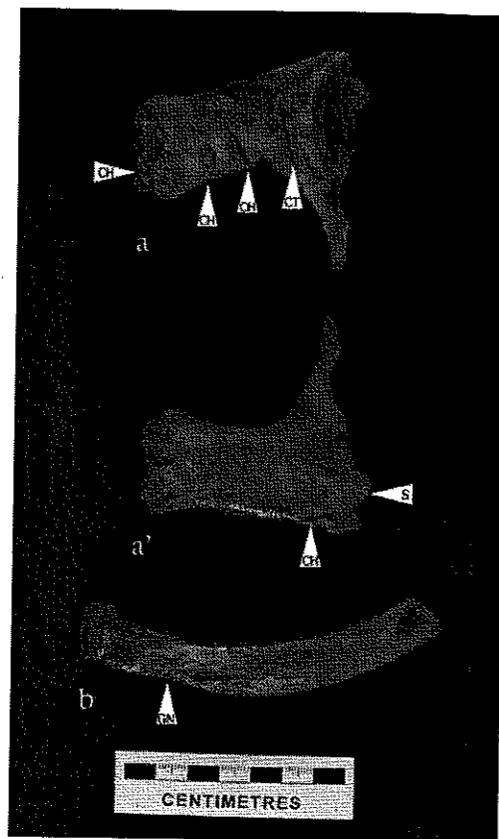


Figure 40: a) cut, chopped and sawn innominate, b) gnawed equid rib.

roast. A proximal tibia minus the proximal epiphysis exhibited both sawing and a spiral fracture. A diaphysis fragment of a tibia also exhibited a spiral fracture. The absence of fused epiphyses indicates that sub-adult animals were often preferred. Axe butchery was used, apparently to remove lower limbs and the head and to divide the carcass into front and hind portions. Sawing was used in secondary butchering to produce cuts that are still commercially available. Cut marks likely resulted from preparation and consumption.

The Suidae (pig) remains consisted of four canine teeth, three incisor teeth, one distal humerus, without the epiphysis, that had been both cut and spiral fractured, and a proximal, longitudinally split fragment of a third metacarpal. No butchering pattern emerged from these remains, although the head and forelimb of pig appear to be represented. The humerus fragment suggests, as with Bovidae, that sub-adult animals may have been preferred.

One carnivore element was recovered, the crown and vestigial root of a lower right deciduous canine tooth.

The two Lagomorph (hare) remains consist of a right third metatarsal and rear proximal phalanx. These lower extremity elements bring to mind the abundance of such remains in Trench 5.

One element from a horse was also recovered, a proximal fragment of a right rib (Fig. 40b). Interestingly, this fragment had been gnawed and also broken when it was fresh. Consumption of horse may be indicated.

Only one fish element could be identified to Family and Genus, a catfish (*Ictalurus sp.*) mandible. Scales were the most common element, numbering 90 of the 96 recovered fish elements. Unit N1019 m contained 71 of these elements, and all others were found between that unit and N1011 m. Two scales could be identified as ctenoid, while 10 were cycloid. One possible spine and several unidentifiable bits completed the assemblage. The fish remains are notable for their relative absence, especially compared to the Trench 5 deposits, and for the relative abundance of scales in comparison to internal skeletal elements. These remains appear also to have a very limited spatial distribution.

The faunal assemblage from Trench 7 provides as little useful information as the tortured stratigraphy. Large domestic mammals are represented most frequently in the remains, and horse, represented by one butchered element, may have graced a supper table. Wild hare appear to have been used sparingly, as were swans, chickens, and several types of fish, including catfish. The deposition of faunal remains appears to be limited, with the majority of the remains appearing between N1005 m and N1020 m.

### Features

The Sea of Bricks occupies Units N1011-N1018 m and is thickest in N1016 m. This feature is a thick jumble of bricks, primarily yellow, but some red. In N1011 m, it was noted that these bricks lay above a dense concentration of historic artifacts.

Two wooden beams flanked the Sea of Bricks. One beam was found in N1005 m, while the other was found in N1022 m. Both were squared timber, approximately 15-20 cm wide, and both lay almost perpendicular to the trench. In other words, they were roughly parallel to the Assiniboine River.

### Summary

Trench 7 appears to cut through the remains of a building that existed in the later part of the Red River Settlement. The presence of fire bricks, and their dense, localized distribution, suggest that the remains of the steam plant that drove the grist mill are represented in the remains. The ceramic patterns, dating to the post-1858 period and the mid-1870s, coincide with the first recorded construction in 1874 of a grist mill in the area of Trench 7. This chronological reckoning is consistent with the 1883-1887 dates for the brick manufacturers in Missouri.

Several maps indicate the presence of a grist mill in the vicinity of Trench 7. The 1877 McPhillips map refers to the mill as McLane's mill, and Guinn (1980: Fig. 43) equates this structure with the later HBC mill. There are two photographs of a mill complex that is attributed to the HBC (Guinn 1980: Figs. 52, 60) and that dates between 1874 and 1907. A number of plans also show the location of the HBC mill complex (Guinn 1980: Figs. 29, 59, 62, 65, 68, 69, 70, 71, 74) until its demolition in 1907. Assuming that McLane's mill and the HBC mill are, in fact the same structures, then a superimposition of Trench 7 on the mill's insurance plan (Guinn 1980: Fig. 71) indicates that no actual building was intersected by the excavations. Instead, Trench 7 appears to lie to the southeast of an unidentified building to the south of an HBC warehouse and to the east of the mill and feed storage complex. The genesis of the disturbance that is abundantly evident in both wall profiles of Trench 7 north on N1005 is therefore unclear. A steam plant and boiler associated with "McLane's steam grist mill", as recorded by McPhillips in 1877 (Guinn 1980: Fig. 43), would require an industrial facility that was enclosed within a building but that was fireproof. Fire bricks, such as those manufactured in St. Louis that were recovered in the Sea of Bricks, would be an integral part of such a fireproofing scheme. The apparent location of the mill to the northwest of Trench 7, however, poses an explanatory problem unless the Sea of Bricks represents the removal and discard of debris from mill demolition.

The only structure that appears to approach Trench 7 is the southeast corner of the unidentified building. Trench 7 passes within several metres of that corner at about N1036. A railway spur line that ran immediately to the east of the mill and the HBC elevator also approached the west side of the trench near N1001, and a second spur line appears at one point to have crossed the trench from northwest to southeast between approximately N1040 m and N1050 m. The densest concentration of bricks, however, was between about N1010 m and N1020 m, and the bulk of artifacts and fauna were found in the south end of the trench, away from both buildings and railway tracks.

A warehouse is shown on the 1887 map pictured by Guinn (1980: Fig. 62). This warehouse is located to the southeast of the mill complex and near the Assiniboine River. It cannot be stated for certain that this apparently short-lived building was intercepted by Trench 7, but the possibility must be entertained. The best calculations that can be made from the various maps in Guinn indicate that the south end of Trench 7 would have intersected the northwest corner of this warehouse. That same corner appears to have sat immediately to the east of the Red River Valley Railway line, also known as the Northern Pacific and Manitoba Railway, where it crossed the Assiniboine River. Other depictions of railway lines and bridges in relation to the mill indicate that the rail line across the Assiniboine River was moved east, so that the warehouse would have sat to the northwest of the old railway bridge that is now a pedestrian bridge from the Forks to the South Point. Why ash and fire bricks would be associated with this warehouse is unclear, nor is it clear why a warehouse would require an excavation such as that noted north of N1005. Nevertheless, this warehouse is the only building in any map that could have been intercepted by the 1988 excavations. The chronology of the recovered materials is not tightly related to this warehouse, but the 1887 date of the map that depicts it is at least later than the dates for the ceramics, as noted above. The southern units of Trench 7 would have intercepted the warehouse, and at least that finding is consistent with the relative abundance of faunal remains and artifacts in the south end of the trench.

1990

### Artifacts

Table 53 shows the artifacts from the B series of strata according to their Category and Excavation Unit. All soil samples (Natural Object Unmodified) and all artifacts from Stratum A have been removed prior to the construction of Table 53. The full artifact catalogue is presented in Appendix D-1.

A total of 1549 artifacts were recovered from the B series of strata. Over 1200 of these artifacts belonged to the Architectural Object category. The Container category (n=128) ranked a distant second, while Natural Object Modified (n=76) ranked a distant third. Miscellaneous, Detritus and Recreation categories each numbered between 30 and 40 artifacts, while the remaining categories were represented by one to seven artifacts each.

The horizontal distribution of artifacts was also very uneven. Unit N1029/W973 m contained 354 artifacts, the largest count by far of any unit. A diagonally adjacent unit, N1030/W974 m, contained the next highest artifact count (n=169). Unit N1023/W973 m contained 162 artifacts and N1025/W973 m contained 153. Consideration of the column totals reveals, in fact, that the more easterly units (W973 m, W974 m) contain the highest column totals, and that there is a tendency for the lowest column totals to be found in the W975 m and W976 m units. There does not appear to be a reliable north-south patterning of unit totals. The pattern reflects the contours of the strata in this area and the extent to which the Stratum B variants were encountered by each excavation unit.

Table 53. 1990 Stratum B Artifacts.

CATEGORY	STRATUM														Grand Total		
	N1023/W973	N1023/W975	N1024/W976	N1025/W973	N1025/W975	N1026/W976	N1027/W973	N1027/W975	N1028/W976	N1029/W973	N1029/W975	N1030/W974	N1030/W975	N1030/W976		N1031/W973	N1031/W975
ADORNMENT				1													1
ARCHITECTURAL OBJECT	137	87	53	132	21	12	117	44	4	309	26	124		45	60	48	1219
CLOTHING	1							1				1				1	4
CLOTHING MANUFACTURE								1				1					2
CONTAINER	11	4	3	10	6		5	10	1	8	3	20		4	21	23	129
DETRITUS		2		2	1		3	1		12		2	1	7	3	2	36
FLORA										4		3					7
FOOD PROCUREMENT												2					2
MISCELLANEOUS	3	5		6	2		1	2		8		10			3		40
NATURAL OBJECT-MODIFIED	8	2			1	5	2	3		12	20	2			16	5	76
RECREATION	1	1	1	2	1	2	10			1				3	5		30
TRANSPORTATION	1																1
UNDETERMINED												1			1		2
Grand Total	162	101	57	153	32	19	138	62	5	354	49	169	1	59	109	79	1549

Artifacts that were found in a variant of Stratum B are shown in Table 54. The table shows that Stratum B and Stratum B2 contained the overwhelming majority (n=1450) of artifacts. Strata B1 and B4 contained 59 and 38 artifacts respectively, while Stratum B5 contained only one artifact. While the overall distribution of artifacts is ca. 8.5:6 in Strata B and B2, not all categories follow this distribution. Containers, for example, have roughly an 8:3 ratio, and Miscellaneous artifacts have about a 5:1 ratio. Conversely, Detritus exhibits a 1:3 ratio and Recreation artifacts have a ratio of 1:2.

Containers and Miscellaneous artifacts, then, appear to be over represented in Stratum B versus B2, but Detritus and Recreational artifacts are relatively over-represented in B2 compared to B.

The one artifact comprising the Adornment category was a round, smooth, white glass trade bead. It was found in Stratum B of N1025/W973 m.

Table 54. 1990 Stratum B Variants Artifacts.

CATEGORY	STRATUM					Grand Total
	B	B1	B2	B4	B5 (blank)	
ADORNMENT	1					1
ARCHITECTURAL OBJECT	686	45	462	26		1219
CLOTHING	2	1	1			4
CLOTHING MANUFACTURE	1	1				2
CONTAINER	79	7	33	10		129
DETRITUS	8		26		1	36
FLORA	2	1	4			7
FOOD PROCUREMENT	1	1				2
MISCELLANEOUS	33	1	6			40
NATURAL OBJECT-MODIFIED	40		36			76
RECREATION	9	1	18	2		30
TRANSPORTATION	1					1
UNDETERMINED	1	1				2
Grand Total	864	59	586	38	1	1549

There were 1219 Architectural Objects (Table 55). The Accoutrement sub-category consisted of 79 artifacts, Hardware of 214 artifacts, and Structure of 926 artifacts. N1029/W973 m contained 309 artifacts, i.e. almost all of the 354 artifacts in this unit were architectural in nature. Inspection of the other column totals reveals, not surprisingly, that W973 m and W974 m units contained the bulk of the architectural objects. Consideration of the stratigraphic association of the Architectural Objects shows that Strata B and B2 contain the vast majority of artifacts. The relative proportions of each sub-category in these two strata appear to mirror the overall distribution of artifacts. There seems, therefore, to be a degree of homogeneity in the distribution of these sub-categories among strata, suggesting that depositional forces may have been roughly the same as each stratum was deposited.

Table 55. 1990 Stratum B Architectural Objects.

SUBCATEGORY	EXCAVATION UNIT														Grand Total	
	N1023/W973	N1023/W975	N1024/W976	N1025/W973	N1025/W975	N1026/W976	N1027/W973	N1027/W975	N1028/W976	N1029/W973	N1029/W975	N1030/W974	N1030/W976	N1031/W973		N1031/W975
ACCOUTREMENT	8	3		3	2	3	4	5		6		16	6	11	12	79
HARDWARE	14	13	6	4	5	1	28	17	1	19	4	38	7	31	26	214
STRUCTURE	115	71	47	125	14	8	85	22	3	284	22	70	32	18	10	926
Grand Total	137	87	53	132	21	12	117	44	4	309	26	124	45	60	48	1219

All of the Accoutrement sub-category consisted of windowpane glass. Stratum B contained 40 fragments, Stratum B1 contained 8, Stratum B2 contained 24, and Stratum B4 contained 7. The distribution of windowpane fragments among units was not particularly revealing. N1031/W973 m and W975 m, as well as N1030/W974 m, contained the largest artifact frequencies. These units lay closest to the cellar feature and the presence of pane glass in them may indicate where the exterior wall of the building stood, or they may represent flood cleanup associated with Stratum T in the cellar.

Table 56. 1990 Stratum B Hardware

OBJECT	STRATUM																				Grand Total													
	B					B1					B2					B4																		
	EXCAVATION UNIT										EXCAVATION UNIT					EXCAVATION UNIT						EXCAVATION UNIT												
	N1023/W973	N1023/W975	N1024/W976	N1025/W973	N1025/W975	N1027/W973	N1027/W975	N1028/W976	N1029/W973	N1029/W975	N1030/W974	N1030/W976	N1031/W973	N1031/W975	N1031/W976	N1031/W977	N1031/W978	N1031/W979	N1031/W980	N1031/W981		N1031/W982	N1031/W983	N1031/W984	N1031/W985	N1031/W986	N1031/W987	N1031/W988	N1031/W989	N1031/W990				
BOLT & NUT																																		
HINGE																																		
NAIL	11	9	5	2	5	12	14	1	4	3	16	6	5	93																				
NAIL?						3								3																				
PIPE						1								1																				
SPIKE		1												1																				
WIRE		3					1			1	1																							
Grand Total	11	13	5	2	5	17	16	1	4	4	17	6	5	106	2	7	7	6	22	1	1	11	1	15	14	7	3	14	67	3	15	1	19	214

The Hardware sub-category is shown in Table 56. Almost all Hardware artifacts were known or suspected nails (n=199, n=3). Eight wire fragments were recovered, six from Stratum B and two from Stratum B1. Four other artifact types were represented only once each. Stratum B contained 106 artifacts, Stratum B1 contained 22, and Stratum B2 contained 67. There was a clear pattern of higher frequencies in the northeast part of the excavation area, adjacent to the southwest corner of Trench 5 and the cellar feature. Because most Hardware artifacts were nails, the greatest concentration of them also occurred immediately southwest of the cellar feature.

The nails are presented in Table 57. All of them are sheet cut or unidentified; none is hand wrought or wire. Their technology is therefore consistent with the nails from Components II-IV in the cellar feature. Only 22 of almost 200 nails could not be identified according to their manufacturing technology. Among the machine cut nails, a remarkable number, almost one-third, were deemed to be whole. Used nails, however, are often broken, so the abundance of whole nails may indicate that many were spilled and not used. The abundance of head and shank fragments also suggests that the extraction of many nails was attempted but that the nails broke in the process. Thus repair of buildings, and/or nail re-use may be indicated.

The Structure sub-category is presented in Table 58. Of the 926 artifacts in this group, 250 are bricks, 66 are chinking, 389 are mortar, and 221 are unidentified. Stratum B contained 540 artifacts, Stratum B1 contained 15 (all unidentified), and Stratum B2 contained 371 artifacts. The ratio of bricks to mortar in Stratum B is about 1:2, whereas in both Stratum B2 and in total the ratio is more like 1:1.2 or 1:1.5. The reduced amount of brick to mortar in Stratum B suggests that different depositional processes may be at work in Stratum B compared to Stratum B2. The proportion of unidentifiable structural artifacts is also very high in Stratum B, supporting the idea that intact material was more commonly deposited in Stratum B2. Spatial distribution of materials in Strata B and B2 shows that the eastern excavation units tend to have the greatest frequencies of artifacts. In Stratum B, N1025/W973 m contained 118 brick and mortar fragments, the largest frequency by far of any unit for this stratum. In Stratum B2, by contrast, the highest concentration of materials is in N1029/W973 m where

Table 57. 1990 Stratum B Nails.

MANUFACTURE	PORTION	STRATUM				Grand Total
		B	B1	B2	B4	
MACHINE CUT	HEAD, SHANK	22	8	25	5	60
	HEAD, SHANK?	1				1
	HEAD?, SHANK	1		1	1	3
	SHANK	7	4	7	1	19
	SHANK, POINT	3	1	5	2	11
	SHANK, POINT?			1		1
	WHOLE	25	3	17	7	52
WHOLE?	1		1		2	
MACHINE CUT Total		60	16	57	16	149
MACHINE CUT?	HEAD, SHANK	9	2	4	2	17
	HEAD?, SHANK		1			1
	SHANK	3		1		4
	SHANK, POINT			1		1
	SHANK?			1		1
	WHOLE	2			1	3
WHOLE?	1				1	
MACHINE CUT? Total		15	3	7	3	28
UNDETERMINED	HEAD, SHANK	11	1			12
	HEAD?, SHANK			1		1
	SHANK	3				3
	SHANK?			1		1
WHOLE	3		1		4	
WHOLE?	1				1	
UNDETERMINED Total		18	1	3		22
Grand Total		93	20	67	19	199

212 fragments of mortar, bricks and some chinking were found. The bricks were either tan or rust coloured, and none bore any makers' marks.

Table 58. 1990 Structure Artifacts: Object Name by Stratum B variant and Excavation Unit.

OBJECT	STRATUM														Grand Total							
	B							B1			B2											
	EXCAVATION UNIT							EXC UNIT			EXCAVATION UNIT											
	N1023/W973	N1024/W976	N1025/W973	N1025/W975	N1027/W973	N1027/W975	N1028/W976	Total	N1029/W973	N1030/W974	N1031/W975	Total	N1024/W976	N1026/W976		N1027/W973	N1027/W975	N1029/W973	N1030/W974	N1031/W973	N1031/W975	Total
BRICK	16	5	3	32	5	1	1	107			1			1	43	5	74	18	2	2	143	250
CHINKING	1			1	2		32														34	66
MORTAR	36	30	19	85	7	1	214							1	5	20	10	120	2	4	175	389
UNDETERMINED	62	36	12	7	18		187				2			1	2	1	1	1		1	19	221
Grand Total	115	71	34	125	14	21	540				15			12	8	64	15	213	4	6	371	926

Four artifacts represent the Clothing category. The first item is a broken antler button that was found in N1023/W973 m, Stratum B (Fig. 41a). The second item is the hook from a hook and eye pair. It was found in N1030/W974 m, also in Stratum B. A ferrous metal button shank was recovered from N1031/W975 m, Stratum B1. Finally, a torn leather shoe sole fragment was recovered from N1027/W975 m, Stratum B2. No clear pattern emerges from such a small sample, but all four artifacts are consistent with the recoveries in the cellar feature.

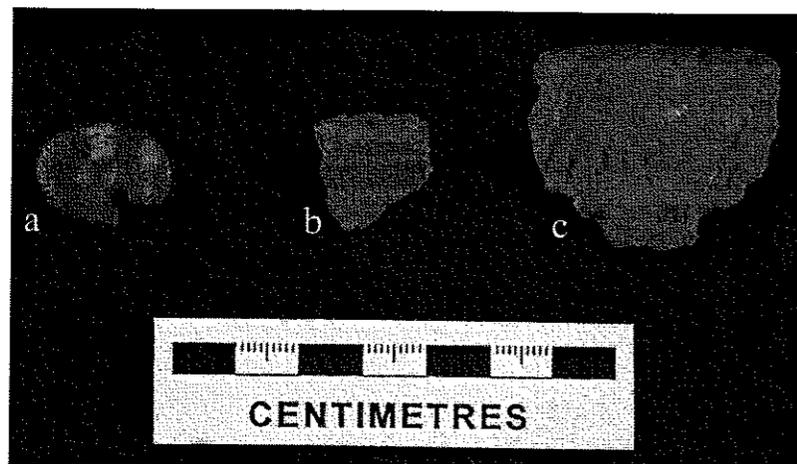


Figure 41: a) Antler button, b, c) Blackduck ceramic fragments.

The artifacts from these latter two categories are significant because of their small sample size and because of their recovery location outside the house. The excavated area appears not to have been used either for the manufacture or repair of clothing or for its

Clothing Manufacture artifacts numbered only two. Both were straight pins made of, or coated with, an alloy (probably ferrous) that appeared gray. One of the pins was found in N1027/W975 m, Stratum B1. It consisted only of the shaft and point. The other pin was found in Stratum B of N1030/W974 m, and it was bent but complete.

disposal. The few items recovered are, however, consistent with those found in the adjacent cellar feature.

Table 59 shows the containers by stratum and sub-category. The most striking feature of the table is the large proportion (50%) of unidentified artifacts. This situation suggests that the containers were so fragmented as to obliterate their function. This degree

Table 59. 1990 Stratum B Containers.

SUB-CATEGORY	STRATUM														Grand Total										
	B							B1			B2					B4									
	EXCAVATION UNIT							EXC UNIT			EXCAVATION UNIT					Total									
	N1023/W973	N1023/W975	N1024/W976	N1025/W973	N1025/W975	N1027/W973	N1027/W975	N1028/W976	N1029/W973	N1029/W975	N1030/W974	N1031/W973	N1031/W975	Total		N1024/W976	N1026/W976	N1027/W973	N1027/W975	N1029/W973	N1030/W974	N1031/W973	N1031/W975	Total	
DINNERWARE	4	3	2	3	4	2	1	1		5	2	2	29	2	1	1	4	4	4	3	8	19		52	
STORAGE	2		1				1			2	1	2	9						1					1	10
STORAGE, COOKING				1	1								2												2
UNDETERMINED	5	1		6	1	1	1		6	1	11	5	39	1	1	1	3	2		1	10	13	10	10	65
Grand Total	11	4	3	10	6	4	1	7	3	17	9	3	79	3	2	2	7	4	6	1	4	18	33	10	129

of fragmentation is unlike that observed in the cellar feature where only 20% of containers were unidentified. Thus either smaller container fragments were being discarded outside the cellar compared to those deposited within it, or there was additional post-depositional breakage of container fragments outside the cellar.

Dinnerware fragments accounted for 40% of all containers (n=52), while storage fragments accounted for less than 10%. Containers for cooking were not identified with any certainty. The debris represented in this assemblage appears to represent containers that were used for food consumption.

The stratigraphic distribution of containers indicates that the majority (>60%) was deposited in Stratum B (n=79). Half of these artifacts were unidentifiable to sub-category, and Dinnerware fragments were by far the largest identifiable sub-category. Stratum B1 contained only 7 artifacts, 4 Dinnerware and three Unidentifiable fragments. B2 contained 33 artifacts, but this time the Unidentifiable fragments numbered 13 while the Dinnerware fragments numbered 19. Post-depositional breakage therefore appears to have been less in Stratum B2 compared to Stratum B. Stratum B4 contained 10 fragments, all Unidentifiable to sub-category, i.e. all heavily broken, probably after deposition. The heaviest concentration of containers, regardless of stratum, appear to be in the northeast corner of the excavated area, south and southwest of the cellar feature.

Table 60 shows that all the Dinnerware was white earthenware, except for one porcelain fragment recovered in Stratum B2. This latter fragment was a teacup rim fragment that was white with a clear glaze. Storage containers tended to be made of glass, but one was made of lead and another was made of stoneware. Only the stoneware container was found in Stratum B2; the other nine artifacts were recovered from Stratum B. Seven of the eight glass fragments were either clear or green, and one was brown. All eight were deemed to be from bottles. The stoneware fragment was part of the body of a

SUBCATEGORY	MATERIAL	STRATUM				Grand Total
		B	B1	B2	B4	
DINNERWARE	EARTHENWARE	29	4	18		51
	PORCELAIN			1		1
DINNERWARE Total		29	4	19		52
STORAGE	GLASS	8				8
	LEAD	1				1
	STONEWARE			1		1
STORAGE Total		9		1		10
STORAGE, COOKING	TERRA COTTA	1				1
	TERRA COTTA?	1				1
STORAGE, COOKING Total		2				2
UNDETERMINED	EARTHENWARE	14	3	4	5	26
	GLASS	24		8	5	37
	RED EARTHENWARE	1		1		2
UNDETERMINED Total		39	3	13	10	65
Grand Total		79	7	33	10	129

fragments, of which 37 were glass (probably bottles), and 28 were earthenware. Two of these latter fragments were red earthenware that had been coated with a clear glaze. The picture that emerges from this table is one in which dinnerware is made of white earthenware, storage containers are mainly glass bottles, and unidentified fragments are slightly more likely to be glass than ceramic because of the greater fragility of the former. Bits of stoneware crock, lead foil, red earthenware and Aboriginal ceramics were also found in the historic deposits.

The earthenware artifacts are presented according to pattern and stratum in Table 61. Plain white fragments with clear glaze are most common. Next most common are fragments that bear such small amounts of decoration that the pattern cannot be identified. The remaining 20 fragments number no more than five fragments for each identifiable pattern. Stratum B contains about 55% of all earthenware fragments, and Stratum B2 contains a further 28%.

Stratum B contains the greatest variety of identified patterns. Because of the fragmentation of these artifacts, many pattern identifications were only tentative. Alnwick Castle pattern is present on one fragment (Fig. 42a). An unknown British manufacturer made this pattern, probably ca. 1835. The pattern is likely part of the "Passion Flower Border" series and is referenced in the Parks Canada pattern description as #021 from the Forks. Spode, Copeland and Garrett, and possibly W.T. Copeland manufactured the "Botanical" pattern between 1828 and at least 1836 (Fig. 42b). Two "Fibre" fragments were recovered (Fig. 42c). They were made by W.P. & G.

beige storage crock. The lead storage artifact was a fragment of foil that had been used as a container liner. This practice was used in the nineteenth century to package tea, among other things. The fragment was gray and had been rolled to .04 mm thickness. The two terra cotta ceramic fragments consisted of Blackduck rim fragments (Fig. 41b, c). They bore the familiar cord-wrapped stick impressions and punctates and were found in Stratum B. One was recovered from N1025/W973 m and the other from N1025/W975 m. The Undetermined sub-category consisted of 65

PATTERN	STRATUM				Grand Total
	B	B1	B2	B4	
ALNWICK CASTLE	1				1
ARCADE?		1			1
BOTANICAL?	1				1
FIBRE?	2				2
IVY	4				4
IVY?			1		1
MACAW?	1				1
NONE	21	3	5	5	34
SPRIG?			1		1
SWISS COTTAGE?			1		1
UNIDENT.	11	3	9		23
WHEAT?	1				1
WILLOW	1		4		5
WILLOW/CHINOISERIE			1		1
Grand Total	43	7	22	5	77

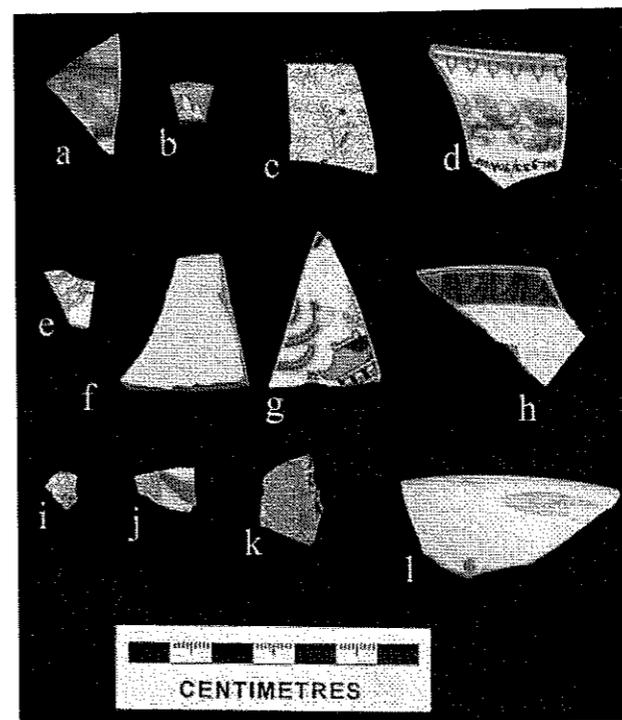


Figure 42: Transfer-printed earthenware fragments: a) Alnwick Castle, b) Botanical, c) Fibre, d) Ivy, e) Macaw, f) Wheat, g) early Willow, h) Arcade, i) Sprig, j) Swiss Cottage, k) Chinoiserie, l) chamber pot fragment.

Phillips (Lunn 1985:90), a firm that operated between 1858 and 1897 (Godden 1964: 491). The "Ivy" pattern, registered after 1845 by Copeland and Garrett, then taken over by W.T. Copeland, was found on four fragments (Fig. 42d). The one fragment exhibiting the "Macaw" pattern was also originally a Copeland and Garrett pattern that was later produced by W.T. Copeland (Fig. 42e). It was manufactured first in 1838 and continued in production until after 1872. The "Wheat" (Fig. 42f) and "early Willow" (Fig. 42g) patterns are less reliable for dating purposes and will not be addressed here. The earliest date for the ceramic patterns in this assemblage is 1828, but the majority of them were first produced about a decade or more afterwards. The "Fibre" pattern suggests that some deposition occurred in the area even after the fort was dismantled.

Stratum B1 contained only one identifiable pattern, "Arcade" (Fig. 42h). Mellor, Taylor & Co. first manufactured this pattern in 1880. Although the sample size is small, the possibility of a late deposition of Stratum B1 must be borne carefully in mind. So, too, must it be remembered that the identification of the pattern is tentative.

Stratum B2 contained one "Ivy" pattern (1845+), one "Sprig" (W.T. Copeland, 1832+) (Fig. 42i), one Swiss Cottage (Minton, 1822-1868) (Fig. 42j), four "Willow" and one "Willow/Chinoiserie" (Fig. 42k). The recoveries do not permit the reliable calculation of a mean ceramic date, but the earliest dates of manufacture suggest that these ceramics could have been present at the fort before those of Stratum B.

The Container category is presented by sub-category and object type in Table 62. Dinnerware vessels were primarily Hollowware, a general

SUBCATEGORY	OBJECT	STRATUM				Grand Total
		B	B1	B2	B4	
DINNERWARE	BOWL?	1		1		2
	CUP	1				1
	CUP?	1				1
	HOLLOWWARE	7	1	4		12
	HOLLOWWARE?	1		1		2
	PLATE	5		1		6
	PLATE?	4	1	3		8
	PLATE? BOWL?	1				1
	PLATE? CUP?			2		2
	SOUP BOWL?	1				1
	TEA CUP	1		1		2
	TEA CUP?	2		1		3
	TEAPOT LID			1		1
UNDETERMINED	4	2	4		10	
DINNERWARE Total		29	4	19		52

term that encompasses any receptacle capable of holding liquids. The main criterion for assigning a fragment to this type is the presence of a curvature. The diversity of object types, the combinations of types, and the tentativeness of the assignments bespeaks the high degree of fragmentation among the containers.

Dinnerware, as noted above, was the most common sub-category. Plates appear to be most frequently represented among the fragments, followed closely by cup/teacup fragments. Interestingly, no saucers were identified among the fragments. Bowls, either soup or tea, appear to have been relatively infrequent. A teapot lid confirms that tea, most likely consumed from cups, was a favoured beverage. Use of cups instead of bowls for tea consumption indicates a relatively late fur trade date.

The Storage sub-category has already been discussed in terms of the types of artifacts found within it.

The Undetermined sub-category contains an interesting mélange of artifact types. Holloware, again, is the largest of the identified types of objects, and these, presumably, are ceramic. Bottles and drinking glass fragments are naturally made of glass. The possible chamber pot is interesting because it indicates an aspect of hygiene and lifestyle of the house occupants (Fig. 42l). The recovery of such a fragment outside the cellar also is informative about the discard decisions made by the house occupants.

The Detritus category, presented in Table 63, consisted of nine flakes and 27 scrap fragments. Stratum B contained 8 artifacts, while Stratum B2 contained 26. Among the flakes, three of Knife River flint (Fig. 43a,b,c) and one each of chert (Fig. 43d), quartz (Fig. 43e) and quartzite (Fig. 43f) could have been Aboriginally deposited. Five flakes were found in Stratum B, three in Stratum B2, and one in B5. The situation among the scrap artifacts was somewhat different. Only two chert artifacts were recovered, one in each of Strata B and B2. Limestone scrap was found primarily in Stratum B2, and limestone with mortar adhering to it was found only on Stratum B2. Twenty-five of 36 Detritus artifacts involved limestone scrap. N1027 m, N1029 m and

STORAGE	BOTTLE	4			4
	BOTTLE?	4			4
	CROCK (OPEN)		1		1
	FOIL LINER	1			1
STORAGE Total		9	1		10
STORAGE, COOKING	POT	2			2
STORAGE, COOKING Total		2			2
UNDETERMINED	BOTTLE?	4	1		5
	CHAMBER POT?		1		1
	CUP? BOWL?	1			1
	DRINKING GLASS?			1	1
	HOLLOWARE	12	1	1	14
	HOLLOWARE?			1	1
	LID	1			1
	PLATE?	1			1
UNDETERMINED Total		20	3	2	25
Grand Total		79	7	3	89

Table 63. 1990 Stratum B Detritus.

OBJECT	MATERIAL	STRATUM				Grand Total
		B	B2	B5	(blank)	
FLAKE	CHERT	1				1
	KNIFERIVER FLINT	3				3
	LIMESTONE		1			1
	QUARTZ			1		1
	QUARTZITE		1			1
	SANDSTONE	1				1
	UNDETERMINED		1			1
FLAKE Total		5	3	1		9
SCRAP	CHERT	1	1			2
	LIMESTONE	2	8			10
	LIMESTONE W/ MORTAR			14	1	15
SCRAP Total		3	23		1	27
Grand Total		8	26	1	1	36

N1031 m, all W973 m, contained 15 limestone artifacts of the 27 recovered scrap items. Six limestone scrap artifacts also came from N1030/W976 m.

The seven artifacts in the Flora category area all seeds. The two seeds from Stratum B are charred, but the one from Stratum B1 and the four from Stratum B2 are not. No further identification of these remains was undertaken.

The Food Procurement category is represented by two lead shot, one flattened as if used (Fig. 44a,b). Both were found in N1030/W974 m, one in Stratum B and the other in Stratum B1. This technology is consistent with the nineteenth century and the cellar deposits.

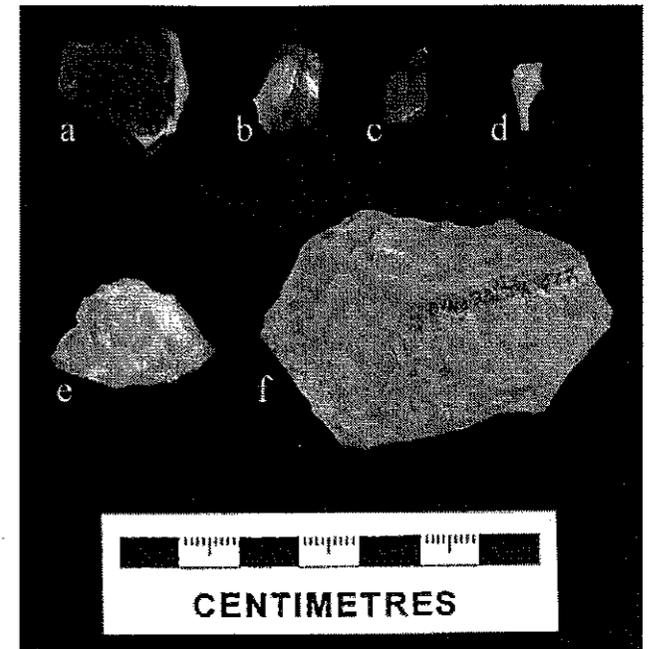


Figure 43: Lithic detritus: a,b,c)Knife River flint, d) chert, e) quartz, f) quartzite.

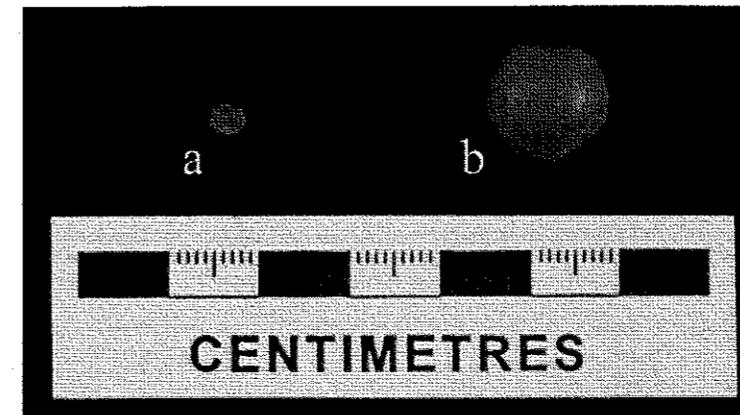


Figure 44: Lead shot: a. spherical, b. flattened.

The 40 Miscellaneous artifacts are presented by material, stratum and level in Table 64. Ferrous metal artifacts are the predominant objects, comprising 33 of the total. The bulk (n=33) of the Miscellaneous artifacts were found in Stratum B; only one was found in B1 and six in B2. One artifact identified as Bakelite deserves some mention because this is a twentieth century material. The fragment was found in the screen and was attributed to Stratum B, N1031/W973 m. No nineteenth century material could be identified as the same material as this object, so the possibility of its intrusion into Stratum B from Stratum A must be entertained.

Table 64. 1990 Stratum B Miscellaneous.

MATERIAL	STRATUM													Grand Total		
	B									B1		B2				
	EXCAVATION UNIT									Total	EXCAVATION UNIT		Total			
	N1023/W973	N1023/W975	N1025/W973	N1025/W975	N1027/W975	N1029/W973	N1030/W974	N1031/W973	Total		N1030/W974	Total			N1027/W973	N1027/W975
BAKELITE?								1	1							1
FERROUS METAL	2	5	6	2	1	2	9	1	28			1	1	3	5	33
GLASS						1		1	2							2
METAL										1	1					1
UNDETERMINED	1					1			2					1	1	3
Grand Total	3	5	6	2	1	4	9	3	33	1	1	1	1	4	6	40

Table 65. 1990 Stratum B Natural Object Modified.

MATERIAL	STRATUM													Grand Total			
	B									B2							
	EXCAVATION UNIT									Total	EXCAVATION UNIT				Total		
	N1023/W973	N1023/W975	N1025/W975	N1026/W976	N1027/W975	N1029/W973	N1029/W975	N1030/W974	N1031/W973		Total	N1026/W976	N1027/W973			N1029/W973	N1030/W974
CHARCOAL		1	1	2	3	2	20	1	30	3	2	9	1	13	5	33	63
COAL		1						1	2			1				1	3
GRANITE	8								8								8
HEMATITE														2		2	2
Grand Total	8	2	1	2	3	2	20	1	40	3	2	10	1	15	5	36	76

Only Strata B and B2 contained modified natural objects (Table 65), the former containing 40 and the latter 36. Wood charcoal was by far the most abundant artifact, numbering 63 of the total 76 artifacts in this category. Granite fragments numbered eight, while coal numbered three and hematite two. The largest concentration of materials was found in N1029/W975 m where 20 artifacts were recorded, all charcoal. All eight granite fragments were found in Stratum B, N1023/W973 m, and two of the three coal fragments were recovered in Stratum B. Stratum B2 contained 33 charcoal fragments, with greatest concentrations occurring in N1029/W973 m (n=10) and N1031 W973 (n=15). One coal fragment and two hematite fragments were also found in Stratum B2. Coal and charcoal could both have been produced either in the fur trade period or in the railway period. Similarly, granite and hematite are not chronologically indicative.

The Recreation category consisted of 30 smoking pipes, 29 of which were clay and one of which was thought to be soapstone (Table 66). Stratum B contained nine clay pipe fragments, one was found in B1, 17 were recovered in B2, and two were found in B4. One of the clay pipes from Stratum B was a spur fragment that bore the letters "T/B" (Fig. 45a).

Table 66. 1990 Stratum B Pipes.

MATERIAL	STRATUM				Grand Total
	B	B1	B2	B4	
KAOLIN	9	1	17	2	29
SOAPSTONE?			1		1
Grand Total	9	1	18	2	30

This manufacturer's mark is that of Thomas Balme who made pipes in London in 1804-05 (Steer, et al. 1979:174). This artifact is most likely to have been a NWC import considering its date of manufacture. It cannot be known whether this artifact was simply dropped or discarded on a land surface near Fort Gibraltar I where, by coincidence, the HBC later established Fort Garry. The soapstone pipe was found in B2. Its form was that of a European smoking pipe, not an Aboriginal pipe (Fig. 45b). The reason underlying the far greater frequency of pipe recovery in Stratum B2 is unknown.

The Transportation artifact is a rusty railway spike recovered from Stratum B. This artifact provides clear evidence that some materials in that stratum could have been introduced in the late nineteenth or early twentieth century.

The two artifacts of the Undetermined category consist of one burned lump of clear glass from Stratum B, and one splintered wood fragment from Stratum B1. The melted glass fragment is likely another intrusion from Stratum A.

**Summary**

The artifacts from the 1990 excavations represent, in the main, materials associated with the fur trade occupancy of the area. Specifically, most artifacts are related to the construction, maintenance, occupation and demolition of the building that stood over the cellar feature that was excavated in 1988. Construction materials predominated, with domestic items related to consumption and storage of both solid and liquid food showing some importance.

Strata B and B2 contained the vast majority of artifacts between them. Stratum B was the most recent humus layer associated with the fur trade occupancy of the area, it is physically continuous with the Stratum B above the cellar feature, and it contained about 55% of all artifacts. Below it, the thin wood layer known as Stratum B1 is a physical extension of Stratum E from 1988 excavations in the cellar feature. Stratum B2 contained about 38% of all artifacts. Many of the same categories and objects were present in B and B2, but the category and object frequencies sometimes differed in an informative way. Bricks and mortar, for example, were relatively more abundant in B2 than in B, but there was a greater range of materials found in B. On the basis of stratigraphic continuity and matrix contents, Stratum B2 is an extension of Stratum H3 in the cellar feature. Only small amounts of Adornment, Clothing, and Clothing Manufacture artifacts were found in B and B2. Containers were present at a frequency of 61% in Stratum B while they represented at only 25% in B2. As noted above, the containers were mostly white

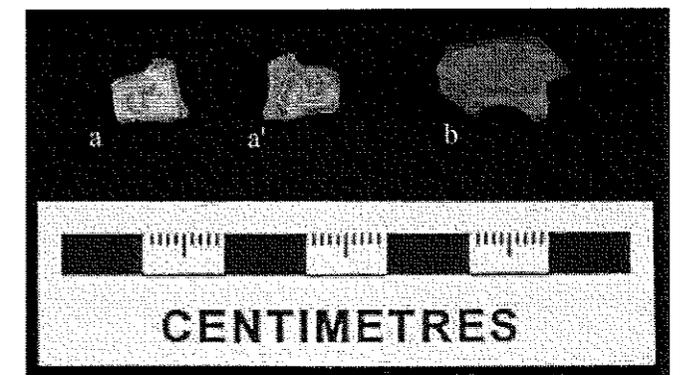


Figure 45: Smoking pipes: a) clay "TB" spur, b) soapstone.

earthenware ceramic Dinnerware, while the storage vessels were primarily glass bottles. Far less detritus was found in B than in B2 (22% vs. 72% respectively, suggesting that purposeful waste discard may account at least in part for the genesis of B2. Miscellaneous materials were of the same type in both strata, but over 82% of them were recovered in Stratum B whereas less than 12% were recovered in B2. Modified Natural Objects were present at 52% in B and 48% in B2 because they were not represented in any other stratum. It could be said that these objects were thus more abundant than expected in B2. In both cases, charcoal was the most abundant material. Recreation artifacts, i.e. smoking pipes, were twice as abundant in B2 as in B. This observation, again, suggests that there is something specific about the genesis of B2. The distribution of pipe fragments by stratum and unit indicates that single pipe fragments were found in Stratum B whereas grouped fragments were found in a smaller number of units in Stratum B2. In fact, nine fragments were found in N1027/W973 m, Stratum B2. The northeast units of the excavation area contained the majority of the pipe fragments, especially in B2. The grouped pipe fragments look like secondary refuse deposition, unless they were pipes that were broken as the house and cellar were being built.

Stratum B3, another wood lens, corresponds stratigraphically to Stratum H2 in the cellar feature, although there is no observed physical continuity between them. Stratum B4 consists mainly of an ashy, tan-coloured deposit. This stratum may correspond, in terms of lower, hence earlier, stratigraphic position, either with Stratum H, G2 or I in the cellar feature. Stratum B5 contained tan silt with burnt wood and charcoal. Figure 12 shows that both B4 and B5 underlay B, so they may be the same deposit. The added description, however, suggests that both B4 and B5 correspond most closely to either Strata H or I in the cellar feature. They were described respectively as "tan silt and charcoal" and "tan silt with ash and charcoal". Because Stratum H overlies Stratum I, the former is the most recent stratum that could correspond to B4 and B5 from the 1990 excavations.

Why, one might ask, cultural deposits from Component IV of the cellar feature were the only materials found in the 1990 excavations and why these recent materials lie directly over the sterile silts of Stratum C. The 1990 strata were clearly continuations of the major Component IV strata in the cellar feature. All earlier materials, including the natural humus deposit above the sterile silts, were completely removed or otherwise rendered indistinct by activities after about 1848.

#### Fauna

Table 67 presents the 1990 faunal classes by stratum and excavation unit. Mammal remains are by far the most numerous, accounting for 65% of the total. Fish remains are the next most numerous remains at 20%, followed by birds at 12%. Amphibians and shellfish account for only trace frequencies. Relatively few elements could not be identified to class.

Stratum B contained the majority of faunal remains, 68.5%. Stratum B2 contained the next greatest frequency of fragments at 26%. The other variants of Stratum B contained only small frequencies of bone, led by Stratum B1 with 3%. The distribution of remains in Stratum B was uneven, but each excavation unit contained at least some remains. Frequencies ranged from a low of 6 in N1024/W976 m to a high of 100 in N1030/W974 m.

Table 67. 1990 Stratum B Fauna.

CLASS	STRATUM																Grand Total																			
	B				B1				B2				B3	B4	B5																					
	EXCAVATION UNIT																																			
	N1023/W973		N1023/W975		N1024/W976		N1025/W973		N1025/W975		N1027/W973		N1027/W975		N1028/W976			N1029/W973		N1030/W974		N1031/W973		N1031/W975		Total										
AMPHIBIA	1																2									3										
AVES	6	1		4	2	1	5	5	4	5	16	8	2	59													66									
MAMMALIA	18	13	5	17	10	20	24	6	31	6	51	37	9	247	1	12	2	15	1	10	5	21	10	11	8	25	91	1	1	6	6	2	2	362		
OSTEICHTHYES	15	3	1	3	2	1			1	4	1	31	1	2	65	1			1		1			35	2		2	3	43			1	1	1	1	111
PELECYPODA	1														1									1	1							1	1			3
UNDETERMINED	2			2					1	1		3		9				2		2				2			2	4							15	
Grand Total	43	17	6	26	14	22	29	12	40	13	100	49	13	384	1	1	14	2	18	1	12	5	59	12	12	11	34	146	1	1	7	7	4	4	560	

All three Amphibian remains were found in Stratum B. These remains are dubiously categorized as Butchering Remains. They are as likely to be natural deposition. Fifty-nine of the 66 bird remains were found in Stratum B. The other seven were found in Stratum B2. Stratum B also contained 247 of the 362 mammal remains. Stratum B1 contained 15 and B2 contained 91. Single digit frequencies were found in the other variants of B. Fish remains numbered 65 in Stratum B and 43 in B2, with only token frequencies in the other variants. Shellfish were inconsequential in the faunal analysis, and, like amphibians, might as easily have been categorized as natural objects.

Table 68. 1990 Stratum B Aves.

GENUS	STRATUM																Grand Total																					
	B								B2																													
	EXCAVATION UNIT																																					
	N1023/W973		N1023/W975		N1024/W976		N1025/W973		N1025/W975		N1027/W973		N1027/W975		N1028/W976			N1029/W973		N1030/W974		N1031/W973		N1031/W975		Total												
ANAS	1																																			2		
AYTHYA																					1															1		
BRANTA				1	1																															2		
GALLUS										1																										1	1	3
GALLUS?				1																	1															2		
LAGOPUS?																	1																			1		
(blank)	5	1	2	1	1	4	5	4	5	12	7	2	49	1	1	1	1	1	1									2							6	55		
Grand Total	6	1	4	2	1	5	5	4	5	16	8	2	59	1	1	1	1	1	1									3							7	66		

The distribution of bird genera by stratum and excavation unit is presented in Table 68. Bird remains are found only in Strata B and B2, with the vast majority in B. Few remains are identifiable to genus, a situation that implies a high degree of breakage. In fact, only one chicken bone could definitely be identified in Stratum B2.

GENUS	SKELETAL ELEMENT	STRATUM		Grand Total
		B	B2	
ANAS	ULNA	1		1
	VERTEBRA	1		1
ANAS Total		2		2
AYTHYA	RADIUS	1		1
AYTHYA Total		1		1
BRANTA	HUMERUS	1		1
	VERTEBRA	1		1
BRANTA Total		2		2
GALLUS	HUMERUS	1		1
	RADIUS		1	1
	SCAPULA	1		1
GALLUS Total		2	1	3
GALLUS?	CORACOID	1		1
	STERNUM	1		1
GALLUS? Total		2		2
LAGOPUS?	TIBIOTARSUS	1		1
LAGOPUS? Total		1		1
(blank)	CORACOID	2		2
	EGGSHELL	25		25
	HUMERUS	1		1
	LONG BONE	10	2	12
	PHALANGE		1	1
	RADIUS	2		2
	TIBIOTARSUS	3		3
UNDETERMINED	6	3	9	
(blank) Total		49	6	55
Grand Total		59	7	66

Bird genera in Stratum B consisted of dabbling and diving duck, goose, chicken and grouse/ptarmigan. Given the geographic distribution of ptarmigan (Godfrey 1979:110-112), the taxonomic assignment of the remains to the genus *Lagopus* appears to be an error. Instead, the remains are likely a species of grouse (family Tetraonidae). None of the genera are represented by more than two fragments. The horizontal distribution of bird remains in Stratum B showed a concentration of elements in N1030 W974, although some bird remains were found in almost every excavated unit. Stratum B2, while it contains little bird bone, contains almost all of it in the northeast units of the excavated area.

The distribution of bird skeletal elements by stratum is shown in Table 69. Eggshell is the most common element, suggesting that eggs were collected and eaten and that their shells were discarded as meal waste. Longbone fragments are next most numerous, but these could be from fore or hind limbs. Unidentified elements are next most common, suggesting a fair degree of breakage such that even the body part could not be discerned. Among the identifiable skeletal elements, forelimbs appear to

predominate over hind limbs. Axial elements (vertebrae, sterna) appear more frequently than hind limbs but less frequently than fore limbs. There are 18 identifiable elements in Stratum B once eggshell, longbone and unidentified fragments are discounted. Of these identified elements, four are hind limb, three are axial, and 11 are forelimb. The reason for these skewed frequencies is unclear, but the sample size is too small for reliable conclusions to be drawn.

Table 70 presents the mammal genera by stratum and excavation unit. Row totals reveal that two-thirds of all mammalian remains could not be identified to the genus level. Heavy fragmentation is thought to be the cause of this situation. The largest single identifiable genus was *Bos* (n=20 known and suspected fragments). Small numbers of bison, pig, sheep and deer fragments were also found, as well as a canid element that may be dog, coyote, fox or wolf. Stratum column totals reveal that Stratum B contained two-thirds of all mammalian remains, while Stratum B2 contained a further 91. Unit totals vary considerably within strata.

Other interesting distribution patterns are also revealed in Table 70. Bison remains, for example, were found only in Stratum B, as was the only canid fragment. Eight deer

remains were found in Stratum B, compared to one in B2. *Bos*, *Sus* and *Ovis* distributions between strata generally mirror the stratum totals.

GENUS	STRATUM																				Grand Total													
	B										B1		B2					B3	B4	B5														
	EXCAVATION UNIT										EXCA UNIT	EXCAVATION UNIT					Total	Total	Total	Total														
	N1023/W973	N1023/W975	N1024/W976	N1025/W973	N1025/W975	N1027/W973	N1027/W975	N1028/W976	N1029/W973	N1029/W975	N1030/W974	N1031/W973	Total	N1031/W975	N1030/W974	N1029/W973	N1027/W975	N1029/W973	N1030/W974	N1031/W973		Total	N1031/W973	Total	N1027/W973	Total								
BISON							1					5													5									
BOS	1	1	1		6	2				1		12	1	1								2	1	1		16								
BOS?							1					1							1		2	3			4									
CANIS								1				1													1									
LARGE	2	5	1	2	2	6	1				9	28	1	1				1	2	1	1	2	5	12	41									
MEDIUM				2	1		2				1	6													6									
ODOCOILEUS							1	2		1	1	6													6									
ODOCOILEUS?			1				1					2										1			3									
OVIS							2	1				4	7										1		8									
OVIS?							1	1	1			3									1		2		6									
SMALL							1	1			3	5										1	1		6									
SUS	1										1	3	5	1	1								1		7									
SUS?							1					1										2	2		3									
(blank)	15	7	3	11	7	9	7	2	27	5	33	29	164	1	10	1	12				3	5	19	7	9	5	16	64		6	6	2	2	248
MEDIUM/LARGE				1								1													1	2								
Grand Total	18	13	5	17	10	20	24	6	31	6	51	37	9	247	1	12	2	15	1	10	5	21	10	11	8	25	91	1	1	6	6	2	2	362

The skeletal elements within each genus are shown according to stratum in Table 71. The five Bison remains consist of a deciduous lower left first molar, an upper molar, the antero-medial portion of a proximal condyle from a left radius, and two proximal fragments of a right rib (approximately 10th) to which the epiphysis was unfused. *Bos* elements in Stratum B were identified primarily as taurus (domestic cattle), but they included a calcaneum that was suspected of being an ox rather than a cow (Fig. 46). Five fragments of middle phalange were recovered as well as five rib fragments, most of which represented middle portions of the element. The tarsal bone is the 2&3 right tarsal. The only element in Stratum B1 is a medial diaphysis fragment of a fused radius and ulna, probably left. The tibia fragment from Stratum B2 is from the left side, and it consists of a distal fragment with the epiphysis fused to the diaphysis. The ischium fragment from Stratum B3 has no further description. The suspected *Bos* remains consist of a medial fragment of rib

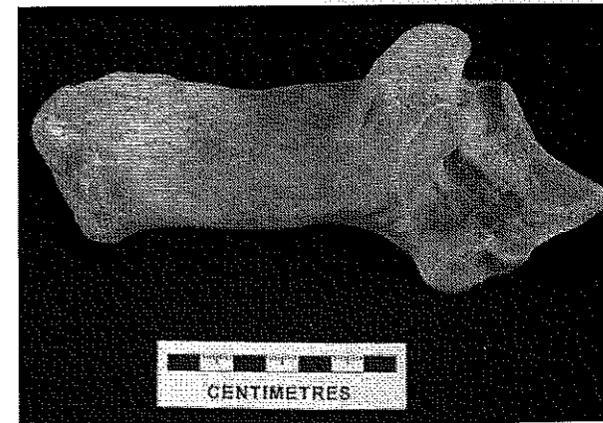


Figure 46: Ox calcaneum.

from Stratum B, and a medial and distal rib fragment, as well as a lumbar vertebra fragment, from Stratum B2. In sum, the *Bos* elements display a considerable number of lower limb elements. The presence of only rib fragments and the lumbar vertebra fragment suggest use and discard of meatier parts of the animals. The presence of lower limb elements does, however, suggest that cattle were either slaughtered nearby or that whole carcasses or untrimmed major sections were transported to the site.

The canid vertebra is the second lumbar.

Deer from Stratum B appear to be a mix of mature and juvenile individuals. The antler fragment consists of a tine, and this can have come from a relatively mature male. The left lacrimal element provides no such information, but the molar is a permanent lower first molar, i.e. from a mature animal. Both rib fragments are from right ribs, and one is a proximal fragment with an unfused epiphysis, i.e. juvenile. The vertebra is represented only by the top part of the spinous process. The left humerus of the suspected deer is a distal fragment with the epiphysis unfused. The suspected deer remains from Stratum B2 consist of a left mandible fragment and a medial rib fragment. The deer remains show not only age differentiation among individuals but also that a number of skeletal areas are present. The presence of skull parts implies that whole animals were brought to the site for processing and consumption. The presence of all but one deer element in Stratum B suggests that the activities that resulted in the deposition of Stratum B2 did not involve deer very much. Interestingly, the same could be said of *Bison*, another wild animal. Similarly, wild birds are not found outside Stratum B.

*Ovis* remains consist mainly of cranial and distal limb elements. Of 14 known or suspected sheep elements, only one vertebra from Stratum B and one rib fragment from Stratum B2 run counter to the pattern. Stratum B contained a right mandible, a left maxilla fragment, a second (middle) phalange, two distal fragments of the right prosthion, a right tibial tarsal (astragalus) and an atlas vertebra. While this vertebra is technically part of the axial skeleton, its position immediately behind the skull may indicate that it was treated as skull parts were treated. A distal metacarpal was found in Stratum B2. Suspected *Ovis* remains consisted of a premolar, a diaphysis fragment of a right tibia and a proximal fragment of a right tibia with the epiphysis fused. Suspected *Ovis* remains from Stratum B2 consisted of an upper left deciduous molar crown and the proximal fragment of a rib. Most of the preferred, meat-bearing bones of sheep are absent from the assemblage. Butchering waste fragments seem to be represented in this assemblage. Unlike wild animals, sheep are more fully represented in both Strata B and B2.

Only ten pig remains were recovered, and, like sheep remains, they were found in Strata B and B2, as well as in B1. Stratum B contained three incisors, all permanent dentition. One was a right lower second incisor, and two were upper left incisors. Clearly, then, at least two pigs are represented by these remains. A left parietal and occipital fragment and lumbar vertebra were also found. Stratum B1 contained the proximal fragment of a right ulna. The proximal fragment of a right fourth rib was found in Stratum B2. Among the suspected pig remains, a first thoracic vertebra was found in Stratum B, and Stratum B2 contained a lower third incisor and a left pubis fragment. The presence of elements from a number of skeletal areas indicates that the remains represent whole pigs. The stratigraphic distribution of remains shows that domestic fauna are, again, represented in numbers beyond Stratum B.

Table 71. 1990 Stratum B Mammals.

GENUS	SKELETAL ELEMENT	STRATUM					Grand Total
		B	B1	B2	B3	B4	
BISON	MOLAR	2					2
	RADIUS	1					1
	RIB	2					2
BISON Total		5					5
BOS	CALCANEUM	1					1
	ISCHIUM				1		1
	PHALANGE	5					5
	RADIUS & ULNA		1				1
	RIB	5					5
	TARSAL	1					1
BOS Total		12	1	2	1		16
BOS?	RIB	1		2			3
	VERTEBRA			1			1
BOS? Total		1		3			4
CANIS	VERTABRA	1					1
CANIS Total		1					1
LARGE	EPIPHYSIS FRAG	1					1
	INCISOR	1					1
	LONG BONE	1					1
	LONG BONE FRAG	10	1	7			18
	MOLAR			1			1
	RIB	4		2			6
	SCAPULA	1					1
	SKULL	1					1
	UNDETERMINED	7		2			9
LARGE Total		28	1	12			41
MEDIUM	FEMUR	1					1
	RIB	2					2
	SCAPULA	1					1
	SKULL	1					1
	VERTEBRA	1					1
MEDIUM Total		6					6
MEDIUM/ LARGE	EPIPHYSIS	1					1
	VERTEBRA			1			1
MEDIUM/LARGE Total		1		1			2
ODOCOILEUS	ANTLER	1					1
	LACRIMAL	1					1
	MOLAR	1					1
	RIB	2					2
	VERTEBRA	1					1
ODOCOILEUS Total		6					6
ODOCOILEUS?	HUMERUS	1					1
	RIB			1			1
	MANDIBLE	1					1
ODOCOILEUS? Total		2		1			3

OVIS	MAXILLA	1					1
	METACARPAL			1			1
	PHALANGE	1					1
	SKULL	2					2
	TIBIAL TARSAL	1					1
	VERTEBRA	1					1
	MANDIBLE	1					1
OVIS Total		7	1				8
OVIS?	MOLAR			2			2
	PREMOLAR	1					1
	RIB			1			1
	TIBIA	2					2
OVIS? Total		3	3				6
SMALL	RIB			1			1
	SCAPULA	1					1
	STERNUM	1					1
	UNDETERMINED	1					1
	VERTEBRA	2					2
SMALL Total		5	1				6
SUS	INCISOR	3					3
	RIB			1			1
	SKULL	1					1
	ULNA		1				1
	VERTEBRA	1					1
SUS Total		5	1	1			7
SUS?	INCISOR			1			1
	VERTEBRA	1					1
	PUBIS			1			1
SUS? Total		1	2				3
(blank)	CANCELLOUS BONE	3					3
	CONDYLE FRAG	1					1
	CRANIA	2					2
	EPIPHYSIS	1					1
	FEMUR	1					1
	INCISOR	4	1				5
	LONG BONE FRAG	4	1				5
	MAXILLA/MANDIBLE?		1				1
	MOLAR		1				1
	PHALANGE	3					3
	RADIUS	1					1
	RIB	5	4				9
	SKULL	18	3				21
	UNDETERMINED	119	11	53	6	2	191
	UNDETERMINED		1				1
VERTEBRA	2					2	
(blank) Total		164	12	64	6	2	248
Grand Total		247	15	91	1	6	362

The following discussion takes each identified genus and considers the butchering marks on each element. *Bison* elements are not presented because they exhibited no butchering marks.

Table 72: 1990 Stratum B Genus *Bos*: Butchering Marks by Excavation Unit.

SKELETAL ELEMENT	MARKS	STRATUM			Grand Total
		B	B2	B3	
CALCANEUM	CUT	1			1
CALCANEUM Total		1			1
ISCHIUM	CUT			1	1
ISCHIUM Total				1	1
PHALANGE	CHARRED	5			5
PHALANGE Total		5			5
RIB	CUT	3			3
	SAWN		1		1
	CUT; SAWN	1			1
RIB Total		4	1		5
TIBIA	SAWN		2		2
TIBIA Total			2		2
Grand Total		10	3	1	14

The cattle (*Bos*) elements in Table 72 show an interesting pattern. These elements show no evidence that axes were used during butchering. Instead, knife cuts were found on one calcaneum, one ischium and three rib fragments. Sawing was noted on two tibia fragments, and both cut and saw marks were observed on one rib fragment. The five phalange fragments were charred. The sample size is small, so strong statements about butchering differences between strata cannot be made.

Table 73: 1990 Stratum B Genus *Ovis*: Butchering Marks by Excavation Unit.

SKELETAL ELEMENT	MARKS	STRATUM		Grand Total
		B	B2	
MANDIBLE	CUT	1		1
MANDIBLE Total		1		1
METACARPAL	SPIRAL FRACTURE		1	1
METACARPAL Total			1	1
RIB	SPIRAL FRACTURE		1	1
RIB Total			1	1
TIBIA	SPIRAL FRACTURE	1		1
	CHOPPED; SPIRAL FRACTURE	1		1
TIBIA Total		2		2
VERTEBRA	CUT	1		1
VERTEBRA Total		1		1
Grand Total		4	2	6

The deer remains included only one element that showed possible butchering. The humerus fragment exhibited a spiral fracture, indicating that the bone was broken when it was still fresh.

The butchering of sheep is not especially patterned, to judge from the available data. Cut marks were seen on a mandible fragment and the atlas vertebra. Both tibia fragments had been spiral fractured, and one had been chopped. Spiral fracture, i.e. fresh bone fracture, was seen on the rib and the metacarpal fragments from Stratum B2. A clear pattern cannot be discerned, other than to speculate that sheep were decapitated with a knife. Why one would chop a sheep tibia, or why tibiae, metacarpals and ribs would be broken while fresh remains unexplained.

The pig remains provide even less information. The proximal end of a right fourth rib in Stratum B2 had been cut, as had the first thoracic vertebra from Stratum B. The proximal right ulna fragment from Stratum B1 exhibited a spiral fracture.

The small sample of butchered elements provides only a little information. Wild animals do not appear to have been butchered in the same way as domestic animals. The spiral fractures of deer remains may even indicate that Aboriginal butchery, or an Aboriginal style of butchery, is represented. Chopping with an axe does not appear to any

extent on the domestic remains, and neither does sawing, although different portions seem to be represented in the 1990 deposits compared to those in the cellar feature. Knife disarticulation appears most commonly, and this is consistent with the cellar mammals, especially the sheep and pigs. Knife disarticulation of an ox, on the other hand, may even seem ambitious.

Table 74. 1990 Stratum B Ostichthys: Genus by Excavation Unit.

GENUS	STRATUM																		Grand Total				
	B										B1	B2				B4	B5						
	EXCAVATION UNIT										Total	Total	EXCAVATION UNIT				Total	Total					
	N1023/W973	N1023/W975	N1024/W976	N1025/W973	N1025/W975	N1027/W973	N1028/W976	N1029/W973	N1029/W975	N1030/W974			N1031/W973	N1031/W975	Total	N1027/W973				N1029/W973	N1030/W974	N1031/W973	N1031/W975
APLODINOTUS		1		1			1				1	4			2		1	3				7	
APLODINOTUS?															1			1				1	
CATOSTOMUS	1											1			1							2	
COREGONUS		1					1		9			11			3			3				14	
COREGONUS?									1			1			1							2	
ESOX										1		1										1	
ESOX?													1	1								1	
ICTALURUS			1								1			1				1				2	
ICTIOBUS									1		1											1	
LARGE															1		1					1	
MOXOSTOMA?	1											1										1	
PERCA							1				1			2			2					3	
STIZOSTEDION									1		1											1	
STIZOSTEDION?														2			2					2	
(blank)	13	1		2	2	1	2	1	18	1	1	42		1	22	2	1	2	28	1	1	1	72
Grand Total	15	3	1	3	2	1	4	1	31	1	2	65	1	1	1	35	2	2	3	43	1	1	111

The fish remains from the 1990 excavations are presented by genus, stratum and excavation unit in Table 74. Row totals reveal that 65% of the remains could not be identified to genus level. Fragmentation is suspected as the cause of this situation. Known or suspected *Coregonus* (whitefish) remains are the most frequent identified elements (n=16). *Aplodinotus* (drum) remains are half as frequent (n=8). *Perca* (perch), *Esox* (pike), and *Stizostedion* (walleye) contributed 3 elements each to the assemblage.

Stratum B contained almost 60% of all fish remains, while Stratum B2 contained almost 40%. Strata B1, B4 and B5 contained only one element each; a suspected pike element in B1, and unidentified elements in the other two. Within Stratum B, N1030/W974 m contained almost half of all remains (n=31), and N1023/W973 m contained a further 15. Although 13 of these 15 elements were unidentifiable, there was one *Catostomus* (sucker) and one tentative *Moxostoma* (redhorse) in this unit. In N1030/W974 m, 10 known or tentative *Coregonus* elements were found, along with one each of *Esox*, *Ictobus* (Bigmouth Buffalo) and *Stizostedion*. In Stratum B2, unit N1029/W973 m contained 35 of the total 43 elements. Twenty-two of the 35 elements were unidentified, but the remainder consisted of drum, sucker, whitefish, catfish, perch and walleye.

The wildly uneven distribution of fish remains between units in both Strata B and B2 is noteworthy but difficult to explain. The relative concentration of fish elements in Stratum B2 is particularly astonishing, and it suggests some highly concentrated deposition of fish remains.

The information in Table 75 shows which elements of which genera were recovered in each stratum. The striking feature of this table is the large proportion of scales. Thirty-four scales were recovered, including all but one whitefish element, one of the two pike elements, the only Bigmouth Buffalo element, the only Redhorse and perch elements, one of the three walleye elements, and 11 of the elements not assigned to a genus. In contrast, six vertebrae and seven cranial elements were found. Drum is the only fish represented by no scales and any appreciable number of body elements. Even then, when pterygiophores and fin spines are removed, the remaining elements are two otoliths, one supracleithrum and one vertebra. One quadrate was recovered that is thought to be whitefish, as were a catfish cleithrum and palatine, two walleye vertebrae, and one posttemporal, two vertebra and 22 ribs not assigned to genus. Ribs, though not distinctive of any genus, appear to be over-represented in Stratum B, and undetermined elements appear to be over-represented in Stratum B2. Whitefish seem to be over-represented in Stratum B, although elements as abundant as scales can easily give that impression, especially in such a small assemblage. No elements exhibited cut marks.

The fish assemblage from Stratum B in 1988 consisted of 18 elements belonging to Perciformes (Drum, Walleye/Sauger, Perch) and Cypriniformes (Catfish and Suckers, including Redhorse). A similar picture is seen in the 1990 assemblage, in which these same families and genera account for 20 of the 38 elements assigned firmly or tentatively to genus. The 16 whitefish elements and two pike elements do not follow the pattern found in 1988. Both these latter two fish are native to lakes, not turbid rivers such as the Red-Assiniboine Junction. These remains, therefore, were deliberately brought to the site. The majority of the Perciformes and Cypriniformes are locally available for at least part of the year, although walleye were probably only available at St. Andrew's rapids. The preponderance of whitefish and pike in Stratum B compared to B2 may indicate that ongoing activities, rather than specialized one that resulted in the deposition of B2, accounted for the importation of lake fish.

The disparate assemblage sizes from the cellar feature and from the 1990 excavations makes reliable comparisons difficult. A second difficulty is the lack of identifications for scales found in the cellar feature. The one major apparent difference is the presence of *Coregonus* (whitefish) in the 1990 excavations, based almost exclusively on scales, and their absence from the 1988 cellar deposits. Instead, the cellar produced numerous *Hiodon* (Goldeye), which were identified by elements that did not include scales. The possibility exists that fish caught near the Forks were brought to the fort, eaten, and discarded as complete skeletons whereas fish procured more distantly were brought as fillets. This hypothesis would account for the presence of a range, albeit small, of skeletal elements from Drum, Catfish, and perhaps Walleye and the presence of a number of ribs, pterygiophores and scales of lake-dwelling fish. If fish fillets were being brought to the fort, one wonders if they were fresh or preserved.

GENUS	SKELETAL ELEMENT	STRATUM					Grand Total
		B	B1	B2	B4	B5	
APLODINOTUS	DORSAL FIN SPINE	1					1
	OTOLITH	2					2
	PTERYGIOPHORE			2			2
	SUPRACLEITHRUM	1					1
	VERTEBRA			1			1
APLODINOTUS Total		4		3			7
APLODINOTUS?	PTERYGIOPHORE			1			1
APLODINOTUS? Total				1			1
CATOSTOMUS	PTERYGIOPHORE	1					1
	SCALE			1			1
CATOSTOMUS Total		1		1			2
COREGONUS	SCALE	11		3			14
COREGONUS Total		11		3			14
COREGONUS?	QUADRATE	1					1
	SCALE			1			1
COREGONUS? Total		1		1			2
ESOX	SCALE	1					1
ESOX Total		1					1
ESOX?	VERTEBRA		1				1
ESOX? Total			1				1
ICTALURUS	CLEITHRUM			1			1
	PALATINE	1					1
ICTALURUS Total		1		1			2
ICTIOBUS	SCALE	1					1
ICTIOBUS Total		1					1
LARGE	FIN RAY			1			1
LARGE Total				1			1
MOXOSTOMA?	SCALE	1					1
MOXOSTOMA? Total		1					1
PERCA	SCALE	1		2			3
PERCA Total		1		2			3
STIZOSTEDION	VERTEBRA	1					1
STIZOSTEDION Total		1					1
STIZOSTEDION?	SCALE			1			1
	VERTEBRA			1			1
STIZOSTEDION? Total				2			2
(blank)	POSTTEMPORAL	1					1
	RIB	16		5	1		22
	SCALE	8		3			11
	UNDETERMINED	17		18		1	36
	VERTEBRA			2			2
(blank) Total		42		28	1	1	72
Grand Total		65	1	43	1	1	111

Three Pelecypoda remains were found, one each from Stratum B, B2 and B5. The Stratum B specimen was a valve and umbo of *Amblema plicata* (Threeridge mussel). The Stratum B2 specimen was a valve of *Proptera alota* (a freshwater mussel). The third

specimen was not identifiable. These shellfish remains appear to be incidental inclusions with the cultural remains.

### Summary

The faunal remains from 1990 were not especially abundant. Few identifiable bird taxa were noted, and eggshell was the most common avian remain. The latter remains are thought to represent food waste. Wild mammals were confined primarily to Stratum B, but domestic mammals were also found in Stratum B2. Large mammals appear to have been slaughtered nearby, or whole sections of them were transported to the site. The presence of sheep in both Strata B and B2 indicates that the ubiquitous Stratum B received sheep remains after 1833 and that Stratum B2 was deposited, at least in part, after that date. Butchering appears to reflect the middle and later stages of animal processing, as revealed in the cellar feature. Chopping is virtually absent on mammals, but cutting and sawing is most common. Recognizable meat cuts are not evident, and this may be due to the small mammalian assemblage or to the practices of the time, i.e. roughly contemporaneous with Components II and III in the cellar feature. Considering the stratigraphic associations between the cellar feature and the 1990 excavations, the latter explanation seems less likely than the former. Fish remains mirrored to some extent both the 1988 Stratum B assemblage and, because it was so large, the 1988 cellar assemblage also. The small sample size of 1990 fish precludes strong conclusions, but the apparent importance of scales, particularly those of whitefish, suggests that both local and more distant fish resources were being used at the site.

### Summary

The objective of the 1990 excavations was to find the remains of the building that stood above the cellar feature excavated in 1988. No foundations, corner supports, pilasters or the like were found. The construction-related materials in Stratum B2 suggest a type of construction that is not typical of early fur trade posts. Whereas the latter were usually "Red River Frame Construction", i.e. post on sill, and caulked and surfaced with a mud and straw "chinking", the evidence of brick and mortar construction, and the relative scarcity of mud and straw chinking, indicates that the building above the cellar was restored, or otherwise massively overhauled, sometime around 1848. Why these late deposits sit directly on sterile river silts is unexplained, but major earth removal would be required to create this situation. The truncation of Stratum B variants in the northwest portion of the 1990 excavation area indicates that later extensive earth removal also occurred. The dip in the strata between N1024 and N1027 (Fig. 9) suggests that either a natural depression occurred there or that purposeful excavation was undertaken before the Stratum B variants were deposited.

The detail of Captain Moody's 1848 map (Guinn 1980: Fig. 20) shows that the ground sloped downwards immediately to the west of the fort. Also, Guinn's (1980) Figures 15, dated 1847, and Figure 33, dated 1872, indicate that the north riverbank changed from steeply eroded near the Red River to gradually sloping along the Assiniboine River. Thus, at the time that Component IV and the Stratum B variants were deposited, the ground west of the fort is recorded as sloping downwards, and the situation had changed

little by 1872. The downward slope to the west, seen in Figure 10 above, may therefore be the same slope as depicted by two artists within a year of each other in the mid-nineteenth century.

Where then were the other buildings inside the palisade, where was the palisade itself, and which building and cellar were excavated in 1988 and 1990? If the slope shown in the mid-nineteenth century is the slope seen in N1025 W975-977, the palisade wall was not observed during excavation, unless the dip seen between N1024 and N1027 at W976 is the filled-in remnant of the palisade ditch. The absence of the palisade by 1847-48 is indicated by the contemporary sketches, but Rindisbacher's 1820 sketch (Guinn 1980: Fig. 11) shows the palisade as it stood during NWC occupancy of the fort. Francis Heron reported that the 1826 flood destroyed substantial portions of the palisade and the "new" blockhouse that had been built in the summer of 1825 on the front of the fort (Guinn 1980:65). There is no record of the palisade having been rebuilt, but Moody's map (Guinn 1980: Fig. 20) depicts an "Old Blk House" as the most northwesterly building of Fort. This structure did not stand at the edge of the downward slope to the west seen in the N1025 profile, but south of this structure stood a building that apparently did. The present evidence is not sufficient to determine which, if either, of these buildings was encountered by the excavations in 1988 and 1990. It seems true, however, that the building was not the Court House pictured by Moody, which is most likely the building with two chimneys shown in Guinn (1980 Fig. 15) and on the left of the flagpole in Rindisbacher's sketch (Guinn 1980: Fig. 11). This conclusion, if true, runs counter to the evidence from Upper Fort Garry where a cellar is only known from beneath the Chief Factor's house (Monks 1992:46).

## CONCLUSIONS

The two seasons of excavation, and the countless hours of subsequent analysis, recording, research and writing, have answered some questions, failed to answer others, and raised new ones. It is still not known which building the cellar feature lay under, nor were the outlines of that building detected. Neither is the relationship clear between the 1988 cellar feature and the cellar encountered by Parks Canada researchers in 1984 (Priess et al. 1986). Were these cellar features located under residential houses of important individuals, as at Upper Fort Garry and other HBC sites, or were they placed under other types of buildings?

The 1988 cellar feature clearly belonged to the HBC for most or all of its use-life, and the deposits within it reflected its early change, ca. 1826, from storage to refuse disposal. A series of four components were detected on the basis of datable objects that spanned the period from at least 1821 to at least 1852. During that time, changes in technology and subsistence resources were evident. Fur trade pursuits were supplemented over time by agricultural and commercial practices as the Red River Settlement changed in the direction of an urban center that would become Winnipeg. Remains of a grist mill were located in Trench 7, further documenting the shift that occurred within the settlement as it evolved from fur trade center to urban center. The distribution of materials in Stratum B generally, except for those deposits called B above the cellar feature and in the 1990 excavations, show the scatter of early nineteenth century remains that one typically associates with the fur trade.

Further research at the Forks should concentrate on the area around the two cellar features, specifically on connecting them and determining structures with which they were associated. From there, excavations should move outwards radially in order to intersect and identify the other buildings within the fort and the outlines of the fort itself. Above all, the area should be protected from land-altering activities, both natural and cultural. The archaeological record of the Red-Assiniboine junction has been accumulated over thousands of years, and only proper protection will allow us to add our component without destroying those that came before.

## ACKNOWLEDGEMENTS

The Forks Renewal Corporation (FRC) kindly permitted excavations in 1998 and 1990, and it supplied a host of infrastructural goods and services. All of these contributions are gratefully acknowledged. Mr. Campbell McLean, Chairman of the Forks Renewal Corporation, and Ms. Shelley Bellchamber, our main contact person at the FRC, are sincerely thanked for their support. The agreement of Mr. Ovide Mercredi, Mr. Phil Fontaine, and Mr. Jim Bear to allow the excavations to proceed is also gratefully acknowledged. Financial support for the 1988 excavations was provided by the Social Sciences and Humanities Research Council, grant #410-88-0700. Subsequent financial support for various aspects of the research was provided by the Manitoba Museum of Man and Nature Fund, the Manitoba Heritage Federation, the Government of Canada's Challenge Program and the University of Manitoba's Department of Anthropology, Research Grants Committee, Research Development Fund, and Academic Development Fund.

The 1988 field crew consisted of Assistant Supervisors Debbie Ferguson, Sharon Hickson and Debbie Skomorowski. Field assistants were: Sharon Appel, Jodi Cassidy-Zywina, Jeannine Covan, Luke Dalla Bona, S. Evans, Jules Giasson, Michele Hobson, Susan Hossack, Rebecca Luhn-Jensen, Debbie Leclair, Charles (Cooki) Lumsden, Steve Lundin, Arda Malikian, John McIver, J. McKenna, Gwen Rempel, Deanna Schuerbecke, Paul Speidel, Kevin (Woody) Spice, Kevin Wallbridge, Jon Williamson. The 1990 Assistant Supervisors were Stan Freer and Karen Shearer. The field crew consisted of Caroline Ackerman, Chris Cox, Darryl DeRuiter, Kathy Hellner, Susan Horodyski, Helen Lount, Karen McClelland, Mary Jane McKiel, Karen McSwain, Paul Morrissette, Renée Nault, Adrian Robertson, Gio Robson, Dan Ryall and Samanti Warusawithana.

A number of people contributed significantly outside the field seasons. Luke Dalla Bona provided valuable assistance with Hypercard that facilitated lab processing and cataloguing of materials from both years. Luke also prepared many of the maps, profiles and floor plans that appear in this report, while other illustrations are based on his work. Bonnie Brenner and Kate Peach put in untold hours identifying, cataloguing, and researching over and above the materials they actually used in their theses. In particular, Bonnie identified all the ceramics, and Kate identified all the fauna, including the re-checking of identifications made by Darryl DeRuiter and Tina Jongsma as part of a graduate faunal course under Haskel Greenfield. Leigh Syms and Kevin Brownlee, Curators of Archaeology, and Val McKinley, Curatorial Assistant, Manitoba Museum of Man and Nature, were always helpful with archaeological and curatorial matters and have been especially patient with my use and abuse of the CHIN system. Leo Pettipas, Gary Dickson, and Pat Badertscher, successive Provincial Archaeologists at Manitoba's Historic Resources Branch, have been generous with the resources at their disposal in support of this project. Jason Stratman, Library Assistant at the Missouri Historical Society, generously provided information on the late nineteenth century St. Louis brick manufacturers. Al Patterson and Bob Talbot, University of Manitoba Imaging Services, photographed the artifacts and fauna and provided technical assistance with finalizing the images.

I wish to thank Ray Wiest and Ellen Judd, successive Heads of the Department of Anthropology, for their support of this research and of me. I especially want to thank my

two children, Denise and Reed, for their patience while I dragged them along on this and other excavations during their summer holidays. I also owe a great debt of gratitude to my wife, Janet, for her patience and support over the past three summers as I laboured to finish this report.

## REFERENCES CITED

- Brenner, B. L. A.  
1998 *Archival and archaeological perspectives on economic variability in the Red River Settlement, 1830-1870*. M.A., University of Manitoba.
- Brenner, B. L. A. and G. Monks  
2002 Detecting Economic Variability in the Red River Settlement. *Historical Archaeology* 36(2):18-49.
- Buckley, W.  
1968 Society as a complex adaptive system. In *Modern systems research for the behavioral scientist*, edited by W. Buckley, pp. 525 pp. Aldine, Chicago.
- Clarke, D.L.  
1968 *Analytical Archaeology*. Columbia University Press, New York.
- Deck, D. and J. Ward  
1999 The Little Britain Site Reveals Early Manitoba History: The 1996 Field School and the 1997 Public Archaeology Project. *Manitoba Archaeological Journal* 9(2):26-87.
- Fifik, G.  
1987 *Fabrics from Upper Fort Garry: Unusual Archaeological Evidence*. MA Thesis, University of Manitoba.
- Forsman, M.  
1977 Riel House Archaeology. *Manitoba Archaeological Quarterly* 1(1):3.
- Freer, S.  
n.d.a *The Garden Site*. Manitoba Historic Resources Branch.  
n.d.b *The Rat River Site*. Manitoba Historic Resources Branch.
- Godden, G. A.  
1964 *Encyclopaedia of British Pottery and Porcelain Marks*. Bonanza Books, New York.
- Godfrey, W. E.  
1979 *The Birds of Canada*. National Museum of Natural Sciences, National Museums of Canada., Ottawa.
- Guinn, R.  
1980 *The Forts at the Junction of the Red and Assiniboine Rivers* Research Bulletin no.128. Parks Canada.

- Karklins, K.  
1982 *Glass Beads*. History and Archaeology Series, No. 59. National Historic Sites, Parks Canada, Environment Canada. Ottawa.
- Kroker, S.  
1989 *North Assiniboine Node Archaeological Impact Assessment*. The Forks Renewal Project.
- Kroker, S. and P. Goundry  
1993a *Archaeological Monitoring and Mitigation of the Assiniboine Riverfront Quay*. The Forks Renewal Corporation.  
1993b *A 3000 Year Old Native Campsite and Trade Centre at the Forks*. The Forks Renewal Corporation, Manitoba Culture Heritage and Tourism, Historic Resources Branch, Winnipeg.
- Larcombe, L.  
1988 *Ceramics as Indicators of Economic Variation in the Red River Settlement*. MA Thesis, University of Manitoba.
- Livermore, C.  
1976 *Lower Fort Garry, The Fur Trade and the Settlement at Red River* Manuscript Report No.202. Parks Canada, Department of Indian And Northern Affairs, Ottawa.
- Loewen, B. and G. Monks  
1986 *A history of structures at Upper Fort Garry, Winnipeg, 1835-87*. Parks Canada Microfiche Report Series, No. 330.  
1988 Visual depictions of Upper Fort Garry. *Prairie Forum* 13(1):1-24.
- Lunn, K.  
1985 *Goods on the Bay: Material Culture from Archaeological Investigations of York Factory Hudson's Bay Company Post 1788-1957*. Parks Canada Microfiche Report Series No. 347.
- McLeod, D.  
1982 *Archaeological Investigations at the Delorme House (DkLg-18), 1981*. Papers in Manitoba Archaeology, Final Report No. 13. Department of Cultural Affairs and Historical Resources, Winnipeg.  
1983 *The Garden Site, DkLg-16: A Historical and Archaeological Study of a Nineteenth Century Metis Farmstead*. Papers in Manitoba Archaeology, Final Report No. 16. Department of Cultural Affairs and Historical Resources, Winnipeg.  
1985 *A study of Metis Ethnicity in the Red River Settlement: Quantification and Pattern Recognition in Red River Archaeology*. MA Thesis, University of Manitoba.

McLeod, D. and E. Hart

1986 Excavations at St. Peter's Dynevor. *Manitoba Archaeological Quarterly* 10(4):1-15.

McLeod, D. and L. Seyers

1988 Archaeological Research at Lane's Post on River Lot 139, Parish of St. Francois-Xavier. *Manitoba Archaeological Quarterly* 12(3):3-23.

Monks, G.

1982 Preliminary Report on Archaeological Investigations in Bonnycastle Park, 1981. *Manitoba Archaeological Quarterly* 6(3):46-61.

1983 Preliminary Report on Archaeological Investigations in Bonnycastle Park (Upper Fort Garry), 1982. *Manitoba Archaeological Quarterly* 7(4):3-29.

1984 Preliminary report on archaeological investigations in Bonnycastle Park (Upper Fort Garry), 1983. *Manitoba Archaeology Quarterly*, 8(3-4):30-50.

1992 The symbolic communication of architecture: a case study. *Historical Archaeology* 26(2):37-57.

1999 Excavations at the Little Britain Site: the 1997 Field School. *Manitoba Archaeological Journal* 9(2):88-113.

Peach, A. K.

2000 *Faunal exploitation at the Forks : 3000 B.P. to 1860 A.D.* M.A., University of Manitoba.

Petch, V.

n.d *The Lagimodiere Homestead*. Manitoba Historic Resources Branch.

Priess, P., P. Nieuwhof and S. Ebell

1986 *Archaeological Investigation of the Junction of the Red and Assiniboine Rivers*, 1984 Research Bulletin no.241. Environment Canada, Parks Service.

Ross, A.

1857 *The Red River Settlement: Its Rise, Progress, and Present State*. Smith, Elder and Co., London.

Scott, W. B. and E. J. Crossman

1973 *Freshwater Fishes of Canada*. Fisheries Research Board of Canada, Bulletin 184, Ottawa.

Seyers, L.

1988 *Faunal Analysis of Upper Fort Garry: Social and Economic Implications*. MA Thesis, University of Manitoba.

Steer, D., H. J. Rogers and G. J. Lutick

1979 *Archaeological Investigations at the Hudson's Bay Company Rocky Mountain House, 1835-61 (Vol. 1)*. Parks Canada. Copies available from Manuscript Report No. 445.

Stratman, J.D.

2003 Personal Communication.

Sussman, L.

1978 *A Preliminary Catalogue of Non-Copeland Patterns Associated with the Hudson's Bay Company*. Parks Canada Manuscript Report Series no. 430, pt. 2.

1979 *Spode/Copeland Transfer-Printed Patterns Found at 20 Hudson's Bay Company Sites*. Canadian Historical Sites, Occasional Papers in Archaeology no. 22.

1985 *The Wheat Pattern: an Illustrated Survey*. Studies in Archaeology, Architecture, and History. National Historic Parks and Sites Branch, Parks Canada, Environment Canada, Ottawa.

Walker, I. C.

1971 Nineteenth Century Clay Tobacco Pipes in Canada. *Ontario Archaeology* 16:19-35.

# MANITOBA ARCHAEOLOGICAL PERMITS

## **Heritage permit for searching or excavating.**

53 No person shall search or excavate for heritage objects or human remains except pursuant to a heritage permit and in accordance with such terms and conditions as may be prescribed by the minister and set out in or attached to the heritage permit.

From The Heritage Resources Act

\* \* \* \* \*

Archaeological sites constitute a very fragile resource that requires careful and often expert handling. Archaeologists have devised a wide range of methods and techniques whereby archaeological information can be gathered from the field in an orderly and scientific fashion. Inasmuch as such activity invariably affects resources of public concern, that is, archaeological sites and objects, it is incumbent upon the Province to ensure that these resources are handled properly via these special methods and techniques. To that end, anyone who wishes to collect or excavate for heritage objects is required under law to obtain a permit from the Province to do so. This allows the appropriate officials to specify the nature of the work to be done in light of the collector's or excavator's qualifications. Such a permit may also stipulate that the results of the investigation must be reported to the appropriate provincial agency. If all findings are so reported, there again exists the opportunity to have new information organized, synthesized and presented to the public through such media as the Manitoba Archaeological Journal.

Adapted from "Heritage Objects: A Precious Resource for All Manitobans".

For further information, contact:

Historic Resources Branch  
Main Floor, 213 Notre Dame Avenue  
Winnipeg, MB R3B 1N3  
Web site: <http://www.gov.mb.ca/chc/hrb/index.html>  
E-mail: [hrb@gov.mb.ca](mailto:hrb@gov.mb.ca)  
Phone: (204) 945-2118