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THE BUFFALO LAKE MÉTIS SITE: A LATE NINETEENTH CENTURY SETTLEMENT IN THE PARKLAND OF CENTRAL ALBERTA

Human History
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Cover

Standing is Abraham Salois, Métis hunter and trader, founder of the hivernant camp on Buffalo Lake. Also in the photograph are John Pritchard (who saved Mrs. Gowanlock and Mrs. Delaney at Frog Lake in 1885), his wife Rose Delorme, young son Salomon Pritchard, and infant daughter, Marie-Rose (Mrs. Joseph Sayers). The photograph was possibly taken at Red River in 1875. Photograph courtesy of Doug Light, Doug Light Collection, Calgary.

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ABSTRACT

Archaeological Research at a nineteenth century Métis settlement on Buffalo Lake in the Parkland region near Stettler, Alberta, began in 1970 and continued until 1983. This historic focus was soon accompanied by research on prehistoric sites in the immediate vicinity, producing a chronology that now spans approximately 8,000 years.

At the Buffalo Lake Métis site, excavations were conducted at five cabin locations and surface collections made at several others. Although no building foundations were entirely excavated, substantial data on sub-structures were obtained, along with a wide range of late nineteenth century artifacts and abundant faunal remains

Architectural data, notably the evidence for rejuventation of fireplaces, suggests seasonal occupation of substantial cabins ranging up to about 550 square feet in floor area. Pits initially dug to obtain plastering clays seem to have been subsequently used for storage and finally for disposal of refuse. Although data on village patterning is not conclusive, cabins appear to have occurred in clusters following a ridge of high ground that may have formed virtually an island during periods of high water. A total of more than 80 cabin localities have now been identified, confirming documentary indications that the village was a very large one, supporting at certain times a population of over 1,500 people.

Among the wide range of artifact types recovered, several have been particularly useful for comparative analysis. Ammunition and ignition parts suggest a wide range of firearms, perhaps the most sophisticated arsenal in the northwest at this time. A large number of ceramic patterns compared through Lynn Sussman's work suggest the relationship of this site to various others in Canada.

Historical research, particularly in the Oblate archives and in various government documents, proceeded concurrently with archaeological analysis. This research complemented archaeology in the delineation of superstructure types current at the time, and it provided extensive data on population sizes, distributions, and movements in the Battle River area. It suggested substantial activity prior to the eventual intensive occupation of the Buffalo Lake site between 1872 and 1878. Notably, it focused on several major crises that conditioned the initial settlement of Buffalo Lake, its continued occupation, and its eventual abandonment. These were the devastating smallpox epidemic of 1870, the threats of native warfare that preceeded the treaties, climatic calamities, and the substitution of Canadian government for the Hudson's Bay Company administration.

Specialized analyses focussed on the textile remains from the Buffalo Lake site, directed largely towards identification of fibers and weaves, and the large mammal remains, with respect to ethnic identification and ethnic or functional distinctions within the site itself.

Although studies at Buffalo Lake were curtailed, they have provided a considerable substantive data base, as well as defining a number of problems for future investigation.

ACKNOWLEDGEMENTS

THIS MONOGRAPH IS DEDICATED TO THE MEMORY OF THE LATE PERCY RIDER OF DONALDA, ALBERTA, A LONG-TIME RESIDENT OF THE BUFFALO LAKE REGION.

Field work at the Buffalo Lake Métis site was funded entirely by the Department of Culture and Multiculturalism, through the Provincial Museum of Alberta budget. The initial inspection of the site was made with Bruce McCorquodale, at that time Head Curator of Human History, who also supported early phases of the field work.

A number of field crews were involved in various stages of the Buffalo Lake area projects. Those who assisted Doll and Kidd on the Métis site were as follows:

1970. David Crone (field supervisor for part of the season), David Gay, Archie Herbert, Rod Keith, and Sid Stephen.

1971. Ken Arnold (field supervisor for part of the season), David Gay, Nora Hurlburt, and Rhonda Penny.

1972. José Villa-Arcé.

1973. Anne Carscallen, Gil Freshauf, Molly Johnson, and Tarjei Tennessen.

1974. Lorie Le Maguer and Robert Lewis.

1975. Randy Kerr, Ruth McConnell, and Shirleen Smith. Kathy and Charles Beck provided volunteer assistance for a weekend.

1976. Nora Hurlburt and Shirleen Smith.

1978. Naomi Mullins, Duncan Perry, Shirleen Smith, and Wes Zwicker. Yvonne Marshall and Lynn Krieger assisted for a time as volunteers.

1982. Jane Dale and Elizabeth Mann.

1983. Anne Reynolds.

A number of individuals assisted the Buffalo Lake project in other ways, but in particular we would like to thank the following. Members of the Rider family (which settled in the Buffalo Lake area about 1909), the late Percy Rider, Astrid, Ron, Dick, and Linda, provided permission to work on their land or leasehold, accomodations for the crews, information, and continued friendship. Herbert Hayes and the late Arthur Hayes, also long-time residents of the area, afforded us assistance and additional information.

Permissions were also afforded us by Alberta Energy and Natural Resources, administrators of the Public Land Act, and the County of Stettler No. 6. A number of other individuals were involved in the Buffalo Lake project, but not specifically the Métis site, and their assistance has been acknowledged elsewhere (Doll 1982).

Hugh Smith, Curator of Mammalogy at the Provincial Museum, provided continuing assistance with the faunal identifications. Rod Burns, Ornithology Program, Provincial Museum, assisted in the compilation of additional wildlife data. Julie Hrapko, Curator of Botany, and her

assistant Evanne Beacham conducted a botanical survey of the Buffalo Lake area, with implications for the historic as well as prehistoric sites. Tom Court and Lillian Hill of the Human History Section aided in hardware and textile identification.

Research was also assisted by a number of individuals, notably, John Patrick Day (in addition to his authorship role), Coreen Chiswell, Mary Malainey, and Anne Reynolds. Comparative material on buttons was provided by Janice Smith, Curatorial Technician, Historic Costume and Textile Study Collection, Faculty of Household Economics, University of Alberta. Doug Cass and Eric Gormley, Archivists, Glenbow Archives, assisted in the study of manuscript material. Barry Agnew, Curator of Military History, Glenbow Museum, provided access to firearm collections and photographs of the Henry rifle. Doug Light of Calgary provided genealogical information and a photograph of Abraham Salois. Dr. Richard G. Forbis, Department of Archaeology, University of Calgary made available for study J. Elliott's material from the Cypress Hills. Cypress Hills Provincial Park made available R. Bonnichsen's material. Tom Maccagno made available his collection of Métis artifacts from Lac La Biche. Through a collaborative project, John Foster, Department of History, University of Alberta, with his associates Louise Zuk and Robert Beal, provided bibliographies and historical background, notably in the area of genealogy. In the course of the project, a number of Archival resources were drawn upon, directly or indirectly:

Archives Archévêche de St-Boniface
Archives Soeurs Grises de Montreal, Province St. Albert
Edmonton City Archives
Glenbow Alberta Institute Archives
Hudson's Bay Company Archives
Montana Historical Society, Division of Archives and Manuscripts
Provincial Archives of Alberta
Provincial Archives of British Columbia
Provincial Archives of Manitoba
National Archives of Canada
Saskatchewan Archives Board
University of Alberta Archives

Photographs for various preliminary reports were prepared by Karl Kaesekamp, Jim Blower, and Dennis Hyduk. Artifact photographs in the present monograph were prepared by Bill Mok and other staff of Audio-Visual and Exhibit Services, Public Affairs Bureau.

The maps, plans, and profiles were drafted by Judith Golub, with some of the earlier work by Cathy Clement and others. The cover photograph was retouched by Bob Plummer, and the cover layout was prepared by Carolyn Lilgert. Typing of various relevant documents was accomplished by many individuals, notably Marcella Cristi and Laura Pretula, with assistance by Karen Gartner, Karen Park, Krys Piwinski, and Mary Rennie. Elizabeth Macpherson checked the tables and other sections of the manuscript.

Publication of this monograph was greatly facilitated by Philip H. R. Stepney.

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CHAPTER I

INTRODUCTION

Background and Objectives of the Buffalo Lake Project

The Buffalo Lake Project as a whole was aimed at documenting and developing a regional archaeological chronology for the Parkland of central Alberta. As established previously, "a general ecological framework was used as a guide to research strategy since the location of plant and animal resources, in very large measure, determined the location and distribution of past human settlements" (Doll 1982:4).

Research to date has documented six archaeological periods at Buffalo Lake. The earliest, defined as the Pre-Archaic Period, became manifest approximately 8000 years B.P. Evidence of human occupation on Buffalo Lake at that time was excavated from a deeply buried stratum of the Boss Hill Site, FdPe 4, Locality 2 (Doll 1982). Later prehistoric occupations on Buffalo Lake were documented at two localities of the Boss Hill Site. Here, four additional archaeological periods (Frison 1978) were represented, including the Early, Middle, and Late Plains Archaic Periods, as well as the Late Prehistoric Period.

Of particular concern was the sixth or Historical Period. The Provincial Museum of Alberta began research in historical archaeology in 1965. In conjunction with the Historic Sites program at the Museum, the focus was on the early fur trade (as outlined by Kidd 1987:15-17), with initial attention towards:

(1) the positive identification, by date and company, of various fur trade sites;

(2) the recovery in context of a representative collection of early fur trade artifacts, also facilitating the achievement of objective 1.

With respect to the individual historic site (Doll 1985:1), archaeological methods were used to emphasize the following:

(1) the delineation and identification of structural features within the site;

(2) the identification of construction methods used;

(3) the establishment of the relationship of features within the site;

(4) the reconstruction of the past environment and subsistence base through the recovery of faunal remains and other organic material;

(5) the qualitative confirmation or delineation of human behaviors within the site.

With the establishment of a data base and in conjunction with inter-site comparisons and archival data, Provincial Museum researchers attempted:

(1) to construct a regional chronology of fur trade artifacts with reference to form and manufacture, and perhaps of structural types in the late eighteenth and early nineteenth centuries;

(2) to formulate a set of criteria to distinguish the major trading companies, in particular the North West and Hudson's Bay Companies prior to 1821;

(3) to produce a more sophisticated analysis of faunal materials and of the environment base of the fur trade, using studies of butchering methods, quantitative analysis, etc.;

(4) to develop a demographic analysis delineating the fur trade post population and its composition, with some reference to the use of impinging environments and the interaction with satellite populations such as Métis hunter's camps, temporary Indian encampments, etc.

It was within the context of these objectives that research in historical archaeology was undertaken at Buffalo Lake. This involved the systematic archaeological and historical documentation of a late nineteenth century Métis wintering village situated on the northeast shore of Buffalo Lake, and located about one kilometre north of the Boss Hill prehistoric site (Figures 1-3, 5 a).

Marcel Giraud, a noted ethnohistorian, realized almost 30 years ago the ecological importance of the Parkland to the Métis plain hunters, a theme which was constant throughout the archaeological research at Buffalo Lake:

> Everywhere, winter-rovers (Hivernants) were attracted by these wooded, undulating lands which dominate the horizons of the prairies (like Touchwood Hills and Boss Hill) because of the resources which they offered, and in spite of the uncertainty created by the vagaries of climate [Giraud 1954:13].

The objectives of the field work at Buffalo Lake included the archaeological documentation of specific clusters of surface features

thought to be the remains of cabin structures, notably to demonstrate or disprove cultural uniformity and contemporaneity.

In addition to architectural documentation, the controlled recovery of artifacts, floral remains, and faunal remains would provide a sound basis on which to formulate an economic and ecological interpretation of site use. Of equal importance was to be the ethnohistoric documentation of the late nineteenth century Métis, primarily the plain hunters or winter rovers (hivernants), as well as evidence for other groups or individuals using the site. In fact, the raisons d'être for the Buffalo Lake Métis site were not solely economic, but also socio-political and ecological.

Historical documentation of hivernants wintering on Buffalo Lake is sparse for reasons to be suggested in Chapter II of this monograph. It is primarily confined to unpublished letters and diaries of the French Oblate missionaries and a few published abstracts from their annual reports. There are also published references by a few traders and North West Mounted Police officers who visited the wintering village on Buffalo Lake. Lastly, there are the parish baptismal and marriage records and the Métis scrip application records, which enable researchers to document the presence of a specific person at Buffalo Lake.

Research at Buffalo Lake

In 1959, Dr. Richard G. Forbis, then of the Glenbow Foundation, initially recorded the Buffalo Lake Métis site, assigning to it the Borden designation FdPe 1 (Figure 3). The existence and location of the site, however, had been well known among the local farming community for at least sixty years prior to its "offical" recording, notably among the Hearonemus, Rider, and Hayes families (Doll 1983:3).

Although portions of the site had been plundered by unscrupulous "pothunters," and there has been some inevitable loss to agriculture and natural decay, it is to the very great credit of the present land owners, the Rider family, that a good portion of the main site still exists. Portions to the south of the main site have been protected by the Hayes family as well.

It was not until 1970 that professional archaeologists began excavations at the site. Initiated by Robert S. Kidd, Curator of Archaeology at the Provincial Museum of Alberta, preliminary excavations were conducted with David Crone in 1970 and Kendal Arnold in 1971 on two of the more badly disturbed cabin localities (Cabins 1 and 2, Figure 4).

Maurice F. V. Doll, under the general supervision of Kidd, took responsibility for site survey in 1972 and the field operations of the Buffalo Lake Project in 1973, with the initial test excavations of Locality 1 of the Boss Hill prehistoric site. Towards the end of that field season, follow-up excavations were conducted at the Cabin 2 locality of the Buffalo Lake Métis site, specifically the excavation of a small refuse pit.

In April of 1974 Doll, acompanied by Rod Burns of the Ornithology Program at the Provincial Museum of Alberta, conducted a migratory waterfowl and general wildlife survey along Buffalo Lake as part of a

comprehensive approach to archaeological research. Several of the noted species were among those whose remains were excavated from the Métis site. In July of the same year, four days were spent mapping surface features of the Métis site. In the dense aspen woods and tangled underbrush, 36 depressions, eight identified fireplace mounds, and nine other mounds were recorded, excluding the previously excavated Cabins 1 and 2. This total represented essentially 19 clusters that might be identified with separate buildings (Figure 4).

During the 1975 field season a relatively undisturbed feature cluster (designated Cabin 3) was selected by Doll for excavation. The cluster included a relatively large mound and two adjacent depressions (Figure 4).

In 1976, a short period of time was spent at the Buffalo Lake Métis site, and the remainder of one large depression associated with Cabin 3 was excavated.

During the 1977 season the majority of field work concentrated on prehistoric occupations at the Boss Hill site, with only monitoring of the Buffalo Lake Métis site.

During the early summer of 1978, part of a previously undisturbed portion of the Métis site was destroyed by heavy equipment operated by the County of Stettler. The Archaeological Survey of Alberta and the County of Stettler were notified, and excavation for a public garbage dump on the Métis site ceased. At least one cabin and associated features were destroyed. Remaining surface features were mapped and the disturbed area surface-collected, but field work focused on the excavation of an early component of the Boss Hill site, Locality 2 (Doll 1979).

The field season of 1979 again focused on the excavation of prehistoric components at Locality 1 of the Boss Hill site.

Field work at the Buffalo Lake Métis site was resumed in 1982, at which time the partial remains of a presumed Métis cabin (designated Cabin 4) were salvaged prior to total destruction by bulldozer (Figure 4). Four depressions and a mound were excavated. During the latter part of the same field season excavations were initiated on the remains of one of the better preserved feature clusters designated Cabin 5 (Figure 4). Only three one metre by two metre test units were excavated during the time remaining. Unfortunately the Archaeological Survey of Alberta did not renew the Provincial Museum's Research Permit and, accordingly, no further excavations were possible.

Subsequent field work was concerned with identifying and mapping surface features with an eye to determining the extent of the wintering site and estimating both the number of cabins and the size of the population that wintered at Buffalo Lake (Figure 4).

In addition, supporting botancial field work was carried out by Julie O. Hrapko, Curator of Botany at the Provincial Museum of Alberta, in May, 1975, June, 1978, and September, 1979. Some data from Hrapko's field work have been previously published (see Doll 1982:Appendix I).

The Buffalo Lake Region

The Buffalo Lake region of south-central Alberta (Figures 2, 3, 5 a) is characterized by a glaciated landscape with numerous moraine and outwash features. The Buffalo Lake moraine system, in which the Buffalo Lake Métis site is found, covers the entire eastern part of the Central Highland physiographic division and extends beyond it to the north and east (Stalker 1960:8-9). Four other adjacent Métis sites are also located in wooded areas of similar topographic relief: Salois' Crossing, near Duhamel, Tail Creek, Todd's Crossing near Ponoka, and possibly Dried Meat Hill (Figure 1).

Buffalo Lake, the largest lake in the area, is of an interior drainage type and represents the local base level of deposition. It lies on the Edmonton Formation and receives considerable amounts of spring water. Over most of its area, Buffalo Lake ranges from .61 to 1.52 metres in depth. In some portions a maximum depth of 5 metres has been recorded (Allan and Sanderson 1945:17).

The Buffalo Lake Métis site lies within the Parkland belt at approximately 53° 47' north latitude and 46° 30' west longitude (Figures 1, 2, 5 b). The climate of the area is generally characterized by short, hot, and sunny summers, and cold, dry winters. The highest temperatures during the summer exceed 38°C while, in the other extreme, temperatures have been recorded below -51°C for the winter (Kendrew and Currie 1955:124; Longley 1972:23).

There is relatively small effective precipitation in the region, with a mean annual average of approximately 406 mm (Kendrew and Currie 1955:131). About 30 per cent of this total is due to snow.

The Aspen Parkland that characterizes the Buffalo Lake area contains two major ecosystems: woodland and grassland. These tend to form a patchwork of aspen stands and irregular open grassy areas. Scattered throughout are several bodies of water dominated by Buffalo, Boss, and Lynn Lakes, and including numerous smaller permanent and temporary sloughs (Figure 3). One would expect to find great diversity in the floral assemblage, a diversity and richness which is also reflected in the faunal assemblage of the area (see Doll 1982 for a detailed discussion).

The Buffalo Lake Métis Site

The remaining visible portion of the Buffalo Lake Métis site is situated on a rise of land strategically located between Buffalo and Lynn Lakes. During periods of high lake levels, this rise forms a peninsula with very limited access by land (Figures 3, 4, 5 a). According to local residents, this "peninsula" contained the only major source of logs for construction of houses after the turn of the twentieth century. The forest growing in the area subsequent to the abandonment of the site by the Métis hivernants grew uninhibited, being protected by the surrounding lakes and sloughs until destroyed by a major fire in 1910, which also destroyed what remained of any cabin superstructures. The peninsula, except for areas under cultivation, has become reforested since the end of the Second World War.

The distribution of mounds and depressions, which constitute those portions of postulated cabin structures visible on the ground surface, is confined to the reforested areas. The largest concentration conforms closely to the top of a horseshoe-shaped ridge (Figure 5 b) located along the northwest corner of the NW 1/4 of Section 11, Township 41, Range 20 west of the Fourth Meridian and the southeast corner of the SW 1/4 of Section 14, Township 41, Range 20 west of the Fourth Meridian (Figure 4). The central portion of the horseshoe is occupied by a permanent slough. To the north and west of the ridge are numerous permanent and temporary ponds and sloughs.

The locations or former locations of approximately 62 cabin features (defined for purposes of this chapter as single features or clusters indicative of former structures) have been confirmed in these two quarter sections, with 38 found in the NW 1/4 of Section 11, and 24 in the SW 1/4 of Section 14. Of the 38 possible features identified in the NW 1/4 of Section 11, 36 are more or less undisturbed. This total also includes three features that were selected for excavation and designated Cabins 1, 2, and 3 (Figure 4).

Of the 24 cabin features identified in the SW 1/4 of Section 14, 19 are still more or less undisturbed.

A number of cabin features were also found on adjacent quarter-sections. The NE 1/4 of Section 11 contained four cabin features, two of which were undisturbed. The SE 1/4 of section 14 contained six cabin features, four of which were undisturbed. In this area two cabins were partially excavated and designated Cabins 4 and 5 (Figure 4). Cabin 4 was subsequently destroyed by a bulldozer during brush-clearing operations.

The NW 1/4 of Section 14 contained five cabin features, all of which were destroyed between 1910 and 1920 in the process of clearing the land for cultivation.

The NE 1/4 of Section 14 also contained five cabin features, three of which are still in evidence.

The NW 1/4 of Section 13 had one undisturbed cabin feature, while the SW 1/4 of Section 2 had five undisturbed cabin features.

Lastly, the NE 1/4 of Section 25, Township 40, Range 20 west of the Fourth Meridian has the remains of two cabins. Thus, we have been able to document the locations of approximately 90 cabin features (Figure 4), 74 of which are still relatively undisturbed and worthy of archaeological investigation.

Archaeological Field Methods

Field methods employed during the course of the Buffalo Lake project from 1970 to 1982 were generally consistent (see Doll 1977, 1979, 1982, 1983, and Doll and Kidd 1976). The area selected for excavation was surveyed and mapped using a transit and compass. A grid in metres or feet was superimposed over the area and tied in to an arbitrary base-line oriented magnetic north-south. This base-line was in turn tied in to the surveyed quarter-section lines.

Excavation proceeded by natural and/or cultural stratigraphy, while at the same time maintaining a continuous series generally of ten centimetre or six inch arbitrary levels. Trowel and dustpan excavation techniques were used predominantly. Most of the earth was screened through one-quarter inch or finer mesh. Provenience of all artifacts was recorded in three-dimensions and by unit, stratum, level, and feature.

The various levels, walls, and non-portable artifacts or architectural features were recorded through plan-views and profiles in conjunction with black-and-white and color photographs. Level bags were taken to the archaeology laboratory at the Provincial Museum of Alberta for processing. Some earth fill from refuse pits was collected and fine-screened for the recovery of microfauna, floral remains, and tiny artifacts such as seed beads. All materials were catalogued according to the Provincial Museum accession system. Faunal remains were identified using the Museum's reference collection and through the kind assistance of Hugh Smith, Curator of Mammology.

Historical Research

Concurrent historical research accompanied the archaeological investigations, with initial concentration on published sources, including local histories that related to Buffalo Lake. Unpublished documents consulted were primarily manuscripts contained within the Oblate Collection at the Provincial Archives of Alberta. However, as the project progressed, this research was intensified and broadened, particularly after 1982 when collaboration began between Museum staff and John Day, a researcher who had spent ten years examining documents pertinent to the history of Alberta during the nineteenth century.

In August, 1984, an historical research contract was jointly awarded by Alberta Cultures and Multiculturalism's Historic Sites Service and the Provincial Museum of Alberta to John Foster of the Department of History, University of Alberta. Foster and his assistants compiled an annotated bibliography and a summary history of the Buffalo Lake Métis Site (Beal et al. 1986).

Through this and other cooperative efforts of all researchers, oral histories and genealogies have also been added to the record.

Authorship

In the following chapters, some variation in perspective, style of reporting, and conclusions may be noted, and, therefore, the specific responsibilities of the three authors should be clarified at the outset.

Chapter I was written primarily by Maurice Doll.

Chapter II and Chapter III are abbreviated versions of an approximately 250 page monograph prepared by John Patrick Day, and intended for publication in full elsewhere.

Chapter IV was authored by Maurice Doll, the primary investigator of the Buffalo Lake Métis site. This chapter deals with Cabin 3. Since this was the most productive cabin with respect to both features and

artifacts, it was decided to describe it first, out of numerical and (excavation) chronological order. This procedure, it was felt, would facilitate subsequent typology and description.

Chapters V and VI, dealing with Cabins 1 and 2, were authored by Robert Kidd, who also edited the manuscript.

Chapters VII, VIII, and IX, dealing with Cabins 4 and 5 and with various surface collections, were authored by Maurice Doll.

Chapter X was authored primarily by Maurice Doll. Chapter XI was prepared by all three authors.

Appendix I, on the Buffalo Lake Métis site textiles, was authored by Barbara F. Schweger, and Appendix II, on the Buffalo Lake faunal material, was authored by Brian P. Kooyman.

CHAPTER II

THE BUFFALO LAKE METIS SITE, HISTORICAL PROLOGUE, THE SITE BEFORE 1872

The Buffalo Lake Métis site is of great historical as well as archaeological interest. It was among the largest centres of population in the North-West of Canada (Figure 1), at least on a seasonal basis, during a decade of great cultural changes. To a historian, the site presents an opportunity for three fundamental tests. The first test relates to North-Western Society as it has been understood from studies of the Red River Settlements, the Riel uprisings, and a "Métis" nation. The second test involves a clear understanding of the changes in the 1870's, and the ability of a society in transition to adapt to such changes.

A third test is central to this monograph. The strictly historical data define and illuminate many of the archaeological findings. At the same time, the archaeological data serve to confirm, deny, or modify the working hypotheses gathered from documents. The reason for an artifact's presence is a historical question, but such historical questions frequently need archaeological answers. Hence, both disciplines require each other for a full understanding of the site. Conclusions reached about this site may modify investigations of other historical communities and archaeological sites.

The historical record has its difficulties. It is highly specific in some areas and vague in others. A critical use of documents on individuals and of genealogies gives a reasonably accurate account of the people at Buffalo Lake. A chronology of some detail can be assembled, although it has to be gathered from a very large number of sources. Such matters as architecture and the occupancy of house units remain highly problematic.

Although all sources together produce a generally harmonious picture, their nature is imperfect. Very specific local data are available, but with rare exceptions, Buffalo Lake is not a direct topic of discussion: it is mentioned, alluded to, or otherwise indirectly noticed. Where highly specific data exist, they are for apparently similar sites such as the South Saskatchewan colonies at St. Laurent (Figure 1). However, as there were important differences between sites, comparisons must be carefully made.

A second consideration involves the evaluation of both the direct and indirect evidence for the people at the site. The North West Half Breed Scrip Applications (hereafter referred to as Scrip Applications), claims for river lots and quarter-sections (both in the Interior Department Papers), and memoirs of people present are essentially retrospective: referring to events some years after they happened. Although indispensible, they must also be treated with care, especially since the use of some place names was highly general (Scrip Applications).

A third consideration arises from the existence of similar, but possibly not functionally identical, sites described at the time. Frequently, one must reason from them by analogy.

THE UPPER SASKATCHEWAN AREA PRIOR TO 1870

Buffalo Lake and its people were within the Upper Saskatchewan District, comprising the western half of the Hudson's Bay Company's Saskatchewan District (Figure 1; Census Enumeration 1881; Arrowsmith Map in Thomas et al. 1967:49; Hardisty Papers, Items 291, 315). In practical terms, the International Boundary was its southern limit, the Continental Divide its western limit, and a rough line through Jasper, running alongside the Athabasca River, and through Athabasca Landing was its approximate northern limit (Census Enumeration 1881). The eastern boundary fluctuated; but for purpose of this discussion a line drawn just east of the Victoria (Pakan) settlement seems best.

This geographical area included two distinct Indian "nations," with an ill-defined neutral territory between them. The Plains, basically equivalent to "Palliser's Triangle," was the domain of the Blackfoot Confederacy. The Parkland belt, the mountains, and parts of the northern woods had a very mixed people; almost any group which was not Blackfoot, Beaver, or Slave made up this society. Although degrees of "nativeness" might be recognized, the distinctions between Cree, Assiniboine, Chipewyan, European, or any mixture of these were relatively unimportant in comparison to the distinctions between the Upper Saskatchewan people and the Blackfeet.

The reason for this state of affairs had been well defined before 1870. The two "nations" (or "confederacies") were frequently at war with each other. Warfare was sometimes interrupted by truces, or agreements of varying permanence (Palliser 1859-1860:186; Dempsey 1984:14). It was not thought an exaggeration by Europeans to call these agreements "peaces" and "treaties" (Edmonton Post Journals, December 9-10, 1862; Taché 1869:264). Some of the neutral territory was disputed and some agreed upon. It should be remembered, however, that this territory was not at all well defined, and a sort of "front" moved northwards or southwards as the fortunes of war dictated. (Sissons 1946:163-167; Butler 1873:386; Edmonton Post Journals, 1857-1872).

The nominal rulers of the country, the Hudson's Bay Company, and later the Canadian government, could be compared to panes of glass laid on top of this polity (Shalka 1973; Ray 1981). They were recognized as agents of the Crown, and at least the Hudson's Bay Company's officers could act as mediators. From the Company's point of view, its own interests were not difficult to enforce as long as local realities were respected. Its writ was absolute within its posts, and banning an individual from them made him a literal "outlaw." However, the Company's interest was trade, and this was beneficial to all (Ray 1981). The benefits of a transfer from the Hudson's Bay Company to Canada were not so clear, and concern was expressed (Edmonton Post Journals, April 13, 1871; Morris 1880:169-171; Grandin, Transcripts, Vol 9, January 18, 1870, November 27, 1870).

THE ORIGINS OF THE UPPER SASKATCHEWAN PEOPLES

Fur companies penetrated the Upper Saskatchewan in the late 1790's (Johnson 1967), and their employees included both European and mixed-blood peoples. The latter were normally the children of European fathers and native mothers, but the term was also applied to people who were the offspring of parents from different native nations. Although affiliation with the fur companies made both groups unwelcome visitors in the southern Plains, individuals who had become well known and who could explain their purposes were accepted better by the Blackfeet than were the Crees. As early as the 1820's, two mixed bloods and former Company employees, James Bird and Hugh Munro, were able to move about freely in the Blackfoot country.

Upon the amalgamation of the Hudson's Bay and Northwest Company in 1821, many of the employees became "freemen," which term meant they were no longer under contract. These people maintained themselves by hunting, fishing, and doing various odd jobs for the Company. The whereabouts of these freemen in the 1820's and early 1830's is not easily determined, although passing reference suggest Northwest Company posts abandoned in 1821, the Beaver Hills, Jasper (Edmonton Post Journals, 1820-1822; Scrip Applications), and perhaps at Pigeon Lake (Rundle 1977:371, 399). However, for uncertain reasons, virtually all Métis freemen left for Red River in the winter of 1834-1835 (Scrip Applications; Simpson 1821-1854, Correspondence, Rowand to Simpson, January 10, 1834 and January 7, 1835).

There was a devastating smallpox epidemic in 1836 and early 1837 among the Blackfeet, the Stoneys in the Banff-Morley-Rocky Mountain House district, and in the Lower Saskatchewan districts between Battleford and Cumberland. No reports reached company officers at Edmonton until some months after the epidemic had died down (Simpson 1821-1854, Rowand to Simpson, November, 1837), and estimates of death cannot be stated with any accuracy. Upon hearing of this plague, it appears that the freemen at Red River decided to return to the Upper Saskatchewan. In any case, various Upper Saskatchewan settlements came into existence about 1838 to 1840 and were occupied, essentially continuously, from that time onwards (Scrip Applications).

If the available records (Lac Ste. Anne, Liber Animarum, 1842-1859; Rundle 1977:344-405) can be relied upon, it appears that the settlements of these freemen expanded very quickly, both in terms of natural growth and through migration. Possibly a combination of a relatively empty country, an absence of serious illness, and prosperity either by hunting, trading, or Company employment may have been the cause. It appears that the 1850's saw some crisis or other, particularly between 1856 and 1858, but after that point, the natural rate of increase produced a doubling of the population in the Upper Saskatchewan between 1861 and 1870.

In addition, there was a very large increase in population due to immigration. Contrary to the impressions of scholars who followed in Marcel Giraud's footsteps (Giraud 1945:1010-1014), these freemen were not

so much associated with a westward movement from Red River, as with a southward movement from the northern districts. Most persons who came at this time from Red River or the Lower Saskatchewan districts had actually been born in the Upper Saskatchewan, or in the north, notably the Lesser Slave Lake and Peace River areas (Scrip Applications). Only in the 1860's does there seem to have been any substantial migration of people born in Red River or the Lower Saskatchewan.

Consequently, the Upper Saskatchewan people made up a distinctive society, essentially indigenous in origin. By 1870, a substantial number of mixed-blood families had been present either near Edmonton or Peace River for at least three generations, and the consequent patterns of intermarriage make present scholarly debates on cultural inheritance relatively redundant (Scrip Applications; Lacombe 1890). This, combined with the continuing problem of intermittent warfare with the Blackfoot Confederacy, produced a more homogeneous society than may have been the case in other parts of the Canadian Plains, particularly Red River.

What of the more "native" people? The Lac Ste. Anne Liber Animarum (1842-1859) reveals that although most of "mixed-blood" families involved Stoney (Assiniboine) or Cree ancestors, there was a reasonably large minority of families with Blackfoot, and a few with Chipewyan or Beaver connections. Families with Blackfoot relatives included some names particularly associated with Buffalo Lake, names such as Bird, Munro, and Dumont (Day 1986).

There appears to have been rather little contact with those settlements on the South Saskatchewan associated with Louis Riel until the 1880's (Scrip Applications; Edmonton Bulletin, January to July, 1885; Codex Historicus de St. Albert, January-July, 1885; OMI, Dossiers Personnels, Secular Priests, Bellevaire 1885). The people who migrated into the Upper Saskatchewan from the Lower Saskatchewan were largely from Lac La Biche, Whitefish Lake, Fort Pitt, and Fort Carlton (Scrip Applications; Hardisty Papers, Items 146-150, 556-564). The "classical" Métis movement, a general retreat from Manitoba westwards and from Batoche farther to the north and west, happened later than theory suggests, about 1882-1884 (André 1870-1884; Lestanc 1910; Grandin, Transcripts, Vol. 4).

THE NATURE OF SETTLEMENTS IN THE UPPER SASKATCHEWAN PARKLAND

There are three matters which require some attention before the discussion of Buffalo Lake itself. One derives from a misunderstanding of the people, the second from a misunderstanding of documents, and a third from an unchallenged historical theory.

First of all, the people of the Upper Saskatchewan, particularly the mixed-bloods, formed a community that was not identical with the community at Red River. Explorers such as Palliser (1859-1860:26), clergymen with Red River experience such as Taché (1869:123) and Grandin, and travellers prior to and during the 1870's such as Southesk (1875), Milton and Cheadle (Cheadle 1863; Milton and Cheadle 1865), the 1862 Overlanders (Wade 1931: 44-50; McMicking 1964:5), George Grant (1873), and W. F. Butler (1872), were in general agreement that, as a whole, the

Parkland people were less quarrelsome and defiant than the Red River community. In general they were aware of events at Red River, however, at least through free traders, boatmen, and freemen, although there was a time lag.

Second, the settlements whose foundation occurred from 1838 onwards were an initiative by the newly arrived (or returned) freemen rather than missionary foundations. The documents of the missionaries themselves support this contention: the missions went where people were already to be found (Taché 1866; 1869:104-118; Thibault 1841-1850; Phillipot 1947-1948; Lacombe 1890). The settlements were normally placed at lakes with good fishing, and served largely as a piéd-à-terre for periods between hunts.

Third, there remains a question of the degree of "civilization" that existed in these Parkland settlements. Travellers' accounts tend to be very favourable, at least in the cases of St. Albert and Lac Ste. Anne. Internal evidence from scrip returns suggests that Victoria's English Protestants were well-educated. This is somewhat contrary to historical orthodoxy, which, although prepared to grant Red River at least a "neo-archaic" civilization, considers that the Upper Saskatchewan community was too isolated and too small in numbers to be other than "primitive" (Morton 1969:1-4; Owram 1980:25; Stanley 1936). This writer believes that the orthodox idea is very faulty, and some consideration of the means of making a living therefore becomes necessary.

The first mode of living in the Upper Saskatchewan District was based on hunting and fishing, usually supplemented by trading excess supplies with the Hudson's Bay Company or with other traders. Some dwellers in the Boreal Forest, particularly the Chipewyans and some of the Lac St. Anne Stoneys, hunted on an individual basis. These people were not part of the culture built around buffalo hunts, and the buffalo's demise left them relatively unaffected (Hardisty Papers, Item 1209; Indian Department 1878-1889; 1879-1898, specifically 1879-1881; Blanchet 1886; Trade Commissioner 1874-1893, D.20/14, f. 222).

Two quite different Parkland groups were involved with buffalo hunting: the free residents of the Upper Saskatchewan, and employees or contractors to the Company. The latter were employed to keep the area's posts self-supporting, and also to supply posts to the far north and across the mountains (Edmonton Post Journals; Simpson 1821-1854; Northern Department Council 1868-1880; Hardisty Papers, Item 1077). The freemen, who appear to have been much more numerous than most estimates have indicated, were competitors by their very numbers. The latter were hunting in very large parties at least from the 1830's, and their level of organization was sufficiently high to impress most newcomers to the region (Steele 1915:84-90; Rémas 1860-1868, Item 1055; Sissons 1946:89-94; Jamieson 1953; Erasmus 1976:200-208; Charette 1976:84).

One point must be made clear. Both the hunters and many outside observers were very much aware of the buffalo's probable extinction well before it happened. There had been shortages of buffalo in the 1830's and there were two particularly bad years in succession (1848 and 1849). By this time, Rowand (Simpson 1845-1859, June 24, 1848, June 20, 1853) no longer considered the buffalo's ultimate extinction in doubt. Although the sight of a buffalo herd was still awesome, few travellers from Paul

Kane (1968:89) onwards failed to predict their fate. The Blackfeet were of the same opinion when Palliser's expedition passed through their territory; moreover they were already hoping to replace the hunts with an agricultural way of life (Palliser 1859-1960:7, 10-11; Erasmus 1976:60; Spry 1968:60). The same comment constantly recurs in contemporary reports of speeches by native leaders. There seems to have been a miscalculation by most, however, in that the extinction took place much more quickly than was expected.

At least two other modes of life were becoming alternatives to hunting: trading and freighting, which were apparently developing rather early, certainly not later than the 1840's (Simpson 1823-1859, December 21, 1853, Rowand to Simpson; Charette 1976; Griesbach 1958 a, b; Weekes 1939; Erasmus 1976). Although trading in opposition to the Hudson's Bay Company was frequently strong, particularly at Lac La Biche, most traders or freighters also began working as free contractors for the Company. A run of very poor years from June, 1862, to June, 1867, led to a rapid abandonment of this arrangement, and from that time onwards, most preferred to avoid dependence on the Company.

Finally, there was the possibility of agriculture. Palliser observed as early as 1857 that thirty families (possibly 180 people) at Lac Ste. Anne were entirely dependent on agriculture. In addition, there were many people who were growing gardens and root crops when they were not hunting, and, indeed, the hunts were timed to accomodate the care of crops. Rundle noted vegetable gardens and some wheat-growing at Pigeon Lake in 1847, where there were natural breaks in the forest. St. Albert was intended to replace Lac Ste. Anne as an agricultural area and, while estimates vary, between 100 and 300 people there were living purely by this means.

There is little direct objective evidence of the effectiveness of these efforts, prior to the 1880's. However, both Indian Department Reports and Interior Department records (Indian Department 1879-1898; Interior Department Nd., Vol. 273, File 42767/1; Edmonton Bulletin, July 4, 1891; July 25, 1892; December 10, 1894) suggest that the people of the Upper Saskatchewan were no less successful than American or Ontario settlers during the early 1880's.

Thus, the people of the Upper Saskatchewan were expecting very great changes, and some effort was being made to adapt to a new way of life, well before 1870.

THE CRISIS OF 1870

The year 1870 precipitated or foretold the changes expected. War and tumult were followed by an epidemic no less devasting, though on a smaller scale, than the Black Death had been in the Europe of the 1350's. Rumored and real war and tumult resumed, famine threatened, and the form of government changed.

The Smallpox

Of these events, the smallpox epidemic was the most decisive. Indeed, among the Blackfoot Confederacy, it is still "the Great Plague"

(Dempsey 1965; Kathleen Day, personal communication), the illness never surpassed. Even in areas less badly affected, the memory of it was still very clear, and a matter of regular conversation as late as the 1940's (Day 1985).

The illness itself remains somewhat mysterious. The general symptoms suggest that the strain was viral, and very closely resembled the 1836-1837 smallpox strain. Neither was a normal smallpox. Vaccination had been in practice during both epidemics, and as it did not prevent attacks, the Hudson's Bay Company's officers believed the vaccine was defective. However, further examination of the documents produces an alternative conclusion: normal vaccination prevented death. Apparently, by December, 1870, it was evident that survivors of the 1836-1837 disease were immune, and, at this time, observers noted that the disease particularly attacked younger people and recent immigrants.

The symptoms were consistently described. The first indication was a headache, ranging from negligible to severe, but not an obvious cause for alarm. However, within a day, the victim became suddenly weak, and within a short time (not more than twelve hours afterwards) a very high fever developed. The victim felt a burning sensation, and became extremely sensitive of touch. This last symptom marked the point at which the sores that led to subsequent scarring appeared. The crisis of life or death followed very shortly. A survivor needed four to six weeks to attain any semblance of health.

The disease was not only severe in the short run, but it normally led to a prolonged weakness of the body's entire system, and at least some people were permanently affected. There were usually bad cases of rheumatoid arthritis, and the entire circulatory system was generally affected. The doctors of the 1890's described the circulatory illnessess as "bizarre" (Grandin, Transcripts, Vols. 1-3,; Vol. 5, Part 7). It is possible that the very high incidence of lung disease and scrofula among treaty Indians (Lac Ste Anne, Liber Animarum, 1842-1859; Végreville 1883-1893; 1894; Indian Department, 1879-98, specifically 1883-1898) and the sometimes fatal effects of alcohol on the native people arise from the same prolonged weaknesses (Hudsons Bay Company Post Journals, various posts, especially Rocky Mountain House; Griesbach 1958:1-6; Fryer 1982; OMI Missions 1874:500-502; Dempsey 1961:12-13). Neither characteristic seems to have been present prior to 1870. It is also noteworthy that infant mortality rose sharply during 1870 (Christie 1871; Day 1985), although as far as one can judge, the life expectancy of adults remained constant.

The actual rates of death and survival are ultimately matters of conjecture, particularly since the numbers of Métis, Europeans, and Indians in the northern half of the Upper Saskatchewan District were normally underestimated. Ultimately, the best quantitative measurement of smallpox mortality is the proportion of surviving children (Dempsey 1961:12; Day 1985). This figure steadily declines as the people examined are located farther to the south. In the northern woods, where about 10% of all people died, 63% of the survivors were children. In the Edmonton, St. Albert, and Lac Ste. Anne areas, the individuals' records examined showed a death rate of 24%; and 57% of the survivors were children. But among the Blackfoot Confederacy, only 34% of the survivors were

children. Given this relationship, the mortality among the Blackfoot Confederacy peoples seems to have been about 40%. The Blackfoot tribe itself may have suffered a mortality of 50%. This is in accord with the chronology of the disease; it was first observed at Fort Union, Missouri, in the fall of 1869, was among the Blackfeet in spring of 1870, reached St. Albert in July, and Fort Carlton about October. Exposure, exhaustion, and disturbance were additional dangers on the Plains, and took their added toll.

In approximate figures, there were not fewer than 23,740 persons residing in the Upper Saskatchewan west of Lac La Biche in 1870, of whom 8,610 (35%) died between July and December, 1970. The Métis Scrip Applications suggest that 254 further deaths occurred in 1871, either because of the disease or its after-effects, compared to about 640 births. Thus there were about 15,536 people in the same district in December, 1871.

However, this only accounts for survivors. Both the Company and missionaries believed that the number of people who fell sick and recovered was roughly equal to the number of those who died.

Thus, of 23,740 people, between 15,020 and 17,210 were attacked by the plague. A certain number of the remaining people were immune by virtue of having suffered and survived the 1836-1837 smallpox. That number could be as low as 2,600 or as high as 3,600. In short, the number who escaped both smallpox epidemics did not exceed 6,100 and it may have been as low as 2,900.

Any disaster of this magnitude will have very great effects. One obvious result was that people outside the affected area were very unwilling to move in. At this crucial point in the North-West's development, therefore, the isolation of the Upper Saskatchewan people actually increased as far as Manitoba and the Lower Saskatchewan were concerned. However, contacts with the United States were not affected, since the Missouri Valley upstream from Fort Union had been infected at least six to eight months earlier.

Warfare

The casualties among younger adults and children were very high, and so the population abruptly became much older. The generation best suited for warfare, men between the ages of fourteen and approximately forty, was dramatically reduced. The Blackfoot Confederacy, as observed, was much more devastated than other peoples, and could not maintain a presence over as large an area; too many warriors were dead. The area of their domination retreated southwards to a line marked by the Red River, the Hand Hills, the South Saskatchewan River, and the west side of the Cypress Hills. The Blackfoot Confederacy was thus still able to maintain control over a sizeable, if reduced, territory.

The smallpox interrupted a possible war. In addition, it may well have had significant effects on the buffalo hunts after 1871. The decrease of the buffalo was a fact well-known among both the indigenous people and outside observers at least as early as Palliser's time (Hardisty Papers, Various Items). To some extent, at least the Parkland people were already seeking other ways to make a living. However, the

date of probable extinction was unknown, the best estimate being that of Isidore Dumont at Batoche, who placed it between 1885 and 1890 (Hardisty Papers, Item 143).

An obvious factor is that fewer buffalo were now required to feed the many fewer people. Occasional indications in the earliest issues of the Edmonton Bulletin and Indian Department documents leave the impression that the supply of whitefish for food also temporarily improved in the later 1870's and early 1880's. It might be argued, then, that decreased demand owing to the smallpox allowed the buffalo hunts to last a few more years on the Canadian Plains.

If the buffalo had vanished in 1874 or 1875 instead of 1879, it is quite possible that the consequences would have been much more serious. The Treaties between Canada and the native people would not have been in place, and, whatever their faults, the Treaties did provide a certain guarantee of available social resources. In 1879 there was a police force capable of reacting to events and there might not have been in 1874. The appearance of Sitting Bull's Sioux might then have been much more serious. By 1879, efficient grist and saw mills existed and the lack of these had previously discouraged agriculture (Grandin, Transcripts, Vol. 9, December 29, 1874). Finally, the people had a few more years to adapt to a society without buffalo.

Among these effects of the smallpox epidemic may be counted the possibility of a large, quasi-permanent dwelling place in the Buffalo Lake area. The inability of the Blackfeet to contest control of the district, the apparent stability of the new peace between the native peoples, and the continuation of large-scale buffalo hunts into the late 1870's made some sort of permanent gathering place in this district desirable.

Confederation

1870 is normally considered as a turning point in northwestern Canada, owing to that area's coming under Canadian jurisdiction. This is doubtless all the more so because of the Riel resistance. As an immediate event, the transfer of sovereignity had little regional importance, but it cannot be entirely ignored.

The transfer was expected. The Hudson's Bay Company officers were necessarily informed by the Company's headquarters in London, Montreal, York Factory, and Fort Garry. The Methodist missionaries were now supplied from Ontario, and the Roman Catholic Church had begun the process of instituting a regular diocese at St. Albert in anticipation of the transfer (Benoit 1904:564-565, 571-577).

However, the Upper Saskatchewan was still very isolated. At best, news from Red River took a month to arrive (North-West Territories Legislative Council 1873-1875, September 8, 1873). Lawrence Clarke, Chief Factor at Fort Carlton, for example, was able to deliver the only written news of Riel's actions in April, 1870 (Edmonton Post Journals, April 11, 1870).

In any event, the affairs at Red River were not of immediate interest. The Upper Saskatchewan would have been unable to do much about Riel's resistance in any event, and any reliable evidence suggests that the district either knew little of Riel, or disliked him.

Yet there were common concerns about Confederation. Although John McDougall was able to obtain an assurance of loyalty from the Stoney Chiefs on December 16, 1869, the leading men expressed uneasiness at the absence of a clear government policy (J. McDougall 1870:105-106). Councils were held among at least the Woods Cree, once it became safe to gather again, and several Chiefs, under Sweetgrass' leadership, met with Christie on April 13, 1871 (Edmonton Post Journals; Morris 1880:169-171). They expressed resentment that they had not been consulted with respect to the land which they continued to regard as their own, along with concern at the decline of all fur-bearing animals, the possible resumption of war with the Blackfeet, and the need for both instructional and material assistance in agricultural training. After a reasonably friendly meeting, Christie forwarded these matters on to the new Canadian authorities.

Similarly, on or shortly before December 18, 1870, Grandin presided over a general meeting of the residents of St. Albert (Edmonton Post Journals, December 18, 1870; Hardisty Papers, Item 140). The concerns of this meeting involved three matters. As at Red River, recognition of existing land holdings, and the establishment of a hunting and trapping reserve were desired. The meeting also codified the customary hunting laws, and may, like the St. Laurent Settlement, have proposed conservation rules. Unlike either of the other settlements, however, the meeting recognized the requirement that the new government be advised of these changes before their implementation. Although misunderstandings prevented a quick resolution, Governor Archibald was able to confirm all the St. Albert bylaws except the large reserve, which was opposed by the Company, the Canadian Government, and local non-Métis residents (Archibald 1871-1872; Christie 1872-1873; Hardisty Papers, Item 140).

The coming of regular government, and the confirmation of the community's rules resolved most uncertainties regarding the transfer of power. We may now turn to the Buffalo Lake community itself.

BUFFALO LAKE BEFORE 1872

Although the central years of this discussion lie between 1872 and 1878, the Buffalo Lake site's earlier history requires a brief examination.

Prehistoric occupation in the Buffalo Lake region was very long in duration (Doll 1982), perhaps because the district provided the necessary conditions for continuing seasonal encampment. It lay along a major bird migration route, and, like Beaverhills and Bittern Lakes, had an extensive supply of waterfowl. It seems to have had a good stand of wood, at least of willow and poplar, at all times. Palliser's expedition thought that it had been much more heavily forested in an unrecorded past. Thus, fuel, shelter, and building materials were present. It was perhaps the southernmost point for simultaneous supply of wood and water for people of the Plains, and the furthest southwards base for Parklands people.

As a documented historical entity, Buffalo Lake comes only slowly to notice. Its earliest appearance is as a passing reference in David Thompson's map and writings (Coues 1897). Hudson's Bay Company records deriving from Edmonton and referring to Company servants hunting in the 1820's and 1830's are consistent with the hunters being in the area of Buffalo Lake, but the place itself is not mentioned.

The Reverend Robert Rundle visited the Buffalo Lake vicinity at least twice, between September 18 and 27 and November 25 and December 1, 1844. On the first occasion, he was at a Cree camp led by Chief Maskepetoon. Although the exact place cannot be determined with confidence, it seems that Maskepetoon's camp was at or near Spotted Lake.

The November visit is even more obscure as to place. However, a diary entry refers to his returning to Edmonton on December 2 by sleighing across the lake and suggests that he had been at the northeast side (Rundle 1977:166-167). Both Crees and Stoneys were at this place.

The Reverend Albert Lacombe visited the Blackfeet at or near the lake some time prior to 1859 (March 1857, according to his reckoning). He thought there were ten camps of about sixty tents each. He was almost certainly at the northeast side of the lake on this occasion, as he came by way of the Beaver Hills and Beaver Lake (Lacombe 1890). He also visited the Tail Creek area, with a view to considering it as an alternative settlement to Lac Ste. Anne. However, he rejected it as lacking in suitable building wood, although he believed such wood could be floated down the Red Deer River (Spry 1968:60).

Palliser himself was at Boss Hill in June, 1859, although it was then unoccupied. The Rev. Thomas Woolsey was apparently in the region with Sampson's band in 1861 (Woolsey and McDougall 1861-1870), and in 1865, Lacombe visited a Blackfoot camp in the vicinity attacked by scarlet fever (Lacombe 1865; Scollen 1862-1864, December 29, 1864). He was present at a major Cree-Blackfoot battle a short distance northeast of Buffalo Lake on December 5, 1865 (Grandin, Transcripts, Vol. 23, May 24, 1866; Lacombe 1866).

Indeed, there are sound reasons for believing that a small permanent Métis settlement was taking form perhaps as early as late 1861. Several families of St. Albert origin claimed to have resided in the Battle River area throughout the decade, and at least two others had been among the Plains people for some years. The first group comprised the complex of "Dumont-Salois" families, held together by a tight series of intermarriages that can be traced back to the late eighteenth century. The two other families were those founded by Hugh Munro, and James "Jimmy Jock" Bird. The Dumonts, Munros, and Birds had married into Blackfoot families, but had not lost confidence among the Stoneys (Spry 1968; Edmonton Post Journals, ca. 1825-1870; Simpson 1821-1854; Rundle 1976; Scrip Applications; Lac Ste Anne, Liber Animarum, 1842-1859). The Salois family, itself closely intermarried to the Dumont family, had marriage alliances among the Crees and Saulteaux.

It must be pointed out, however, that the term "Battle River," as used by these families, could equally well describe any point on the river between Pigeon Lake and the upper end of Dried Meat Lake (Figure 1), as well as Buffalo Lake and the Beaver Lake-Bittern Lake areas.

One thing is very clear about this small Métis group: it was comprised of trading families. On occasion, they traded on the Company's behalf, at other times, on their own. In the 1860's, it would have been difficult for any family occupied with hunting or agriculture to remain here if it lacked the confidence of any of the upper Saskatchewan peoples.

At this time, Blackfoot parties headed for Edmonton, and Parkland parties headed for the Plains, would normally have passed Buffalo Lake (on either side) or Salois' Crossing (Duhamel). True Hudson's Bay Company trading servants, notably Olivier Bellerose, or free traders, such as the family of Moise Goulet (Edmonton Post Journals, 1857-1873; Northern Department Council, 1868-1880; Charette 1976) would be among the Parkland hunters. In the Battle River area the trading families would be in a good position to intercept trade going in either direction, and to anticipate their competitors' strength. As one missionary (Fourmond) observed, Salois' Crossing was "the entrance to the great prairie" (OMI Missions 1872:479ff).

Whatever doubts may exist about some trading nuclei are resolved by 1868. In that year three of the Dumont family of St. Albert sold their River Lots at St. Albert (Interior Department Nd., Vol. 322, File 75265; Vol. 328, Files 80042 and 81183; Vol. 359, File 95291).

From 1868 onwards, Lacombe, Taché, and Grandin all mention the existence of a mission building, described as a piéd-à-terre, at Buffalo Lake (Lacombe 1866; Taché 1869:70-71, 153; OMI Missions 1873:184-193). It probably was not occupied in winter, the missionary or missionaries apparently returning to St. Paul des Cris, or (less likely) St. Albert at the end of the September and October hunts (Grandin, Transcripts, Vol. 6, Parts 5 and 8; Vol. 15, Part 3, November 2, 1868). Nor was it occupied by whichever missionary stayed with the hunt itself (OMI Missions 1872:31). The Catholic Church could not have afforded to erect any such building (OMI, various references, especially Missions 1872:31; Grandin, Transcripts, Vol. 7, Part 12). It suggests, therefore, some existing settlement.

Consequently, two significantly different things distinguished Buffalo Lake before 1870. It apparently was already something rather more than a hunters' campsite: it had a trading nucleus with connections into nearby hunting groups. Second, its posession of even a seasonally occupied church (more exactly, a house-chapel) already speaks of the beginnings of social institutions.

The large hunting parties of freemen from the Parkland should almost be considered as "moving settlements," rather than nomadic communities. Indeed, the Reverend René Rémas observed that, during the fall hunt of 1864, he found that movement from place to place was the only distinguishing mark between the St. Albert-Lac Ste. Anne people and a normal county parish in France (Rémas 1860-1868, December 19, 1864).

The Reverend J.-Vital Fourmond's account of the disastrous hunt of fall, 1870 (OMI Missions 1872:477) allows a glimpse into the relationship between this postulated commercial centre and these very large parties of hunters. On September 3, the hunting camp had proceeded from Whitford Lake to Pretty Hill, five to six miles north of what is now Duhamel (OMI Missions 1872:480). Although some buffalo were north of the Battle River, the party hoped to cross before the smallpox intervened. About 60

lodges, 10 feet in diameter, were set aside for the sick. Fourmond had great difficulty in estimating their number. Although most lodges held about three to five sick people, there could be up to ten.

The camp slowly moved towards present-day Duhamel, but was attacked by a prairie fire on September 9. It was now quite impossible for the camp to do anything, as nearly everyone was sick or dying. Although the hunting party was able to reach Duhamel about September 20, nothing but prairie fires could be seen south of the river. The trading centre, therefore, was clearly south of Duhamel, presumably on the main trail going southwards. All of this would be consistent with either the Spotted Lake or the Boss Hill Sites.

The entire party retreated to Edmonton, where Chief Factor Christie had been able to obtain emergency food supplies. Louis Montagnais and most of his council chose to stay at St. Albert, but at the end of October:

> . . . the others, in larger numbers, resolved to build houses on the bank of the Battle River, thinking to find, in this country of hunters, a way of existing that they had only found with great difficulty everywhere else. At all times, these latter people only joined this party on the condition that a Father would be given to pass the winter with them [Fourmond, translation, OMI Missions 1872:505].

From later affidavits presented to the Department of the Interior (A. Salois, Claim to River Lot 46, Duhamel, in Interior Department Papers Nd., Vol. 315, File 73489; Fourmond 1871-1879), it seems very probable that this event was the founding of the settlement of Salois' Crossing (Duhamel).

Although valuable additional information derives from missionary sources, the Edmonton Post Journal best summarizes the year's events. The earliest hunting, which started in mid-February, was a qualified failure; the buffalo were plentiful, but very far out on the Plains. Reverend Alexis André confirms Fourmond in this. Based on André's report in the Post Journal on February 27, and remarks by Scollen, they reached a point at or near the north end of the Hand Hills (Edmonton Post Journals, February 27, 1871; Scollen 1862-1864; 1872b). The men who traded on behalf of the Company, John Rowland, John Fraser, and Louis Chastellain, had disappointing results, and apparently much of the freeman's buffalo meat had spoiled or there had been some illness among the buffalo. This last observation may be relevant to a discussion of the buffalo's ultimate disappearance.

The Edmonton Post Journals insist that although the hunters were having to go far to the south, a fixed camp existed three days away and the Company's trader had to be there.

The second regular hunt out of St. Albert (May-August) was moderately better; the buffalo seem to have come a little farther north than in March and were found in a line again starting at the north side of the Hand Hills, but stretching to the Neutral Hills, where it was reported that the St. Albert and Fort Pitt Crees and Métis found plentiful herds.

There were some obvious clouds on the area's horizons. The winter of 1870-1871 had not been easy for the group out on the Plains (Edmonton Post Journals, May 2, 1871; Campbell 1871:xiv), and in Scollen's view, heavy rains had made all the trails too difficult for a people weakened by smallpox and for their draught animals (Scollen 1872a). Both local and Red River traders were dealing in whiskey, while all travellers and freighters from the area were unwelcome in Red River, due to the epidemic (Edmonton Post Journals, July 31, September 18, 1871; Grandin, Transcripts, Vol. 23, December 22, 1871; Vol. 5, Part 7, St. Albert) To some observers, particularly Grandin, the limited success of the hunt, given that there were many fewer hunters, and many fewer dependants to feed, did not mask its continuing serious decline (Grandin, Transcripts, Vol. 4). At the same time, the heavy rains had destroyed the St. Albert Mission's new watermill (Edmonton Post Journals, November 19, 1871), which would discourage agriculture.

The district around the Buffalo Lake Métis site was the centre of considerable activity prior to 1872, but this activity apparently did not produce a site of the "classical" hivernant nature. The Buffalo Lake site appears to have had a distinctive identity, which drew a different type of inhabitant than, for example, those people of the Upper Saskatchewan who were drawn farther southwards in a contemporary migration towards the Bow River.

While recognizing that scholarly debate continues as to use of the term, the best meaning in this district is as follows. An hivernant (winterer) is a person whose involvement in the fur trade requires absence from his or her normal place of residence. A "wintering place" is the residential place during these involvements.

However, time and space restrictions were generally observed in the definition: normally, the cycle was one calendar year, and the word hivernant, by the 1870's, increasingly applied to hunting families who entered and left the Plains from reasonably permanent places in the Parkland and woods. Traders who accompanied organized hunts also qualified.

One of the best, if not the best, descriptions of a hivernant site appears in the Memoirs of the Reverend J.-J.-M. Lestanc (1910). John Kerr (Sissons 1946:88-104) is also useful.

The families at Wood Mountain (Figures 1, 6 a) were generally from Pembina and St. François Xavier Parish at Red River, and as far as Lestanc could tell, about 200 families were still "resident" in Manitoba in summer and winter. However, in summer, they lived in tents (which Lestanc distinguished from lodges or tipis), but, in October, a "wintering site" would be chosen where wood, pasturage, and buffalo were all nearby. His observations are here in translation:

> . . . and ten or twelve days later, each family had its cabin erected with floors, ceiling, door, a fireplace and a chimney, where they spent the winter comfortably enough. When they had a priest, they arranged to build him a church and a house . . . As soon as the cabins were finished, the men and boys left for the hunt with carts they had made themselves. . . .

> The elderly, the women, and children remained home. The elderly men and boys gathered and chopped wood, the women took care of the household and kitchen and scraped the skins. This scraping of skins was very long and very hard work.
>
> My ministry was a bit like the ministry of a parish curate, especially teaching catechism. One winter I taught a school with a score of children [Lestanc 1910].

After a full winter's hunting, robes and furs were taken back to Winnipeg in March and April by the Métis.

Two matters must be noted. Unlike a hunting camp, which was made up of lodges, carts, and horse pounds, the "wintering place" used houses. Unlike the Buffalo Lake site, a new "wintering place" site was built each year.

The people of this particular place dispersed to Turtle Mountain, Qu'Appelle, Batoche, and the Cypress Hills in 1877. They are not to be confused with the people of "Rivière la Biche," whom Lestanc also described.

In November, 1878, the people at "Rivière la Biche" (just east of Empress, Alberta, Figure 1) asked Lestanc to visit, which he did for a month. "Rivière la Biche" was a general term for several distinct places: the largest village had 20 Métis families, a smaller one had 11, and a third had three or four. The first was on the north side of the Red River and at its junction with the South Saskatchewan ("Belly" to Lestanc); the second was 10 to 12 miles east of that; and the smallest was on the south bank and still farther east. About 50 tents of Pagan Saulteaux and a small number of Crees, some Christian and some Pagan, made up two additional places. The people here were a contrast to those in the settlement previously described, both in their religious ignorance, and in their determination not to travel. From Lestanc's baptismal records, Grandin's Diary, and Edmonton Bulletin reports prior to 1884, this Métis settlement was essentially composed of freighters and traders who placed themselves on a well-travelled hunting route.

The Buffalo Lake site, at the end of 1871, seems to have resembled more closely the settlement at Rivière La Biche than the one at Wood Mountain. The families which can be traced to this date in the district were a group of trading families, who had several intermarriages with residents at Beaver Lake, the Beaver Hills, and the Battle River valley. By this time there was also a new settlement that can be placed with reasonable assurance at Salois' Crossing.

In addition to the Salois family's very close intermarriages with these trading families, Abraham Salois himself (whose photograph is on the cover of this monograph) was freighting both for the Company and for himself. He is known to have been planting wheat and potatoes, and his son Gabriel was hauling hay from Hay Lake.

The 1871 Edmonton Post Journal presupposes a centre south of the Battle River, where the hunters were being met, if only by the Company's traders. The best site for the desired quantities of wood and water, and easiest access to the Plains seems to be the Buffalo Lake locality near Boss Hill. The attempt to cross at Salois' Crossing, rather than Todd's

Crossing in 1870, and a Beaver Hills-Beaver Lake-Pipestone Creek connection, also support this.

To sum up events prior to the "core period," the historical evidence perhaps points to an older and an unusual site near Boss Hill. It is not a Wood Mountain-style of wintering settlement, but a trading outpost. If, therefore, the site is now to be considered as a refuge for hivernant migrants, it is not neccessarily a "wintering place," at least in the strict sense.

Because the scrip applications give some indications of the total numbers of people we may call "Battle River" Métis, the overall figures, including 1871, will be of interest.

TABLE 1

SAMPLE OF METIS POPULATION, BATTLE RIVER AREA

Year	Population
1850	4
1855	11
1860	16
1865	46
1869	76
1870	95
1871	126

The term "sample" is not used lightly. A complete search of applications between 1887 and 1906 was not possible, and the numbers of people who took (and stayed in) the Indian Treaty are not included. However, 2,100 and more Métis individuals have been traced, 793 of whom have a connection with the Battle and Bow River migrations.

CHAPTER III

THE BUFFALO LAKE METIS SITE,

HISTORY FROM 1872 TO 1878

1872

Almost as soon as the year 1872 began, on January 4, the people of the Lac Ste. Anne area headed out towards the Plains.

From Edmonton's point of view, the first hunt was disquieting. Normally, at least some of the freeman would have returned in late March or early April to carry out seeding operations. Apparently this did not happen. One small party, apparently from Iron Creek, arrived early in May, and no very large group arrived until July 22. Reports to the Hudson's Bay Company in June and early July suggested that the buffalo herds were very far off, and that the Parkland hunters' schedule was unexpectedly elongated. Those who came back in large numbers did so at the beginning of August, and the Company's one reliable Plains trader for that year, Olivier Bellerose, indicated that many intended to remain away (Edmonton Post Journals, January-June, 1872).

Nominally, the two calendar years of 1871 and 1872 indicate a poor series of hunts in 1872. Provisions from buffalo came to 106,721 pounds of meat, excluding 63 tongues, in 1871. In 1872 the Hudson's Bay Company received only 23,905 pounds of meat and 95 tongues. Agents such as Bellerose accounted for about half of the meat in 1871, but 74% of the meat in 1872. Also, although the Company received buffalo robes and skins from hunters, its own traders avoided them. Only 128 robes out of 1,562 came through these agents (Edmonton Post Journals, January, 1871-December, 1872).

There was, in fact, very considerable activity in the hunts. The Reverend Alexandre Blanchet was the first of several clerics who became involved, as he left with the Lac Ste. Anne hunters in January. On the initial trip out, they had to go much farther south than expected, certainly into "Palliser's Triangle" (OMI Missions 1874:510). However, it appears that this party found enough to return northwards at least by April. At this time, a herd near Iron Creek had been found by some of the St. Paul and Saddle lake Crees; it was large, and had apparently fled there from prairie fires to the south (Doucet 1869-1877). Grandin (OMI Missions 1873:354) noted in his Annual Report on his diocese that Buffalo Lake and Pigeon Lake had been visited as regularly as travel allowed, and the Reverend George McDougall found most of the Victoria Métis at Todd's crossing and in the Bear's Hill bend of the Battle River. However, McDougall mentions that the trail to Tail Creek was uninhabited. He first met anyone to the south near Dog Pound Creek. About 300 Stoneys were back at Pigeon Lake (Campbell 1872:245-246; G. McDougall 1872a:243; 1872b:246-247; 1873a:310-311; 1873b:311-312), and Grandin (Transcripts, Vol. 6, Part 11, 1872-1873) estimated that as many as 500 Carlton, Pitt,

Victoria, and St. Albert Métis were staying in the hunting areas that year.

As a partial explanation for the length of the winter hunt, there were still two matters of uneasiness in the Upper Saskatchewan. One of these matters was the entry of the area into Canadian jurisdiction. All sources remarked on the absence of effort by the new government to answer the concerns of the "Indians." At the same time, news from Red River was both ominous and rare (Grandin, Transcripts, Vol. 9, Easter, 1872; G. McDougall 1873a:310-311). Visitors from the Upper Saskatchewan were distinctly unwelcome as a result of the smallpox, and the freighters and traders were consequently badly informed: therefore, they decided that it was necessary to go by way of Fort Benton (Grandin, Transcripts, Vol. 9, Easter, 1872).

The Methodists (Campbell 1872:245-246; G. McDougall 1872a:243; 1872b:246-247; 1873a:310-311; 1873b:311-312), George and John McDougall, and Peter Campbell, had become aware of American whiskey traders coming farther into the country. The Stoneys in the Bow River area were also becoming less enthusiastic about travelling to Pigeon Lake as a matter of course. No less alarming to the Methodists was the real or rumoured appearance of Montana Jesuits, and the proximity of the heathen Blackfeet. Although the Bow River Stoneys still seemed faithful, they were demanding, and required, a mission away from Rocky Mountain House and Pigeon Lake. At the same time, a Blackfoot mission might become possible.

George McDougall's accounts have a confused chronology. His dates appear to be one month late. As far as they can be reconciled, about the beginning of April he met John McDougall and the Victoria hunters at Bear's Hill, and carried on to Morley by way of Todd's Crossing, Grande Pointe, Tail Creek, Antler Hill, Red Deer River, Little Red Deer River, and Dog Pound Creek, reaching the Bow River's northern bank on April 7. They crossed the River, where the Chief Dogpound and Bear's Paw bands of 284 people and 42 tents happened to be. Apart from discussing the new mission site, the band proposed an agreed boundary with the Blackfoot tribes.

Grandin left for a visit to the Plains about the same time (Grandin, Transcripts, Vol. 9, July 3, 1872 (two letters); July 24, 1872; Vol 14, Part 3, Grandin to Aubert, December, 1872; Vol. 17, Part 2, April 30, 1873; Vol. 23, August, 1872; March 13, 1873; Scollen 1872b; Doucet 1869-1877; OMI Missions 1873:208-354; 1874:499-505; 1880:167-170). It appears that he had heard from Blanchet or the freemen about the herd at Iron Creek, and so he started for St. Paul des Cris with Brother Constantine Scollen as his interpreter. There was a camp of 20 tents of Crees, and possibly a few traders there, and before leaving, the people expressed to him a series of continuing concerns. They expected not only the extinction of the buffalo, but the probable extinction of the beaver before long. They repeated their desire for houses rather than lodges and for assistance in learning cultivation and livestock raising. They observed that they lacked both tools and knowledge. They also wanted St. Paul des Cris to be moved; it was, by common agreement, a poor place for settlement.

Consequently, Grandin and the camp at St. Paul des Cris left rather late, on May 28. The camp had nothing to eat, and lacked sufficient horses. Another party of 30 lodges (apparently from the Fort Pitt area) met them shortly after, and they were in equal trouble. A third camp joined them at the edge of the prairie, eleven days after leaving St. Paul. This camp was mainly Protestant or non-Christian, and seems to have been comprised of Plains Crees from the lower Battle River. As the hunters located buffalo immediately, Grandin and Scollen spent the month of June with them. Scollen's description of religious services at a camp of lodges as opposed to the piéd-à-terre at Buffalo Lake is instructive:

> Our cathedral was contructed in a few minutes: two large leather tents were thrown over some poles; the altar was made of 3 of our luggage trunks placed one upon another . . . . After mass, His Lordship with mitre on, sat on the episcopal throne (another trunk) whilst I explained to our congregation the importance [of first Holy Communion and Confirmation]. . . [Scollen 1872b].

By June 13, word had been spreading of the camp's good fortune in the hunt; 80 lodges of Crees arrived from the west. Towards the end of June, the St. Albert Métis hunters, who had divided into two distinct camps, were not far off. One group, entirely Métis, had been in the Buffalo Lake area, while a more mixed camp had apparently been in the country between Beaverhills Lake and Iron Creek. The latter had met Crowfoot's Blackfoot camp, and there was a Blood camp to the south, in the area of present-day Alliance. The Reverend Alexis Bourgine, and the St. Albert camps, organized a grand reception, and Grandin was able to speak with Crowfoot at some length on July 3. A camp of Métis from Carlton was also present.

This was an extraordinary opportunity to make a formal peace. Crees from St. Albert to Battleford, Métis from Carlton to St. Albert, and two very large camps of Blackfoot and Bloods were gathered in a space within 15 to 18 miles of each other. Although the groups themselves had already begun to negotiate, the presence of Grandin and Scollen assisted the process considerably. The results are still present in the boundaries of Indian Treaties 6 and 7. Basic agreements about hunting rules and probably rules relating to trading and horse thievery were also dealt with. After a successful mission at the Blood Camp, Grandin and Scollen returned to St. Albert.

The resulting treaty (for so it was named) lasted until the treaties between the Canadian Government and the "Indians" were concluded.

Some years later, in 1879, Lestanc (OMI Missions 1880:167-180) observed that the treaty of 1872 made it safe for full-scale wintering settlements along the entire Battle River, and, at least at St. Paul des Cris, the people who were remaining left for that river. He also noted that the buffalo herds had been able to come farther north before that event. After the spring of 1872, a large number of people were south of these habitual grazing grounds, and consequently buffalo were much more easily hunted.

The Crees whom Grandin and Scollen had accompanied in the Plains were reasonably specific in their intentions. They wished not merely to be along the Battle River, but at Parkland lakes, since the Plains lakes were notoriously alkaline and polluted with buffalo wastes. Grandin, in fact, returned to Fort Pitt to close down St. Paul in September, and was about to depart for a general visitation of the lakes between Whitford Lake and Pigeon Lake in order to rearrange mission stations. However, he fell extremely ill, and remained ill for all of October.

Grandin had returned to St. Albert on July 18, and Scollen, Blanchet, and the main party followed on July 22. The situation they found was shocking. Although the presence of American whiskey traders in the southernmost Canadian territory was known, and while there had been whiskey traders from Red River at Edmonton, the latter had learned caution, while enmity between the Sioux and the Montana traders was presumed to restrain the Americans.

Sometime in June, the Benton traders had learned that the trails to Rocky Mountain House, and thence to Edmonton, were completely open. The first, John Warren, arrived at Edmonton on July 8, and three more traders arrived the following day (Edmonton Post Journals, 1872; Borgstede 1986: 63, 94, 102; Dempsey 1984:47). From that point onwards, heavy drinking continued at Edmonton for the rest of 1872, aside from a brief respite in November.

Grandin reported that 42 Blackfeet were known to have died directly from alcohol (although not at Edmonton). This information, probably obtained from Jean L'Heureux, is the earliest mention of Indian deaths directly due to drink known to this author.

The freemen of St. Albert and Lac Ste. Anne began to leave for their fall hunt on August 21, the Reverend Joseph Dupin leaving with the main party on September 4. This hunt had to reach the Hand Hills, but once that far, the people found large herds (Edmonton Post Journal, November 11, 1872; OMI Missions 1872:59; Fourmond 1871-1879). The hunters who travelled by the routes through the Buffalo Lake district proved fortunate. Indeed, the herds continued to stay within three days' normal travel of Buffalo Lake (Hardisty Papers, Item 230). The Battleford and Fort Pitt hunters, however, proceeding southwards by Manitou Lake to the Neutral Hills, found nothing (Dempsey 1984:47-53).

The fall of 1872 gave way to winter with a ferocity that was quite unheard-of. It was normal for a major snowfall to occur in late September, but it had been extremely rare for the weather to remain cold. However, no one was prepared for anything close to what actually occurred. A single unusual, lengthy, and spectacular blizzard blew into Alberta, the temperature falling to very low levels, and remaining there all winter. Extreme depths of snow were left lying on the unfrozen earth.

Apparently the western half of Alberta escaped anything unusual other than very cold temperatures after October 9 (Edmonton Post Journals, September-November, 1872). There was sufficient crusted snow at Lac Ste. Anne to lead the Hudson's Bay Company traders to fear very poor hunting in the woods to the north and west, but there was nothing to indicate more than a normal hard winter. Travel by Pigeon Lake, Rocky Mountain House, and the foothills was not difficult at least as far as the Bow River. The North Sakatchewan River only froze over on November 9, which, although a little early, was entirely seasonal.

The Edmonton District Métis hunters, however, were apparently caught completely unawares about September 26, and the storm was still blowing hard fifteen days later. Grandin, although trapped by illness, hoped to be able to proceed to Buffalo Lake until October 28, when he was forced to abandon the idea, both for reasons of health and because there was no apparent probability of better weather. Assisted by David Daigneault, a Métis soon to become a Buffalo Lake resident, he reached St. Albert in five days, which was not abnormally slow.

The storm led directly to large-scale residency at Buffalo Lake. The hunt had been three days' travel to the herds, but Leduc noted that the return trip took fifteen days to reach the Buffalo Lake site. Apparently, the St. Albert area Métis hunters were making something less than three miles per day.

It is worth quoting the December 18 account of Fourmond (1871-1879) to a relative, Mère Marie-Colombe Cox (in translation).

> Our Métis have also had themselves a very painful journey in their autumn hunt. It had never happened to them to be surprised by winter at this time, contrary to all their expectations, out on the open prairie, which is to say in that immense desert where one has no other fuel than that which the buffalo produce. They found themselves suddenly enslaved underneath the snow, with their carts, women and children. It was only after a great many sufferings and supreme efforts that they came to their goal of reaching the woods. Some resolved to pass the winter in this place to retake the plains in the spring; others set to work to fashion [sleds] and thus returned to the [St. Albert] colony with the Rev. Father Dupin, who had been accompanying them since the hunt's beginning. The great leader called Abraham [Salois], they say, showed in the circumstances a courage and devotion worthy of the greatest praises. Forgetting himself in order to think of nothing but his brethren, he always opened a way of crossing the snowbanks, at the risk of killing his horses, and at every encampment, went to all corners to encourage and help everyone. Finally, thanks be to God, nobody perished in this hard trial.

Victoria Callihoo later recalled:

> As my mother had all the meat, hides, and pemmican she wanted, she was anxious to come back home to Lac Ste. Anne, now that the weather was getting cold. The leader, Solway [Salois] and a few families from our settlement, and outfits from the other settlements wanted to hunt and kill more buffalo, claiming that good weather would come, and would not allow anyone to leave the caravan, saying any small outfit would fall prey to marauding Indian tribes. My mother, and my brother, Alexis were determined to come home as they knew it was not likely there would be any Blackfeet tribes on the way home at that time of year.

> Hot words were used when we left the caravan. My mother said to them, 'You people are foolish to stay here any longer. It is late in the season. You will be snow-bound and you have no wood to burn.' It was bitter cold on the way back . . . .
>
> Ice was forming on the [Saskatchewan] river . . . and my brother armed with a sharp pointed pole rode above stream to shove off ice cakes from the carts in fear the ice might upset them . . . [Jamieson 1953:27-28].

Grandin adds a few things (OMI Missions 1872:502-565) on December 7:

> Only Father Dupin, who had left before me for our hunters on the Prairie, had not returned again [November 2]. They had been surprised, like ourselves, by the precocious rigours of winter, in the middle of the great Prairie, without wood, and without any shelter except tents of leather or cloth. Most of our Métis were there with their families. More than that, they had not taken any precautions against the cold. A good number could not return to here [St. Albert]; arriving in the wooded region, they constructed houses ("baraques") to pass the winter there. Those who returned with Father Dupin took forty days to make their retreat. Several have lost their horses; all have been tried by miseries which hardly seem believable to anyone not acquainted with the country, and the atmospheric perturbations which bring us a winter one month ahead of the calendar.

Grandin referred to "baraques." In his usage, such a building was a "barracks" in the sense of a dwelling shared by unrelated people, or as a dwelling used for other purposes. It had some permanence: if it was not a "maison" in a European sense, neither was it a "cabane" or "bicoque" (cabin or shanty).

Most westerners, English and French, made an important distinction between a log house and a cabin or shanty. Some confusion arose where an eastern Canadian writer or translator was involved.

Even if there had not been people at Buffalo Lake previously, the site cannot conceivably be dated later than the retreat from the Plains in October, 1872. However, the identifiable residents of the Battle River area who claimed Métis scrip had increased from 126 to 157, and Abraham Salois knew exactly where he was going. This, in itself, indicates that the Buffalo Lake site was likely a settlement of some sort prior to 1872.

The Plains Crees, the Stoneys, and a sizeable proportion of the Blackfeet faced outright starvation. The Blackfeet who had hoped to find buffalo in the Neutral Hills area fared worst of all: everyone died. The Reverend Léon Doucet (1869-1877) estimated that 70 to 80 Crees from the St. Paul des Cris area either froze or starved. Both the Reverend George McDougall and Bishop Vital Grandin noted similar deaths among the local people at Victoria and St. Albert, although in much smaller numbers. The

Stoneys of Pigeon Lake and the Bear's Hills were with the St. Albert Métis, and those Stoneys at Morley apparently did well. However, as the Company's officers at Lac Ste. Anne warned Hardisty, the combination of the cold, the deep snow, and unfrozen ground below made hunting in the woods very difficult. Substantial numbers of Stoneys had to be fed by the Company and by the St. Albert settlement. At St. Albert, these people had to be moved out of lodges and into the settlement's houses.

In short, the dangers of the 1872-1873 winter were extreme in the northern half of the Upper Saskatchewan, and tents were not sufficient even in wooded areas. Buildings also would have to be constructed sufficiently well as to be weathertight.

The abrupt arrival of the Benton traders at Edmonton revealed that the Americans were established farther north than expected (Edmonton Post Journals, 1872). Although the Hudson's Bay Company was quite alive to the grave danger to its Blackfoot trade, its proposed restructuring of personnel practices and transportation arrangements did little, in 1872, except to delay matters. Neither John Rowland nor Cuthbert McGillis were unreliable freighters, but the first was one month behind schedule, and the second, caught by the blizzard, eventually came in five months late. The Company simply had very little to trade. Rocky Mountain House was even in a worse position, as its stock came from Edmonton. However, it was clear that the Company could not avoid establishing posts in the Bow River area, or in the Plains; otherwise the competition would continue coming northwards.

Consequently, a second southwards migration began late in 1872, although it was a mere trickle compared to the number of people looking towards Buffalo Lake. Of 790 Métis individuals who can be traced by the scrip applications, approximately nine were in the Bow River area before the year ended. However, it was an idea that was arousing interest among the people of the Upper Saskatchewan. (Grandin, Transcripts, Vol. 9, December 23, 1872).

At the end of 1872, both the Hudson's Bay Company and the St. Albert Mission attempted censuses of the Upper and Lower Saskatchewan (Grandin, Transcripts, Vol. 6, part 11; Hardisty Papers, Items 145-149). Both were agreed that the two districts combined had about 3,400 Métis and 200 Europeans. The Mission thought it was hopeless to try counting the "Indians," although the Hudson's Bay Company tried, and did rather badly. Significantly, Grandin believed that about one-third (possibly 400) of the St. Albert and Lac Ste. Anne people (including the Crees and Stoneys taking refuge) were living entirely by farming, and most did some. He conceded that the latter were not necessarily farming well (Grandin, Transcripts, Vol. 17, Part 2, March 6, 1873).

After November, 1872, it appears that the Buffalo Lake site had approximately 320 residents of all groups.

1873

As the year 1873 began, travelling improved, but for those who had been unfortunate with their hunting, or who had no access to the crops harvested in 1871 and 1872, other matters did not improve. John

Sinclair, the Hudson's Bay clerk then working at Buffalo Lake, reported to Hardisty on February 18 that some Blackfeet were at the Hand Hills, and not enjoying much success. Another party of hunters had arrived at Edmonton on February 13, and the Edmonton Post Journals noted that nothing was on the Plains at all. There were a few travellers from the Buffalo Lake area, but their only known purpose was to make funeral arrangements for the wives of Donald Todd and John Whitford (Edmonton Post Journals, March 16, April 2, 1873).

In the absence of both Grandin and Lacombe, the Reverend Hippolyte Leduc found himself supervising the diocese, and he provided the following account (in translation):

> At the beginning of January, the good Father Dupin went back to the wintering place of our Métis in the prairie. He passed several weeks with these winterers; his journey and his stay in this locality were not without its contrary problems. People were very willing to come fetch the Father at St. Albert, but nobody cared to take him back there. This was a journey of about a dozen days, going and returning, to be made on the desert in an intense cold spell, at which the settlement only smiled. On arriving, he resumed the teaching of the St. Albert children who do not regularly go to the school [OMI Missions 1874:510].

The Edmonton Post Journal noted his return on July 16. Buffalo Lake was now clearly a complex site. Apart from the length of Dupin's stay, there were two other Catholic clergy accompanying the hunt: Léon Doucet and the newly ordained Constantine Scollen.

The Hudson's Bay Company was also relatively inactive in the early months of 1873, tending to the surrounding camps of refugees from cold and hunger. The lawlessness of 1872 persuaded Donald A. Smith, the new Governor, that the Company should consider moving into the Bow River area only with great care, and he hoped, after aboriginal treaties and a police force were in place (Hardisty Papers, Item 314).

Nevertheless, the Edmonton Post Journal (1872-1873) and Hardisty Papers (Various Items) note the Company's use of resident traders at Pigeon Lake and Buffalo Lake as well as Rocky Mountain House (Figure 1). John Sinclair, Francis Whitford, and Angus Fraser handled those posts. Olivier Bellerose, Abraham Salois, and Basil Hébert were sent out with goods to meet the people as they came in from the Plains. Sinclair was normally the Post Officer either at Fort Pitt or Rocky Mountain House. His being at Buffalo Lake at all is a comment on the importance now attached to that place as a commercial centre. Indeed, 1872-1873 was the first known year of large-scale year-round settlement. Evidently, those who made their living by hunting out from St. Albert were not using the place as merely the outer point of the hunts, or even as a trading centre en route to the herds and back. Buffalo Lake was now the home to which a winterer returned.

Furthermore, it is now possible to describe life at Buffalo Lake. One direct account of the site itself, by Samuel Benfield Steele, is somewhat augmented by that of a second North West Mounted Police officer, Jean D'Artigue (Steele 1915; D'Artigue 1973). Steele (1915:86) describes a dance held at Buffalo Lake some two years later (in January, 1876) as follows:

> We arrived at Buffalo Lake after dark, and were searching amongst the four hundred cabins to find John Ashon's store when we heard the sound of dance music and directed our steps to a large log cabin in which a lively wedding dance was going on. Two rows of young men and women were on the floor footing Lord Macdonald's Reel to the most rapid time possible, as was the custom among the hunters. Inspectors Jarvis and I entered the room and were directed to Ashon's place.
>
> We remained four days in the camp and enjoyed the novelty of the situation. Mrs. Ashon, a young woman about twenty years of age, took good care that we should not suffer from starvation, for she kept the fire going and the pot boiling the whole time. The intervals between meals are very short, for every now and then we would he asked to "draw in" and despatch buffalo tongues, bannocks, strong tea, and tinned fruits.
>
> Inspector Jarvis did much to obtain intelligence from all parts of the country and as the hunters and traders liked to talk we kept their tongues wagging. We secured a great deal of information of all sorts which was afterwards of good use to us.

Although 400 cabins certainly was an error on Steele's part, it may well be that, given a very congested settlement and a dark night, there seemed to be that many.

D'Artigue (1973:86-88) makes a distinction between Indian dances and those of the Métis. The dance he describes was at Sweetgrass' camp in March, 1874, about 25 miles south of Buffalo Lake on the Red Deer River.

> The Indian chief (Sweet Grass) accompanied by his councellor and petty chiefs came also to bid me welcome, and to invite me to a pow-wow (dance) which he was going to give that evening in my honour.
>
> . . . Accordingly. . . after supper I directed my steps towards the wigwam where the Council was sitting. The chief and his warriors were already assembled and by the side of the chief a seat of furs was placed, intended for my occupation. Three Indians, each furnished with a kind of tambourine and a drum-stick, were only awaiting my arrival to strike up the music for the dance. As soon as I was seated, the squaws, old and young, entered, and the pam-pam began. And such a pantomine! how shall I descrlbe it? Such shaking and balancing of the head, contortions of the face and body, such violent and uncouth movements of the arms and legs

> accompanied with a kind of song, interspered with most inhuman shouts. . . .
>
> As the dance went on a young Uskinik squaw approached me, and by a sign asked me to dance with her. Here was an unlooked-for turn of events. To dance as the whites do is all very well, but to dance after the Indian fashion above described was, in my opinion, altogether too much of a good thing. But what was to be done? All eyes were fixed upon me, seemingly anxious to know if I dare to refuse; for truly my manner must have indicated that I felt reluctant to accept the profferred honour. But, remembering that a refusal to dance was looked upon as an insult, I got up and taking the hand of the Uskinik squaw, did my best to imitate the ludicrous motions I had witnessed by the others. This so pleased them that the shouts and laughter was increased to a perfect uproar, and when I sat down both the chief and his warriors came to congratulate me upon my successful debut.

Sweetgrass' daughter then served what later proved to be tea turned mildly intoxicating by being brewed with tobacco. What D'Artigue did not realize, nor did the fur trader whose "wigwam" he had been sharing trouble to tell him, was that the daughter had proposed marriage to D'Artigue, and he had accepted! It has been Sweetgrass' aim (so he claimed) to bestow this honour upon the first representative of the Canadian Government. D'Artigue was able to avoid his fate, possibly to Sweetgrass' private relief.

Doucet had sufficient trouble with gambling at Buffalo Lake to require direct instructions about games. Grandin's reply was that games for recreational purposes, or for stakes of little or no value, were proper, but any serious wagering was dangerous (Grandin, Transcripts, Vol. 19, Doucet, December 25, 1874). Doucet had to obtain similar advice regarding dances, drink, and horse-racing.

In the early months of 1873, it became evident that, however calm matters were in the northern half of the Upper Saskatchewan District, they were not calm to the south. John Sinclair, now established at Buffalo Lake, first heard the news from Blackfoot parties arriving from the Hand Hills. On February 18, he reported that:

> . . . they killed one of the American Traders & they are seen leaving the Belly River. This Trader would take one of the chief's wives from him but he got shot on his attempt to take her. . . [Hardisty Papers, Item 362].

And on March 20, he wrote that:

> Some Blackfeet came on a trade . . . Natooswanstep tells us all the Blackfeet, Blood Indians, & Peigans are killing one another right and left by drinking, their's not ten tents of Bloods together - so they are in an awful plight. You may see a Low Band of them come to Edmonton this spring to complain about the Yankees and how they are treated by them this winter [Hardisty Papers, Item 363].

From entries in the Edmonton Post Journals we learn the following. The North Saskatchewan River broke open on April 19. Some results of the spring hunt were becoming known. Sinclair and Whitford brought in their returns on May 28 and May 12 respectively. No large party of freemen returned this spring, and only one whiskey trader, John Warren, was at Edmonton. The people going out from Edmonton, St. Albert, and Lac Ste. Anne left rather late, beginning on May 26 and finishing on June 17. The later parties were accompanied by Olivier Bellerose and Basil Hébert, who were travelling as Hudson's Bay Company agents. Their first trip was reasonably successful, and the first large party of returning freemen, under Louis Montagnais, were also pleased. However, about August 12, the reports to the Company became less favourable. The freemen were arriving with fewer results, and Bellerose considered his own trade to be a major disappointment.

From entries in the Edmonton Post Journals it appears that the bulk of traders went directly towards the Battle River or held close to the mountains, setting up at Rocky Mountain House. The parties of freemen and Blackfeet were well supplied with whiskey before arriving at Edmonton, although some of the traders set up at present-day Walterdale for the winter. Although there was considerable drinking, things were much more orderly, perhaps because word of a deadly confrontation between "wolfers" and Crees was current in October. Besides Warren, Smith, and MacPherson, the Post Journal mentions William Hope, Cuthbert McGillis, Charles Dumont, one Roberts, John Paul, Felix Munro, Harry Johnson, and Henry Herbert as independent traders. Salois took in provisions for the Company and robes for himself.

Bellerose, Hébert, and Salois gathered 27,823 pounds of provisions for the Company. This was not a great improvement over 1872. It seems that the small outpost run by Sinclair, Fraser, and Whitford did somewhat better.

Unfortunately for the Company, it was also caught short on trade goods again. It had been hoped that a steamboat would end the dependence on freighters. The steamboat was procured, and sent off from Lake Winnipeg, but on September 6, Salois returned from Carlton to report that it had been lost at Grand Rapids with the 1874 outfit for every place upstream. By this time word was coming from Fort Pitt and Carlton that the Lower Saskatchewan district had had very unsuccessful spring and summer hunts (Hardisty Papers, Items 352, 285; Sissons 1946:124-138, 153-167). There was little trade material to bring in until fall, and what there was went to the increasing number of independent traders.

At Buffalo Lake, on October 25, Sinclair observed:

> I am sorry to say that we lost all our trade with the Stoneys for want of goods, and that's the way always at this place. The Stoneys are all gone to the Red Deer River [at "Le Bout de Bois," the mouth of the Medicine River] to wait for David McDougall and Trade with him, but goods come in time I will go out & see them; try and send me all you can spare of goods, for the Blackfoot are determined to trade here this winter [Hardisty Papers, Item 369].

He also observed that the buffalo were nearby and plentiful in numbers.

Throughout July and the rest of the year, some of the people of the Upper Saskatchewan were watching events in the Bow River district with interest. Both the Catholic and Methodist clergy decided to establish missions in that area, the first permanent Euro-Métis establishments there since the ill-fated Old Bow Fort of the 1820's. That early venture had failed because of tribal hostilities. However, if these missions could be established, it would encourage those who wished to challenge the merchants of Fort Benton on their own territory. The recent treaties of 1872, and the existing bad relations between the Blackfeet and Missouri traders offered an opening.

For purposes of Buffalo Lake's history, several items are relevent. The McDougall family was accompanied by an inspector of the Wesleyan Missionary Society, the Reverend Doctor Lachlin Taylor (Taylor 1874).

While travelling westwards, Taylor observed not a single house between Forts Ellice and Carlton. However, there were many travellers and large freight brigades coming eastwards. He learned that virtually all residents of the Victoria and Whitefish Lake settlements, including the Reverend H. B. Steinhauer, had gone into the Plains. This proved to be true at Pigeon Lake as well; and in the ensuing winter, most of the Stoneys in the Bow River area moved northwards to Pigeon Lake, and eastward into the Plains from there (J. McDougall 1875b).

Taylor noted that the church and house at Pigeon Lake, built by John McDougall in 1864, and regarded as uninhabitable for some years, had not been replaced. As the Society had sent money for proper replacements, he may not have been pleased. As examples of buildings erected by a newcomer, and which were not regarded as suitable to the country, an existing description of them is helpful (Campbell 1870). The houses at Buffalo Lake were certainly better built than these:

> Our hut is a miserable thing with a bark roof, and walls six and a half [feet] high, the roof allows the rain and melted snow to run through in streams, so that it is impossible even to keep our bedding dry. . .
>
> I am sorry that my circumstances prevent me from doing for this Mission what Brother McDougall has often told me he did - build the Mission house at Victoria at his own expense, without any aid from the circuit . . . The church is not fit to hold service in, being only a little more that half-roofed, and all our services are held in our little cabin.

It is not surprising to learn that Campbell's health had deteriorated very badly by 1873.

By contrast, however, the parsonages and churches at Victoria and Whitefish Lake were, in Taylor's opinion, well built. His description conforms to other comments on the Catholic house-chapels at Buffalo Lake. At the new Morley Mission, John McDougall explained how he managed these matters. Rather than building himself, he hired local men at $20 a

month and board, first erecting a temporary shelter, and proceeding to the erection of a permanent house, 40 feet by 22 feet (13 m by 6.7 m, more or less) in this case (J. McDougall 1875a).

McDougall also noted that the buffalo lay to the northeast of Morley, and were never more than 100 miles away.

Scollen and Fourmond, and two lay assistants, Louis Dazé and Alexis Cardinal, had already established a Catholic Mission, Notre Dame de la Paix, near the later Pirmez Creek Post Office on the Elbow River. Cardinal had been Lacombe's assistant, and Dazé was an accomplished workman. The building was of a provisional nature; Grandin recalled it as being a "maison omnibus," small and primitive by the country's standards (Grandin, Transcripts, Vol. 4, Memoirs; Vol. 5, Part 7, Mission de N. D. de la Paix).

Doucet (1869-1877) reported that this building was 750 square feet in floor area. John McDougall thought it was a comfortable house when he visited it (OMI Missions 1874:524).

At the time, the two Missions were still uncertain as to their safety, and had held close to the foothills. Indeed, as Taylor reported, the Missouri traders were in a very dangerous situation, and American territory was unsafe until one reached Utah. Thus, although these churchly experiments were being watched with interest, any of the people of the Upper Saskatchewan who contemplated moving into this area preferred to await the success or failure of these experiments. However, about ten people, nearly all of whom were associated with Rocky Mountain House or Edmonton itself, seem to have made their way southwards.

As the winter of 1873 drew on, the Edmonton Post Journals (August 13, 1873) began to include notes of arrivals of settlers, including the first from Manitoba since the 1870 smallpox. Winter was late that fall. The North Saskatchewan River began freezing over only on November 29, although the temperature took a mighty plunge the same day. At Edmonton it was -13°F (-25°C), and the cold weather continued. Charlie Smith, possibly finding life as Addison McPherson's partner too lively, had Louis Mearon (sometimes called "Marion") of St. Laurent as a new business partner, and they were established at Buffalo Lake for the winter (Edmonton Post Journals, November 24, 1873). Only recriminations about the Hudson's Bay Company's transportation disasters, and a last-minute battle by Grandin, then at Marseilles, to keep Lacombe in the Upper Saskatchewan seemed to interrupt an early winter calm.

1874

The appearance of calm during the winter of 1873-1874 may be deceptive, as the sources available are unfortunately meagre.

The North-West Council and Governor Morris were both under pressure to start the business of negotiating treaties. Petitions from the Saskatchewan to this effect arrived on September 8, 1873, March 14, 1874, and June 1, 1874 (North-West Territories Legislative Council, 1873-1875). The Hudson's Bay Company officers were aware that the provision stocks for their own use were dwindling as early as October, 1873, and genuine, if quiet, fear grew (Hardisty Papers, Items 428,

576). Unfortunately, Morris was able to do little, and the Council even less (Thomas 1956).

Early in 1874, the buffalo appeared to be very scarce and distant. At Carlton, Lawrence Clarke lamented that:

> Freeman, Settlers, and Indians are all starving & after putting past the quarter for D. [Dunvegan or the Upper Peace District] we have just 23 Bags pemmican left, all hands are coming to us, and as I can't supply them, I get many a threat and curse [Hardisty Papers, Item 428].

Any remaining doubts must have seemed resolved by Angus Fraser, who wrote Hardisty from Rocky Mountain House on March 16:

> It will be hard times for Grub . . . the buffalo far off and horses very poor and no Blackfeet coming in on a trade. So we will be in a fine fix . . . I believe David McDougall is doing well, so well he might, having no person to oppose him, they have all the trade to themselves. . . .[Hardisty Papers, Item 473].

At least three conflicts seemed possible. The core of Blackfoot territory was being invaded by everyone between Wood Mountain and Fort Pitt, and, worse still, American whiskey traders and wolfers. At the same time, the Montana situation was very complex and volatile: the attitude of the Sioux was unknown, but expected to be hostile. Both local settlers and the American Government were far from wanting to see hunting parties arriving from Canada. The crisis of General Custer's campaign was not far in the future. Under the circumstances, any conflict was a ground for anxiety, and liable to exaggeration. When, in August, Moïse Laroque of Buffalo Lake and three Cree companions were more or less executed for stealing Blackfoot horses, the incident was greatly exaggerated in all written sources, except by John Kerr (Sissons 1946:166-167), who was present.

The Hudson's Bay Company's officers, moreover, knew something which was still a well-kept secret. The powers in London and Montreal wanted to abandon the remaining pretences of governing and the basic conditions of employment. Despite their frequent reassurances to the Trade Commissioner, James A. Grahame, the wintering partners were not altogether enthusiastic about this (Hardisty Papers, Various Items; Saskatchewan District 1874-1892: specifically 1874-1879; Trade Commissioner 1874-1893; MacFarlane Nd.; Doucet 1869-1877). Commissioner Grahame's statements supporting the proposed new order were somewhat extravagant:

> The day has gone by for the Company to act as the Almoner of the Saskatchewan. Your remarks about the difficulty of collecting Provisions in consequence of starvation are strong endorsements of the tenets I wish to inculcate, understanding as I do that our object is to make money [Hardisty Papers, Item 459].

The old system of term-service contracts was abolished except for officers, clerks, and interpretive staff: the policy of self-sufficiency in all occupations gave way to hiring out contracts. As far as can be determined, between 20 and 30 families were directly affected (Edmonton Post Journals, 1854-1873; 1877-1881; Hardisty Papers, Items 556-562; Census Enumeration, 1881).

Between January and May, the Company had been taking what was perhaps the most accurate census of the area (Hardisty Papers, Items 556-562). In April, 14 families with 61 people in them were residing in Fort Edmonton itself, as well as 13 single men. However, some further five to 15 households in the neighborhood had been "in the service," if not in residence. The people in the surrounding district were numbered as indicated in Table 2, following.

TABLE 2

CENSUS OF 1874

Community	White and Half-Breed Families		Indian Families		Other Households	
	Families	Indiv.	Families	Indiv.	Households	Pop.
Lac Ste. Anne	32	161	17	92	2	2
Fort Assiniboine	5	23	10	22	2	2
Rocky Mountain House	14	59	390+-	3,390 (est.)	-	-
Lac la Nonne	61	193	80	387	29	29
Victoria	35	143	203	913?	2	2
Edmonton Dist.	11	47	-	-	16	16
Long Lake (St. Albert Trail)	10	48	5	23?	2	2
Pigeon Lake	3	12	9	66	-	-
St. Albert Indians (incomp.)	-	-	19	44	3	3
St. Albert Métis, Whites (Incomplete)	105	495	-	-	1	53
Totals	276	1,181	733+-	4,937	57	109

PERSONS PER FAMILY AND HOUSEHOLD UNIT

	Family Units	Individuals	Persons/ Family	All House-holds	Ind.	Persons/ Household
All Families (Households)	1,009	6,118	6.1	1,066	6,227	5.8
White, Halfbreed	276	1,181	4.3			
				716	3,077	4.3
Cree, Stoney	383	1,787	4.7			
Blackfoot (estimate)	350	3,150	9.0	350	3,150	9.0
Add: Fort Edmonton Post	14	61	4.4	27	74	2.7
All non-Blackfoot Families (Households)	673	3,029	4.5	743	3,151	4.2
1881 Dominion Census, areas settled for three years or more (Mss. return, Edmonton Dist.)	-	-	6.0	-	-	5.5

The change, therefore, threw between 27 and 68 people out into the world to fend for themselves. In 1874, the scrip returns indicate that, of 763 individuals, 46 moved southwards; the Battle River area had 202 identifiable individuals (gaining 21); and the Bow River district had 35 (gaining 26), who had been associated with the Upper Saskatchewan. This is assuredly an underestimate. In short, the Battle River-Buffalo Lake area gained about 26 residents (approximately a 10% increase).

Is it reasonable to suppose that the sudden change of circumstances for Company servants abruptly released a substantial number of people into these migrations? Tentatively, for Buffalo Lake, probably not; for Bow River, it almost certainly did. Of the 763 individuals who resided in either area, only 62 lived in both areas, even if both large migrations southwards, those of 1874-1875 and 1879-1881 are included (Scrip Applications).

Thus, even if large numbers of Battle River people journeyed southwards, they came back.

The people who later entered the Treaty reveal something about the different nature of the emigrants to Bow River. Of 170 identified Treaty individuals in the Buffalo Lake district, no one band membership was prominent. However, at Bow River, more than half came from Enoch La Potac's band (Table 3, following).

TABLE 3

NATIVE POPULATIONS

Nations and Bands	Battle River-Buffalo Lake	Bow River
Blackfoot Nations	6	6
Stoney Bands		
La Potac	45	31
Ermineskin, Sampson	27	4
Alexander	8	4
Alexis	2	2
Cree Bands		
Passpasschase	34	2
Bobtail	13	0
Pakan	5	0
Other		
Michel (Iroquois-Ojibway)	30	9
Sub Total		
Blackfoot	6	6
Stoney	82	41
Cree	52	2
Other	30	9
Grand Total	170	58

If one wished to describe the most outstanding attribute of the La Potac Band, it would be that it was an artificial creation of Indian Commissioner Edgar Dewdney, who persuaded a large number of detached families at or near Edmonton to gather together. Most of the band were day-labourers or Company servants by occupation.

In short, the people moving to the Bow River in 1874-1875 were younger, more recently in the country, and more likely to have been among the discharged "Company servants" than those moving to the Battle River-Buffalo Lake district. Clearly, however, the Company's action in changing its policy on employment released a rather large number of people who then had to find a new mode of life. Between 1873 and 1875, 118 out of the 763 persons examined moved either to Bow River or Buffalo Lake (see detailed enumeration of figures for the years 1865 to 1875 in Table 4, following).

TABLE 4

POPULATION SAMPLE IN THE BATTLE RIVER AND BOW RIVER AREAS, 1865 to 1875

Date	Battle River	Bow River	Total
1865	46	0	46
1869	76	2	98
1870	95	3	98
1871	126	3	129
1872	157	9	166
1873	181	10	191
1874	202	35	237
1875	213	96	309
Net Gain, 1865-73	+135	+10	+145
Net Gain, 1874-75	+32	+86	+118
Total	+167	+96	+263

Although these people were not invariably unsuccessful in the following years, there was little question among local officers that for many ex-servants, life became very difficult indeed, regardless of rank.

References are consistent in their assessment: the Hudson's Bay Company demanded very hard work, but it fed, housed, and clothed an employee and his family.

The Company's actions had a very disconcerting effect on the Upper Saskatchewan people, and it is a matter of living memory that Buffalo Lake was the scene of a great council in the fall of 1874 (Borgstede 1986:97). What was discussed is difficult to discern. By the time it was being held, the arrival of an armed police force was expected, and at least the party accompanying Grandin back from France wondered if the force would behave like Wolseley's army at Red River. Ambroïse Lépine's brother was with the party, and the travellers heard much about Ambroïse's troubles with the Canadian legal system (OMI Missions 1875:554-565). Grandin arrived at St. Albert at a time of great uneasiness, and apparently jumped to the conclusion that the meeting was caused by Lépine's trial, and that the Buffalo Lake gathering was preparing to flee to the United States (Grandin, Transcripts, Vol. 6, Part 11; Vol. 22, Grandin to Laird, April 3, 1875). George McDougall may have thought the same thing; he was present at Buffalo Lake distributing gratuities, perhaps acting as the Government's agent and explaining the aims of the Government and police (Hardisty Papers, Item 420; Dempsey 1967:20-30; OMI Missions 1876:35-38).

Although these matters may well have been discussed, Grandin later admitted that his fears had been greatly exaggerated (Grandin, Transcripts, Vol. 22, Laird, [December] 1876, A. M. Meredith [January 26, 1877]).

A second possible subject of discussion may have been the potential economic crisis. Although the crops had been good at St. Albert, the Mission's water mill had again been destroyed by flooding, and the sole means of milling grain was William Bird's unreliable water mill on the present-day Mill Creek in Edmonton. It seemed unlikely that any progress towards agriculture could be encouraged under such conditions. Also, by this time Grandin believed that the influx of English and American immigrants would overwhelm his present flock altogether (Grandin, Transcripts, Vol. 9, December 29, 1874).

Fortunately, in the Upper Saskatchewan, the feared dearth of food did not occur. There was indeed great hunger at Fort Pitt eastwards, but the spring and summer had been very wet to the west of Fort Pitt and had drawn the buffalo northwards. William McKay, at Fort Pitt, reported buffalo and American traders as early as January 16 (OMI Missions 1875: 554-565; Hardisty Papers, Item 473), and on April 6, John Bunn wrote Hardisty from Victoria that there were herds north of the Battle River (Hardisty Papers, Item 507). Both Fourmond, who returned directly from the Bow River Mission, and Scollen, who made a very extensive tour throughout the Plains, found buffalo plentiful everywhere (OMI Missions 1876:35-38). W. L. Wood, at Fort Pitt, expressly noted that the Buffalo Lake people were making equally plentiful amounts of provisions (Hardisty Papers, Item 443).

Unfortunately for the Hudson's Bay Company, the plentiful herds were decisive in bringing forward more trading opposition: both local traders and those from Benton increased in number and were doing better business. Part of the opposition was manifestly the result of Company

policy; selling to people at Winnipeg or Carlton who then became merchants upstream was self-defeating. Through the letters of Lawrence Clarke, Chief Factor at Carlton (Hardisty Papers, Items 629, 936, 938), we know at least eighteen merchants trading at or near Buffalo Lake in 1874: Samuel Livingstone, John Kerr, Louis Courtoureille, Joseph Lamoureux, Abraham Salois, Ambroïse Fisher, Felix Dumont, Toussaint Salois, John Norris, Harry (Hiram) Johnston, William Houle, Louison Montagnais, Donald McLeod, James Gibbons, Paul Fagnant, James McLachlan, Pierre Boutin, and Joseph Harnois.

Not all of these individuals were operating on their own; John Kerr, for example, was associated with McLeod and McLachlan in the fall of 1874, and joined Cuthbert McGillis' party the following summer. Nor did Clarke list anyone who had purchased an outfit at Carlton.

The Reverend Alexandre Blanchet was apparently at Buffalo Lake during the summer, and Scollen was quite certainly present just prior to the "Great Council" (Doucet 1869-1877). Scollen had toured the Bow River and Macleod districts, and would have had much to tell.

He and John McDougall had learned of important changes to the south (Hardisty Papers, Item 550; Legal 1875-1885; Grandin Transcripts, Vol. 4; Vol. 9, December 23, "1872" [1874]; Vol. 15, Part 5, October 16, 1874; D'Artigue 1976:78). The traders in the foothills, whom posterity called "wolfers," were intending to raise livestock. Both men thought the whiskey traders here were more civilized than in former years. However, both were alarmed at others, who were situated between present-day Bow Island and Medicine Hat. These whiskey traders had come there once the International Boundary Line had been surveyed. They had already been in trouble in Montana, and had few redeeming features. Scollen believed they also were introducing systematic prostitution.

This would indeed have been a matter of concern for the "Great Council" at Buffalo Lake. Cattle would have appeared to afford opportunities: the new group of Montana traders posed a threat. The infamous massacre at Abe Farwell's post in the Cypress Hills, which took place shortly afterwards, would have confirmed any previous concerns. Surely these things must have been discussed at Buffalo Lake.

Before the year was out, Blanchet or Doucet had sought advice from Grandin on marriage matters at Buffalo Lake, and Grandin sought guidance from Rome. Grandin's letter does not survive, but a Consistory of the College of Cardinals summed up his worries in their reply of December 9 (Grandin, Transcripts, Vol. 26, Part 2, December 9, 1874). Occasions of men deserting unsatisfactory wives, coerced marriages, and polygamy were noted. The first of these had been rare. The second abuse was not to be considered a marriage at all; however, families were not above conspiring to bring it about in some way. This procedure, which led to the marriage of Charles Smith and Marie Delorme in 1877, was very well described by Mrs. Smith (1948-1949:11:217; see also Carpenter 1977:60-62):

> . . . we was warmly greeted by my mother and step-father, there was much pleasant conversation between the three, and then Smith asked my mother for permission to marry me. As she looked surprise[d] he said "I asked her yesterday, and she said, 'Yes'."

> "But I didn't know what I was saying," I shouted at them. That made no difference. It was settled between my parents and Charlie right then and Charlie gave my mother a present of Fifty Dollars. Was I not then sold for that sum?

The third problem was complex. Where a man would not acknowledge a single woman as his wife among several, the Church's ruling was that those women who grew up under local rules could regulate matters themselves. Those in need of protection or in poor health, and those who had been too old for instruction, could continue to live with the man, but they would have to promise to try to avoid being too alluring and to do good works as compensation.

During Scollen's travels south of the Red Deer River, he had met traders, but thought he had missed the Blackfeet, many of whom were along the South Saskatchewan and Bow Rivers. The first bands he met he believed were Plains Cree, under the leadership of Chief Sotai-na, then 74 years old (Dempsey 1972:661-662; OMI Missions 1876:35-38; Doucet 1869-1877). They were, in fact, Blood Indians, but may well have had Plains Crees among them. Scollen stayed with them for the greater part of the summer, as they slowly made their way towards the northeast. Eventually, the camp divided into two, with Scollen's smaller camp going on to the Battle River and then to Buffalo Lake.

Scollen's description of Buffalo Lake is very brief, but enlightening (OMI Missions 1876:35-38). There were a great many natives of every variety, including a very substantial number of other Blackfoot bands. He was alarmed to learn that Buffalo Lake had not seen a Catholic priest since Dupin and Bourgine had left the previous summer. No less than four others were somewhere out in the Plains, but they had either missed Buffalo Lake or not stayed.

Scollen's account also confirms traditions preserved by the Bellerose and Whitford families (Clark 1967:35-36) that Buffalo Lake was a major trading post set up at a convenient place. By this time, the original founding traders had established it as a safe meeting place for Crees, Métis, Stoneys, and Blackfeet, and as such it had become a considerable settlement. But, despite a number of permanent residents, Scollen maintained that it functioned primarily as a meeting place trading in furs, provisions, groceries, and peace.

As a consequence of Scollen's travels, Doucet was assigned to Buffalo Lake for the winter. His comments are disappointingly thin, but still revealing. He noted that about 70 houses were occupied, while a significant number of Cree lodges were also present (Doucet 1869-1875). From this figure, and from a census Grandin and Lestanc made of St. Albert early in 1875, Grandin thought there were between 300 and 400 Métis living at or near Buffalo Lake that winter (Codex Historicus de St. Albert, January-February, 1875). Bobtail's 60 lodges and Sotai-na's 50 lodges were certainly present (OMI Missions 1876:35-38), while other members of every known Edmonton-area Treaty band can be traced to Buffalo Lake. Without working out the numbers of Americans or Canadians of European descent, the Buffalo Lake settlement had not less than 1,050 individuals present that winter. It is not surprising that Grandin found that Doucet was very busy indeed during his stay (Grandin, Transcripts, Vol. 5, Part 7, Doucet).

There is a general pattern for settlements undergoing rapid growth. The evidence is largely photographic; indeed, the best overall view is in the earliest photographs of Dawson City during the gold rush (Figure 6 b). Houses would form a reasonably solid inner circle of the settlement; a belt of mixed houses and tents, both tipis and house-like tents, would be next; and finally an outer belt of tents alone (Figure 7 a). Normally the building of houses was done in the fall (D'Artigue 1882:124-125), and the house was frequently built from within the tent.

The complex of genealogical data, and an early survey of the area by C. A. Magrath (1883), suggest that the patterns implied above are a fair statement of what Buffalo Lake looked like.

The tracings of known or possible cabin sites suggest that buildings tended to be arranged about five to six at one place in very shallow concave curves. Whether these clusters represent the inclusion of outbuildings, such as stables, or concentrations of houses belonging to extended families is not clear. In either case, the numbers of people known to be present, and who would be expected to live in houses, exceeds the number of sites located. A precise ratio of people to houses is debatable, but various sources, notably the 1874 Hudson's Bay Company census, and the 1881 Dominion census, suggest that the ratio increased from about 4.5 people per house to about 6.0. Most of this growth represents the slow replacement of the 1870 smallpox victims throughout the decade.

There appears to have been a smaller core of houses at the south end of Boss Hill, on the township line some two miles south of the main centre. Genealogical analysis of scrip returns has revealed that a small group of people associated with Augustin "Azure" Hamelin was isolated from the main community between 1867 and 1883. Possibly this smaller area represents this quasi-ostracized cousinhood. At any rate, some sort of distinction based on family groupings and intermarriages seems probable.

Flora Whitford Chalmers later claimed to remember some construction on the crest of Boss Hill (Lyster et al. 1980:17). As will be described, John Kerr wintered in an area to the south of the main settlement, which was occupied by lodges or tents (Sissons 1946:213). This is consistent with the model of development noted here.

Samuel Steele's (1915:84-86) estimate of 400 houses has been frequently questioned. It may be simply that, at night, the number and placement of buildings made the community seem that large. Nevertheless, the indicated population (about 2,000) may only be a small overestimation.

If indeed there was a "grand council" at Buffalo Lake, numerous considerations come together to account for its occurrence. The peace of 1872 was still holding, but the intervention of a rougher class of trader, or the coming of the police force was disturbing the internal arrangements between the Parkland and Prairie peoples. The remaining buffalo herds in Canada were still plentiful in the Upper Saskatchewan, but there were fears of entering too far into another group's territory, especially as the chiefs were losing control.

The Buffalo Lake area was a safe place for working out several important matters: the possibility of hunting laws, attitudes towards the expected police force, preparations for Indian treaties with Canada, an

assessment of those traders who might be safely dealt with, and perhaps the expected railway. The basic results of Sandford Fleming's railway surveys were already known, and if his recommendations were followed exactly, Salois' Crossing would be the nearest settlement to the line.

The Council was held under carefully controlled conditions. Between early September and the middle of October, there was a six-week period during which the people of the Upper Saskatchewan could work through some strategy for the moment of great change without outside interference. The missionaries had left, and the Police had not yet arrived. If matters were not reported directly and in detail, it is not to be wondered at. The people apparently considered it to be their own affair.

From events of the following winter and spring, the results of the council can be inferred. The community apparently did not think that there was much to be done about the buffalo. When the North-West Council and the St. Laurent colony proposed conservation laws, the Upper Saskatchewan opposed them: they did not expect either native hunters or the Americans to respect such laws, and preferred to obtain whatever share they could (Grandin, Transcripts, Vol. 9, February 28, 1875).

Some tentative relations existed with the Canadian Government through Company officers and the missionaries. They were not necessarily the best of relations, but both sides had behaved with more tact than either side had done in Red River. The new Police were rather a different proposition than Wolseley's army of 1870 had been; they were dependent upon the local people for survival itself, and were well aware of it.

It also appears that the Council tried to define rules distinguishing reputable from disreputable traders. Although the Hudson's Bay Company's traders were not ideal, the old Company was more familiar and therefore thought more reliable. Some trading families were better regarded than others; the reputation of Charles Smith, Addison MacPherson, and Cuthbert McGillis were such that they left for Bow River as soon as they could, which was on April 22, 1875 (Doucet 1869-1877). Indeed, this departure was the largest single permanent move from Buffalo Lake to Bow River prior to the 1880's.

Finally, a number of misunderstandings and uncertainties between the various peoples were resolved, and after September, 1874, much of the hesitation of Parklands people about coming out of the foothills began to be relieved.

From this point onward, both Bow River and Buffalo Lake received large numbers of migrants from the Edmonton district. As previously indicated, the people migrating to the two destinations were of different background and behaved differently. There would eventually be a large migration from Buffalo Lake southwards, but the time had not yet come, and it would come for reasons rather different than expected.

The next two to three years were to be spent in working through the problems posed in 1874, before a new set of difficulties and changing conditions presented themselves.

Migration to the south continued. Indeed the Bow River area received more migrants than did the Battle River settlements. Once the Police were actually present, the people from the Parkland or from across the border began to edge their way out of the foothills, and past the Rivière la Biche villages, on a more permanent basis.

The trading complex of the Upper Saskatchewan, quite sophisticated for some years, had apparently added another degree of that sophistication. Late in 1874, the larger free traders were employing travelling agents. The idea was consistent with the pre-1870 Upper Saskatchewan society, in which traders' families were normally fulfilling this role (Weekes 1939; Charette 1976; Edmonton Post Journals, 1869-1873). John Kerr, for example, had formed a loose partnership with John McLatchie in Red River in late August or early September, 1874. Two others were hired, Fred Sache and Tom Isbister. Kerr and a connection of trading friends spent the winter at Buffalo Lake, going out to visit surrounding camps in the Battle River district. However, Sache and Isbister went on to Bow River, and returned in the spring with their trading results (Sissons 1946:195-196, 201-213). Abraham Salois was similarly employing Pierre Lacorde in the following summer; Lacorde had been a Buffalo Lake resident, but moved to Salois' Crossing upon his return (Hardisty Papers, Item 580; Laboucane 1883).

The trade in buffalo was not particularly profitable. When Kerr visited the Catholic Mission near Pirmez Creek in the spring of 1875, he was informed both by Sam Livingston and Charles Conrad of I. G. Baker and Company that nobody was purchasing robes or furs at Benton. Both, however, believed a market could be had at Winnipeg (Sissons 1946:213-216). The Hudson's Bay Company's trade was almost entirely in robes, and some disappointment is clear in Hardisty's annual report on the 1874 outfit year: Hardisty wanted almost any other variety of fur, but not buffalo robes (Saskatchewan District 1874-1892, B.60/c/11, Hardisty, June 8, 1875).

The crucial problem for the Company, however, continued to be provisions rather than robes, and in the regions south of the Red River, while the buffalo were plentiful, nothing much else was. Items such as flour were enormously expensive, being available only from Benton or Red River. Red River's goods came through Edmonton, and Benton's were coming through very hostile Sioux camps on the Missouri. All goods were very high priced (Hardisty Papers, Item 419). The Company's hopes for improvements through steamboats still were not doing very well. On November 2, 1874, Francis Whitford reported that shortages of blankets had cost the Company much of the business brought to Buffalo Lake (probably to John Kerr) by the Victoria area people (Hardisty Papers, Item 421).

1875

Before the spring of 1875, Hardisty found himself sharing Edmonton with an Inspecting Chief Factor, Robert Hamilton. Hamilton calculated that by the end of that year, no fewer than thirty different traders at Buffalo Lake had been supplied by Richard Hardisty, Lawrence Clarke, or the new English firm at Duck Lake, Stobart and Eden (Hamilton 1875).

Close reading of the Company's documents, particularly the letters written by W. L. Wood at Spitsea, and John Bunn at Ghost River, reveals that although the Upper Saskatchewan Parkland people at Buffalo Lake and Bow River did not as a rule change residence, there was much travelling

from one place to the other. As the Canadian Government's presence became fixed, regular (if, as ever, belated) mail service and police patrols passed Buffalo Lake on the way between Edmonton and Calgary. So did traders, both Company men and others, who were diversifying into cattle. With the solidifying of peace with the Blackfeet in late 1874, the old Blackfoot trading route which passed by Tail Creek became very heavily used. However, from the memoirs of both Jean D'Artigue (1882: 85-87) and the Reverend John McDougall (1973:197), it is quite clear that the Métis sites along Tail Creek had not yet been established.

Nor was Buffalo Lake entirely occupied all year. Still, the place was very populous when the Canadian Government appeared, in the person of Jean D'Artigue, on March 7, 1875:

> On the shores of the lake was a village inhabited by Indians and half-breeds who were hunting the buffalo. The half-breed [a trader who had travelled with him] who had preceded me had apprised them of my coming; so a large party came out to meet me, each contending for the honour of entertaining an envoy of the Canadian Government.
>
> Learning that I had come to see buffaloes, the half-breeds assured me that they were to be found about sixty miles south, and that it would be quite easy to satisfy my curiosity. So the following day, notwithstanding their friendly endeavours to detain me, I set out in the direction of the Cree camp situated in the valley of the Red Deer River [Sweetgrass' camp at Big Valley] [D'Artigue 1882:85].

John Kerr noted in his account (Sissons 1946:212) that Buffalo Lake was not, in fact, inhabited solely by buffalo hunters, although, to be sure, there were many of them. As spring of 1875 finally came, the people broke off in two directions. Some went hunting, and others hastened to get their spring crops planted. The season was very late for the latter, and the situation in which Kerr found himself may not have been normal.

> I was left absolutely alone. But for me the great camp at Buffalo Lake was deserted, the plains hunters and Crees had left for the prairies, and early spring of 1875 was in the air. I had no carts - otherwise I would myself have set off for the Bow River - so I had to wait till Tom Isbister and Fred Sache came along the trail.
>
> It was eerie there by that great sheet of water. After the laughing and chatter, the crowding and gambling and haggling and hoarse shouting, it was strange to have only sun, wind, rain, and wild life for company.
>
> The boys arrived on a Sunday. I remember very well. I was sleeping and was awakened by the sound of loud talking and the rattle of carts. I sprang out of my tent to see the boys driving past a quarter of a mile away, less maybe. They didn't know I had a teepee, as I had none when I left

> them, and thought it was some Indian's tent. I shouted and waved my hands, and they turned and drove up . . . [Sissons 1946:212-213].

The arrangements that Hardisty had made for small Company posts were without authority, indeed, rather with the disapproval, of his superiors. Hamilton's view was that the Company's transportation arrangements would always allow it to act as a wholesaler to the host of traders (Hamilton 1875). However, after Hamilton visited several of these posts, including Buffalo Lake, in October and November of 1875, he concluded that they were needed. The hunting parties were increasingly unpredictable in their movements, and the Company's new transportation system based on steamboats was not sufficiently reliable (Trade Commissioner 1874-1893, D20/4, f. 87, Clarke to Grahame, January 13, 1876; D20/4, f. 141, January 31, 1876; Hardisty Papers, Item 595).

It seemed to Hardisty, in his report on the outfit year ending on May 31, 1875, that Whitford had succeeded quite well at Buffalo Lake, despite heavy opposition trading (Saskatchewan District 1874-1892, B60/c/11).

In the mid-1870's, trade into the Bow River area from Buffalo Lake was growing. In April, 1875, approximately 65 individuals left Buffalo Lake for Bow River; 61 of these traced through families recorded in Métis scrip applications. Between 1875 and 1880, a net migration of 26 individuals to Bow River and 18 to the United States can be traced, for a grand total of 109 emigrants. As the sample upon which these people are based (Day 1985) is not complete, the actual numbers may have been larger than that. At the same time, the movement of people who eventually became Treaty Indians was rather small.

As far as can be seen, then, the net migration in and out of the Battle River area was rather limited: either 154 or 183 went southwards, and either 133 or 144 went elsewhere (mostly to Battleford or Prince Albert). Opposed to this, either 148 or 180 (respectively) came into the district. Consequently, although there was a net migration outwards, it came within a range of 39 to 47 people among the Métis community. Either a very large minority or a majority of those who migrated did so in 1873 and 1874; both emigration and immigration ranked lower after 1875.

By one reckoning, then, the net migration from the Battle River area to all places was 72. As 187 emigrants (possibly 239) are counted, there was obviously a large number of people coming in: 115 or even 167.

Apparently, of these people, about 22 (or 31) came from outside the Upper Saskatchewan. Therefore, there must have been a major movement from the areas of the Upper Saskatchewan to the north of the Battle River/Buffalo Lake areas; between 93 and 136 people who were from the area between Victoria and Whitford Lake, to that between Lac Ste. Anne and the Bear's Hills.

It is to the Victoria, Edmonton, Lac Ste. Anne, and St. Albert settlements that one must turn to account for the new migrants to Buffalo Lake. The fact is quite well documented, although the sources have not been well known (or, in one case, available until very recent years). The regular departures from the Sturgeon River area and Edmonton are noted frequently in Grandin's diaries, in the Codex Historicus de St. Albert, and the Edmonton Post Journals when they resume in 1877.

Why should this migration have occurred, and why should it mainly have been from St. Albert and Lac Ste. Anne? The reasons are surprising, and they open the question of the decline of the Buffalo Lake settlement to reconsideration.

The answer is short. By 1875, the Upper Saskatchewan's Parkland residents had made headway in taking up agriculture. However, a series of misfortunes beyond human control forced a large number of settled residents into the Plains, not, as is usually stated, because there was an overwhelming desire to continue a hunting life, but to evade starvation.

As to the numbers of people living by agriculture, the facts are more or less as follows. On December 29, 1874, Grandin estimated that 64 Métis and Canadian families resided at Buffalo Lake, and of these, 15 were settled to agriculture. This estimate was revised upwards to between 300 and 400 people on January 5, 1875, apparently after Scollen had added further information: apparently another 50 to 100 Métis and several large Cree camps were at points of which Doucet had not been aware (Grandin, Transcripts, Vol. 9, two letters, December 29, 1874; Vol. 15, Part 5, December 29-January 5, 1874/1875). Thus there were about 65 individuals known to have been living by agriculture at Buffalo Lake, and possibly between 10 and 30 at other points nearby.

In the winter of 1874-1875, 400 people remained at St. Albert and took no part in the hunt (Grandin, Transcripts, Vol. 15, Part 5, May 13, 1875). By the winter of 1876-1877, when conditions were much worse, 70 families with 346 individuals in the area west of the Mission at St. Albert and on the St. Albert Trail were no longer dependent on the hunt, although 20 families with 158 individuals still were partly or wholly dependent on the hunt (Codex Historicus de St. Albert, January 11, 1877; Grandin, Transcripts, Vol. 1, January 1-11, 1877; Day 1985). Most of these families, however, had not abandoned farming.

About the same time, Grandin learned from Lestanc and Fafard, who were looking after Buffalo Lake that winter, that most of the people were looking for possible agricultural land (Grandin, Transcripts, Vol. 22, Grandin to Meredith, January 26, 1877).

In general, the crops grown in 1874 were successful. However, something had to be done with grain crops once they were harvested. While nothing is known about the operations of the Hudson's Bay Company mill at Edmonton for that year, in general it did not function well. At the same time, the St. Albert Mission's watermill was gravely damaged by flooding of the Sturgeon River (Hardisty Papers, Item 574). Closer inspection by Grandin and Lestanc revealed that the supposed unhappiness at the fall, 1874, meeting at Buffalo Lake had less to do with Government mistreatment of Ambroïse Lépine than the inability of the mills to handle the crops. This was not encouraging to people who were in a sense experimenting with cultivation (Grandin, Transcripts, Vol. 9, December 29, 1874; Lestanc 1910).

In the fall, there were warnings of disaster. The year had been too wet for sufficient quantities of hay, while it is implied in the Hudson's Bay Company correspondence that considerable efforts had been made to invest in livestock. Therefore, there was a bad shortage of feed even before winter arrived.

Although the circumstances of winter's onset in the Parkland are not well known, it came early and hard to southern Alberta, and both men and livestock were freezing to death by November (Grandin, Transcripts, Vol. 4; Vol. 5, Part 7, N.D. de la Paix; Codex Historicus de St. Albert, 1874-1885; Lestanc 1910; Trade Commissioner 1874-1893, Various Items; Hardisty Papers, Various Items). Although the winter apparently set in reasonably late farther north, the snow was very heavy, and it appears that the domestic livestock could not get any grass. Together with the existing hay shortage, this made it impossible to feed the unfortunate animals.

A brief thaw in February apparently laid down a second ice cover between layers of snow, but caused the early breakup of several streams, making travel southwards very hazardous. Only in early March could snow be cleared away from patches of ground. Another such thaw and very cold re-freezing occurred early in April, and that was enough to destroy most of St. Albert's domestic livestock (Grandin, Transcripts, Vol. 1, January 1-April 15, 1875).

If any of this was causing difficulty at Buffalo Lake, however, it is not apparent in surviving accounts, of which there were four, for that winter (Doucet 1868-1926; 1869-1877; D'Artigue 1882; Steele 1915; Sissons 1946). Apparently it was very cold, but the buffalo were numerous, and Salois' choice of the site in 1872 had been based on just such a winter. Doucet arrived at St. Albert on March 10 by dog team, with one companion, having travelled overnight. Jean D'Artigue, who left a few days later to see the Battle River district, had relatively little trouble in comparison with most travellers.

As the spring took its time in coming, anxiety about the 1875 crop would have been unavoidable. Most people had already used up everything extra from the 1874 harvest; the Police found that there was none to be bought for any price (Grandin, Transcripts, Vol. 1, April 9, 1875). Normally, one would want to start spring ploughing about April. Some crops, notably conventional wheat, had to be planted in the first week of May. April, however, proved to be a month of abortive thaws, followed by unusually late spells of extreme cold, "frightful" roads, and very unsafe waterway crossings. There were heavy ice flows in the North Saskatchewan as late as May 6, and no sooner had the true thaw set in, about May 4, than hailstorms arrived. By any measure, the season promised to be very short indeed, probably much too short for any wheat other than the native Red Club variety.

May continued to be alarmingly cold, as Grandin and Lawrence Clarke agreed on May 18 at Carlton. Clarke's anxieties were not diminished by his knowledge that the Hudson's Bay Company's plans for riverboat transportation were extensive, a plan that had every appearance of unreliability, while the livestock losses made freighters hard to find and debt-ridden as well. The fears of both men proved to be entirely justified (Grandin, Transcripts, Vol. 1, May 18, 1875; Hardisty Papers, Items 629, 936, 938).

June was cold and had strong winds. Fortunately, the rains came when they were needed. Equally fortunate, there were a large number of buffalo. Given the latter fact, a very large number of people could be expected to head out to the Plains. A new priest, Christophe Touze, replaced Doucet at Buffalo Lake early in May, and Scollen apparently

joined him there during the summer. For the entire Bow River crop had been destroyed by grasshoppers, and its people had to come northwards. Thus not only Scollen, but both John and George McDougall were present at Buffalo Lake (J. McDougall 1875a; 1876a; 1876b; Dempsey 1967:24; Grandin, Transcripts, Vol. 9, July 6, 1876).

Fortunately, the fall frosts were late, the killing frost coming on October 2. Although Lestanc's own experimental Red Fife wheat came close to being frozen, most of the St. Albert people who were leaving for the fall hunting were able to do so on September 15, and most who had returned had done so by November 6, when wintry weather first occurred (Grandin, Transcripts, Vol. 1, October 2-November 15, 1875; Codex Historicus de St. Albert, November 5-11, 1875). The harvests were good, but that result could not have been foreseen.

At this time, the detailed survey work on the Canadian Pacific Railway line was beginning in the Upper Saskatchewan, and although the route was open to question, it was soon apparent that it would pass quite close to Abraham Salois' farm and store. Both farming and trading households, then, had good reasons for being in the Buffalo Lake district in 1875. Indeed, there were a good many people wno were leaving for Buffalo Lake from St. Albert <u>after</u> both the fall hunt and harvesting were completed (Codex Historicus de St. Albert, November 23, 1875).

Despite the departure of Cuthbert McGillis' group of families in April, 1875, the settlement by Boss Hill had grown very substantially. In the previous fall, 64 Métis or Canadian families were there; when Lestanc and his colleague, the newly ordained Léon Fafard, arrived there in November, they counted 80 families at this one site (about 440 people) (Codex Historicus de St. Albert, February 2-March 14, 1876). Francis Whitford, who had come from Pigeon Lake in August, had already been alarmed at the site's overcrowding, and the arrival of even more people. Even before the fall hunt was complete, he observed, on September 12:

> I do not know where all the freemen is gone [going] to winter, some here and goodness knows where the rest is to winter [Hardisty Papers, Item 610].

In truth, the Buffalo Lake site was no longer able to accomodate any substantial immigration. Although the site might have been running low on wood for fuel and building purposes, frequently a reason for abandonment, detailed descriptions by both surveyors (Magrath 1880; Miles 1883) and later settlers cast considerable doubt on the matter. Indeed, the very heavy growth of trees on the north side of the lake, and east of the trails to the south and southwest of Lynn Lake, are noted by all sources between 1880 and 1900. One recorded reason for abandonment, derives from Philip and Donald Whitford, who both claimed that the water levels had become too high (Lyster et al. 1980:393, 396; Anonymous 1963:115; Clark 1967:35-36, 361; Magrath 1883). A second, mentioned by Tyrrell (1887:34E), suggested that the people left for areas closer to newer trading posts.

But the main point is that before long the Buffalo Lake people had to start a second major settlement, which comprised at least two distinct villages. The new villages were along Tail Creek.

As far as can be determined, the earliest reference to this location as a village appears in a letter from Francis Whitford written at Tail Creek on November 1, 1875. Buffalo were plentiful, and so were traders. On November 16, Whitford noted:

> I think the traders is goin to keep us busey for they are running each other already [Hardisty Papers, Item 612].

1876

John Sinclair, supposedly assigned to the Bow River area, found himself being pulled northwards by the Hudson's Bay Company's competitors, first to Big Valley, and then to Buffalo Lake itself, as Francis Whitford was unable to leave Tail Creek (Hardisty Papers, Item 772). Sinclair's letter from Buffalo Lake of January 22, 1876, is of considerable interest. He was supposed to be obtaining robes, but these were not of interest to the people there:

> As the Robs are come down to 5 Inst. I will gain nothing and I dont see my staying here much longer. Its only expensive feeding dogs and I dont know what to do with these goods, weither to hand them over to Francis or take them down to Edmonton. Since I came to Bulls lake, I only bought 2 Robes and only a few Bags of Pemmican.
>
> I am going off once again to the Plains, I left some of my stuff out there, for its no use to try & buy a Robe for five Skins. The talk here is all about the price of Robes, and Horse Trading & nothing more [Hardisty Papers, Item 773].

However, Sinclair was unable to leave. The Police had sent Captain Leif Crozier from Battleford to start a post at Buffalo Lake. However, Crozier's previous assignments and a very arduous journey had left him in an advanced state of nervous exhaustion. Sinclair had discovered him wandering far off course, apparently insane, and found himself nursing him back to health for the rest of the winter (Horrall 1975; Hardisty Papers, Items 737, 772). This attempt was supplemented by a meeting In July, 1875, between Inspector Jarvis, and Major-General E. Selby Smith, at which time a separate decision was made to establish a post at the mouth of Tail Creek (Horrall 1975:35, Selby-Smith, Report, January 1, 1876). Colonel James Macleod claimed that the decision was based on a recommendation by Scollen (Macleod 1876).

In early August, it appears that Scollen visited the area, as more than one priest was now required. After he and Touze returned to St. Albert on September 4, he left for the south on September 28. However, he seems to have visited various encampments on the way, and perhaps these visits indirectly give a founding date for Tail Creek (Doucet 1869-1877; Grandin, Transcripts, Vol. 1, August 1-September 28, 1875).

Léon-Adélard Fafard left for Buffalo Lake on December 15, accompanied by Sub-Inspector Sévère Gagnon, who proceeded to Tail Creek. Fafard went on to the older settlement. However, when Lestanc left to assist him in January, he found a house-chapel had already been built at Tail Creek, which Gagnon was using as the Police Station. There is a slight disagreement as to Fafard's departure date and route in the sources, and two dates of construction are possible. Either gives a possible date of foundation for the new Tail Creek site.

Either Scollen made arrangements though the local people during August, or Fafard had been instructed to do so when he left with Gagnon. Grandin thought the latter was the case, as his diary states that Fafard was to go by Salois' Crossing, possibly to consult with Abraham Salois' family. The Codex Historicus' author, either Alexandre Blanchet or Lestanc, thought the arrangements were already made, and Gagnon evidently left on that understanding. Therefore, the Tail Creek site's foundation may have been accomplished as early as August, 1875 (Codex Historicus de St. Albert, December 15, 1875; Grandin, Transcripts, Vol. 1, December 17, 1875).

Lestanc left on January 10, 1876. After visiting Fafard's house-chapel at Buffalo Lake, he apparently arrived at Tail Creek on or about January 16, when he found Gagnon in the Tail Creek building (Lestanc 1874-1879; Codex Historicus de St. Albert, February 2, 1876).

The Tail Creek house-chapel was functioning as a public hostel, and it was impossible to tell whether the Police were running the clergy, or the clergy the Police. A master-and-servant case on February 17, 1876, led to the eviction of the two policemen from the house-chapel. When Grandin passed by Tail Creek in June, 1876, he noted that the building had not been erected in haste (Figure 7 b), and neither were the buildings of the new Police post (Grandin, Transcripts, Vol. 1, June, 1876; Vol. 4; Codex Historicus de St. Albert, February 17, 1876).

Lestanc (1874-1879) wrote on February 2 to report that an additional 50 families lived along Tail Creek. This number excluded Protestant families, whom George McDougall visited in December (Dempsey 1967:24; Codex Historicus de St. Albert, February 2, 1876). In mid-March, Lestanc added (translation):

> 1876 Jan. 10. My departure for Buffalo Lake where Monseigneur sent me to preach the Jubilee. Good weather.

The comment on the weather is significant, and will be discussed later. Lestanc was ten days late due to very poor weather. The "Jubilee" refers to a periodic year of special devotions in the Roman Catholic Church. As practiced in the territory, these devotions would resemble Methodist camp meetings (Grandin, Transcripts, Vol. 9, December 31, 1875). Lestanc (1874-1879) continued:

> Buffalo Lake is about 100 miles south of Edmonton. I arrived there on Friday towards noon [January 14]. We had superb weather and took four complete days to reach it. I found Father Fafard installed comfortably in a small and low barrack, but fitting and warm . . . .

The term "baraque" does not imply a shanty or cabin, but a rather more permanent house, although certainly not luxurious (Figure 8 a, b). The account continues:

> . . . He lacked nothing: above all, he had a good roof over his head. The camp of winterers placed at Buffalo Lake had a good eighty families, without counting a small camp at Tail Creek, and two others at the Red Deer river. . . .

(The St. Albert Codex Historicus for February 2 mentions 130 Métis or Canadian families.)

> . . . I spent two months with these able ("bons") Métis of Buffalo Lake, and I was very happy with their good will in general. They showed a great anxiety to profit from the Jubilee, At the end of the Jubilee I had seen one of the Red Deer River camps. . . .

Lestanc (1910) added a few notes in December, 1910, in his reminiscences.

> . . . As there was a great camp of Métis at Buffalo Lake that particular winter, Mgr. Grandin wished to give these good hunters the means to practice their Christian duties and gain [the benefits of] the Jubilee and sent them the Reverend Father Fafard, a young priest newly arrived from Ottawa and all freshly ordained at St. Albert.
>
> This Father Fafard was full of good will; unfortunately he did not know Cree and the largest number of our hunters spoke no other language. . . .

This observation is not quite correct. Most of the people who did not accept the Treaty were at least trilingual, although they spoke Cree best of the three.

The Codex, and Lestanc's Notes, therefore, place 80 French Canadian or Métis families at Buffalo Lake, and 50 at Tail Creek. This is to be preferred to a letter frequently cited, which speaks of 100 families in the entire area (Lestanc 1876).

Fafard, for his part, was shocked by the dances at Buffalo Lake, and thought he had brought them to an end by New Year's Day. About all that can be said is that he was inexperienced; the Buffalo Lake fiddlers played music at the Christmas Masses at the St. Albert Cathedral. On April 10, 1876, Lestanc (1910) observed:

> . . . Mgr. judged it appropriate, therefore, to send me to Father Fafard's aid. For myself, it was a holiday ("fete") to pass some time with these able ("bons") Métis: it was like old times. I passed two months with Father Fafard at Buffalo Lake; nearly all the Métis approached the sacraments, and did their best to gain the Jubilee. I returned to St. Albert at the beginning of March. . . .

Grandin's Memoirs add a little more. The Fafard mission had been decided after a visit of two delegates from Buffalo Lake, Léon Delorme and Louis Hamelin, on December 12. Apparently twin house-chapels had been erected at the expense of the people. Grandin had no funds (Grandin 1854-1957, Box 1, Item 3, State of the Diocese, 1876; Grandin, Transcripts, Vol. 7, Part 12, State of the Diocese, 1877), and it is quite inconceivable that he would have entertained building anything beyond whatever existed from 1868 or 1869. He observed that the house-chapels were the same as most of the buildings at both places: small and plain, somewhat provisional in nature (although not temporary cabins or shelters), and quite well built. He was rather pleased with them, and thought them preferable to most house-chapels, which he described as "most often only poor and sad barracks. . . ." (Grandin, Transcripts, Vol. 7, Part 12, State of the Diocese, 1877).

They were usually about 20 feet wide, 30 feet long, divided into two rooms by a blanket, one room being a chapel, and the other a house. Both rooms were required on Sundays. In his subsequent travels, Grandin was to find equivalent structures to the south and from Fort Pitt eastwards which were very much worse than what he saw at Tail Creek in June, 1876 (Figure 7 b).

Although the harvests in the Parkland in 1875 were reasonably good, several things created problems. The volume of barley was light. At the same time, the Canadian Pacific Railway surveyors were eating local produce over the winter, and were likely to upset a delicate balance (Grandin, Transcripts, Vol 1, March 1-30, 1876; Vol. 5, Part 7, St . Albert, March, 1876). Moreover, the winter of 1875-1876 was another prolonged and very cold one.

There was no observed shortage of food, at least until March, but the stock of non-buffalo food began to run low. Grandin's Diary also records a considerable amount of trouble in threshing the grain crop. It had been caught by the early and severe weather, while labourers to do the threshing were in short supply. By February 17, the St. Albert Mission had to send its labourers out to buy pemmican at Buffalo Lake: they obtained 2,100 pounds of it, which was about ten times what John Sinclair could procure.

By early March, both Grandin and Inspecting Chief Factor Robert Hamilton found that available food had run out. The price of food was beyond the means of most people who had not hunted buffalo. The winter in the Parkland had been bad enough, but in the Bow River country it was disastrous. Frostbite cases in the Parkland came to St. Albert, but frostbitten men in the south froze. The most famous casualty of that winter was the Reverend George McDougall, although his freezing was probably the result of a heart attack or stroke.

Moreover, the spring was again late in coming, and the roads were extraordinarily poor in March and April. However, some crops were planted by April 25, and comments in the Codex Historicus de St. Albert on May 2 about the hunters' "horror of cultivation" ought not to be taken too seriously. Most who left did so after regular barley and potato seeding was completed.

After a series of pastoral visits in March, Grandin concluded that although 700 to 800 St. Albert people were out on the Plains (including

some 600 in Métis or Canadian families counted by Lestanc at Buffalo Lake and Tail Creek), 500 residents were no longer interested in living by other modes than cultivation (Grandin, Transcripts, Vol 1, March 1-30, 1876; Vol. 5, Part 7, St. Albert, March, 1876; Codex Historicus de St. Albert, April 1 to May 2).

Shortly afterwards, in June, Grandin undertook a long-delayed journey to the Bow River area. His diary entries mention several important things. On both occasions, he travelled thorugh the present-day Hobbema Reserves, which were then uninhabited. The St. Albert Codex Historicus for April suggests the Treaty bands were hunting northeast of Buffalo Lake, and west of Whitford Lake. On June 17, he camped at Tail Creek, where the only people present were the Police. On a later occasion, he remarked that their new post was manned by a Captain and two Constables. Moreover, the post was, in his opinion, the best built police station south of Fort Saskatchewan (Grandin, Transcripts, Vol. 9, July 6, 1876).

The post was at the mouth of Tail Creek, and the Police operated a public ferry there. The crossing of the Red Deer River was difficult and dangerous, and it took over an hour for the ferry skiff to cross. The rest of the journey to Calgary took three days of hard travelling.

For a second year, any possible crop had been consumed by grasshoppers everywhere between Benton and the Red Deer River, and most of the people in the Bow River country had gone northwards. At the same time, Grandin learned that very few local residents ventured into the Cypress Hills, and, in recognition of the fact, the Cypress Hills were transferred from St. Albert's jurisdiction to that of St. Boniface.

Grandin was deeply shocked by the building practices of the Bow River people, and his comments are among the best guides to the nature of things at Buffalo Lake and Tail Creek. In the Calgary area, only one building, an outpost of the Spitsea Hudson's Bay Company post, was all that well built:

> . . .the others are provisional. For the moment these are but poor huts with planking neither for ceiling nor floor. It must certainly be that the cold is less rigorous than that of our north, for otherwise one would freeze in them. I passed a Sunday [June 25] there, and I officiated as pontifically as possible in the poor hut which serves as a chapel. The house which is attached contained the population which perhaps was only fifty, all the natives and many of the Métis now being on the prairie. . . [Grandin, Transcripts, Vol. 9, July 6, 1876].

At Macleod, however, it was even worse, although the furnishings were more luxurious:

> Everything is provisional, everything is provisional, as much those of the police as those of the citizens. You do not have such sad constructions in the north. I do not believe that any could be more distressing.

The "poor hut" allows an indirect comparison with the Buffalo Lake house-chapel. Doucet (1869-1877) gives this building's size as five metres by five metres. While this building would barely hold 50 people, Fafard had no difficulty in administering Communion to 60 individuals at Christmas Mass (OMI Missions 1877:503-507). This would not include the entire congregation, by any means. Apart from English and Cree-speakers, children under 14 would have been present, but not able to receive Communion. In addition, it was usual for Protestants to attend this particular service.

Consequently, it is reasonable to suppose that Fafard had at least twice the amount of floor area available to him than this Elbow River house-chapel had. It was not less than 50 square metres in area.

On July 25, Grandin observed that wooded country, the first north of High River, began about twenty miles north of Lone Pine (near present-day Olds). Passing by Antler Hill, his party came into the approaches to the Buffalo Lake area. Grandin missed the Tail Creek crossing and returned to the old Stoney crossing on the present Highway 2. The former crossing was hard, but despite very high water, the Police ferry was more efficient, and probably safer (Grandin, Transcripts, Vol. 9, September, 1876).

North of Calgary the first person met by Grandin's party was the new ferry operator at Edmonton, John Walter, who had not expected their arrival, and was visiting Fort Edmonton. While waiting in pouring rain, Grandin was greeted with the news that every crop had been utterly destroyed by a hailstorm earlier that day.

Remaining doubts about the total failure of crops everywhere in Alberta were resolved within days. The killing hail was followed by several days of killing frost. Nowhere was any crop of any type left. This was the greatest of successive agricultural disappointments.

Moreover, results of the summer hunt were becoming known. Although the buffalo hunt was not disastrous, it was not good either. A final disaster concerned hay: it was far too wet to make enough for the domestic stock. By August 4, Lestanc and Grandin were planning a plea to the Canadian Government for provisions, both for eating and seeding.

By this time, it was evident that the Treaty Commission's meeting at Fort Pitt was going to be much more important than it had initially appeared. The combination of misfortunes was grave. There were no crops anywhere north of Benton, and the 500 or more people who depended on cultivation had nothing but the hope of an unplanned fall hunt (Lestanc 1910). Commercial transactions in buffalo fell dramatically from June, 1876, and it became clear whatever was hunted must be eaten (Hudson's Bay Company 1870-1893; Hardisty Papers, Item 845).

Fortunately, the fall buffalo hunt was reasonably good, and immediate starvation was avoided, but none seriously expected the results to be more than temporary. James A. Grahame, the Company's Trade Commissioner, was receiving some colourful letters on the virtual collapse of the Company's transport system. On August 31, 1876, Lawrence Clarke wrote from Carlton that:

> The Governor left for Fort Pitt this morning - Mr. H. Sutherland has just come in and goes straight in. I merely

> say that we have lost all the Treaty money, and as we have not a single piece of goods at Fort Pitt, will lose all there. I dont know where the steamer is nor can I hear anything of her. We are out of Tea, Sugar & Flour, and as to goods we are nowhere . . . I shall be in a nice fix about English River & Edmonton. . . [Trade Commissioner 1874-1893, D.20/5, f. 177].

And after frightening reports of starvation in the north had been received, Hardisty was, if anything, more stringent:

> As regards the Transport between this and Dunvegan, I must say we are scarcely prepared to forward any quantity of goods further than Slave Lake. In the first place, the road from Slave Lake has not been commenced . . . The carts and oxen intended for here are all at Carlton . . . It would be folly to send a band of young, unbroken steers and calves, and expect a band of unbroken Indians to do the transport. It will be difficult to say which of the two would require the most training. I cannot see what possessed Mr. Clarke to send up these young, untrained animals . . . I am at a loss to see what they are sent for. . . [Trade Commissioner 1875-1893, D.20/6, f.43, January 9, 1877].

The Treaty at Fort Pitt was widely attended, although the precise numbers are uncertain. Events at both these negotations and those at Blackfoot Crossing are still matters for debate. While the Fort Pitt meeting has been the subject of severe criticism, even before the end of the 1870's, many of the criticisms now made more properly belong to other meetings.

Peter Erasmus' account, and the difference between the Commission's opening statement and the final text, leave little question that the bands who adhered to the Treaty drove a much harder bargain than the Commission expected (Erasmus 1976:241; Grandin, Transcripts, Vol. 1, August 28-September 11, 1876; Morris 1880:168-244).

The bargaining had been already going on for some time when Grandin arrived on September 8. Scollen had met Grandin about halfway to Battleford, by which time it was known that arrangements for relief flour, bacon, and seed were needed everywhere, and, as cash payments were being made, herds of merchants were present. Grandin was able to purchase large numbers of oxen and cattle, which eventually made their way to the unfortunate freighters of the Upper Saskatchewan (Codex Historicus de St. Albert, September 29, 1876; Erasmus 1976:253-255, 261-262). Indeed, the presence of traders, and the Blackfoot experience with American traders, may have been decisive in making the Treaty appear necessary (Erasmus 1976:247-249).

Both Erasmus and Grandin were well pleased with the result of the meetings. They subsequently met between Goodfish Lake and Saddle Lake, and travelled to Victoria together, spending three to four days ensuring that all was understood. Grandin would have assumed that Erasmus, who frequently worked on behalf of the Methodists, would be able to ensure

that group's co-operation (Grandin, Transcripts, Vol. 1, September 10-15, 1876; Erasmus 1976:253-255).

Mention has been made of the cash payments which came under the Treaty 6 agreement. For the years 1877, 1878, and 1879, the Police Post at Tail Creek was the usual place of payment for people under Treaty who lived west of Fort Pitt (Indian Department 1878-1889, Vol. 9412, File 10985, pp. 474-477, October 8, 1878; Vol. 1677, File 187, 1879). Cash was a very rare commodity prior to the 1885 rising, and, even after, it did not meet the commercial needs of Edmonton's economy until 1897 at the earliest. The payments were not large: the total came to $44 per individual for the years 1877 to 1884, and many were late in receiving them (Scrip Applications). However, the total amount paid was per individual, not per family, and while the actual purchasing power of a "dollar of account" was about $30 in mid-1980's terms, the cash dollar was worth somewhat more: about $36 at Fort Edmonton in 1879, and a somewhat lesser amount at Buffalo Lake. Thus a family of six (the 1881 average) would have received $264 for the 1877-1884 period, or more than $7,920 in present purchasing value (Day 1982).

It will not be wondered, therfore, that even more merchants and adventurers came into the Upper Saskatchewan and were to be found at or near the Battle River settlements. All available sources show that a very large number of European descendants came into the Upper Saskatchewan in 1877 and 1878 and stayed. A number of individuals who had gone south, such as Cuthbert McGillis, Charlie Smith, and Addison McPherson, returned. The Lafournaise dit Laboucane family settled at Salois' Crossing at this time. Buffalo Lake's character as a commercial centre was very solid for the rest of the 1870's.

At the end of August, 1876, the inhabitants were not at Tail Creek. It appears that the buffalo herds lay west of a line between Whitford Lake and present-day Scotfield. They were too far east for Tail Creek, but Buffalo Lake remained heavily occupied, although the evidence is indirect. John Sinclair set out for the Company's place at Buffalo Lake, which was Whitford's old establishment at the northeast corner (Grandin, Transcripts, Vol. 1, March 1, 1876; Northern Department Council 1868-1880, June 1, 1876). Scollen might well have gone by to visit Fafard (OMI Missions 1878:355-357).

Fafard, moreover, seems to have learned a great deal about writing: when he left St. Albert, he was scarcely literate, but in the end, he wrote, or was assisted in writing, a letter which is the most exact description of the Buffalo Lake site (OMI Missions, 1877:503-507).

Fafard and most of the people at Buffalo Lake and Tail Creek came in to St. Albert on September 5. After a particularly solemn Mass on October 1, Grandin gave a full account of the Treaty from the Cathedral's pulpit. He then spent the next few days rearranging matters both for Bow River and Battle River. Grandin had problems in finding a partner for Fafard, and so it was not until October 30 that Fafard and an elderly, insecure, and nervous Reverend Alexis Brunet could leave. Fafard left for Buffalo Lake, and Brunet was to look after Tail Creek and Grande Pointe (Spotted Lake, see Figure 3) (Grandin, Transcripts, Vol 1; Codex Historicus de St. Albert, September 5-October 3, 1876).

Doucet's rough notes for the period suggest that Fafard had had to go out into the Plains, particularly in the summer of 1876, as it was no

longer possible for one large single hunt to support itself. As Doucet himself was not travelling (OMI Missions, 1878:355-357), his sources of information included Scollen and some of the Bow River Métis. However, although this proved to be the case in the winter of 1876-77, Fafard does not appear to have travelled very far in the winter of 1875-76.

On October 3, 1876, Fafard dictated or wrote the following account (translated):

> Eight days after my ordination, I received my obedience to go and exercise the holy ministry in the middle of a Métis population, in the neighbourhood of 800 souls, wintering at Buffalo Lake. . . .
>
> This would not include the Tail Creek or Grande Pointe villages.
>
> . . . It had not been without a certain apprehension that Mgr. Grandin saw himself forced to confide this work in me, and I myself was far from being without worry because of my inexperience.
> . . . I visited all of this population which surrounded me. Everywhere I received a good welcome; these poor people seemed so happy to see me! They responded to the invitation which I made to them to assist every morning at Holy Mass and each evening at prayer. I profited from their gathering each day to give instruction to which they listened with the greatest attention.
>
> During the first days, I carried out numerous baptisms. I administered this sacrament to 80 children and 6 adults during the course of the winter and summer. At the time approaching the feast of Christmas, I pressed all those who knew French to approach the sacraments [of Penance and Communion]. About 80 responded to my call, and at Midnight Mass I had the joy to distribute Holy Communion to 60 of them. How I was happy, on that holy night, to celebrate the birth of our Saviour in the midst of this population of Métis whom I already loved so much and in this modest and poor chapel which reminded me so well of the stable at Bethlehem! What a happy coincidence for me to begin my career as a Missionary and a saviour of souls on the same night when our Lord appeared on earth to be the Saviour of the human race! I did not hear the angel choirs celebrating the arrival of the Messiah, but the songs of our good Métis filled me no less with the emotions of it, and I forgot, in this circumstance, the pompous ceremonies for which this Feast is the occasion in our beautiful Cathedrals.
>
> The holidays which followed were well sanctified. However, the demonstrations of joy seemed excessive to me; I made the observation of it, and soon there was an end to the feasting and dancing.
>
> I was vividly touched on the first day of the year, in seeing all the people gather around my little house. . . .

Fafard uses maison, not cabane, as a Quebecois French-speaker would make the distinction; similarly Fafard's French colleagues used baracque or maison, not bicoque.

> . . . to wish me a Happy New Year and ask my blessing; the spirit of faith and the good disposition of these dear Métis made me hope that I would be well in their midst: I was not mistaken.
>
> A few days after the beginning of the year, I went to visit some sick people in two camps of departed Métis about 30 miles from the Mission. I profited from it to announce to them the Jubilee which was to be preached at Buffalo Lake. Father Lestanc came to join me to this effect a little after Epiphany [January 6] and as soon as possible we began these holy exercises which lasted fifteen days. . . [OMI Missions 1877:503-507].

Lestanc (1874-1879), as his notes record, arrived about noon of Friday, January 14, 1876. He was ten days late, and would have been expected at Buffalo Lake or another site by January 4. Fafard's given distance of thirty miles, normally a two-day trip, would equally well apply to sites at Tail Creek or Salois' Crossing, if he meant to meet Lestanc. The mention of two distinct camps is more consistent with Tail Creek than Salois' Crossing, although either is more likely than any of the increasingly scattered Plains camps. The presence of ill people virtually rules out the latter. Besides, there was a prepared place for Lestanc at Tail Creek, and Sub-Inspector Gagnon was in it. This passage would appear to give an indirect corroboration of Grandin's memory of Lestanc's journey. Although the writer of the Codex Historicus and Fafard both believed that Lestanc went by way of Tail Creek, it appears that Fafard went to Tail Creek and did not find him there. Rather, Fafard was back at Buffalo Lake when Lestanc arrived there, and Lestanc proceeded onwards to Tail Creek later. Grandin's later recollection that Lestanc went by way of Salois' Crossing is given some support, and with it, the possibility that the "Salois connection" had arranged for the Tail Creek house-chapel (Grandin, Transcripts, Vol. 1, December 15, 1875-January 10, 1876; Vol. 4). Fafard continues:

> . . . We gave two instructions by day, one in Cree, by Father Lestanc, and the other in French, by myself. With the exception of two or three persons, everyone [received the benefit of] the Jubilee. One can affirm with joy the extraordinary good worked by these holy exercises. The Father Superior [Lestanc] passed several days more with me, and profited by it to visit another camp of Métis.
>
> From the beginning of January until Easter, I taught catechism in the morning to the children, and in the evening to a certain number of ignorant young men who regularly assisted at these classes. . . .

Some forty families were sending their children to some form of daily school. As the presence of an entire family, including the youngest, was needed on a hunt, maintaining a school of any sort was a struggle. At Tail Creek, Brunet's efforts were to fail completely in the winter of 1876-77.

The approximate figure of 800 Métis at Buffalo Lake is confirmed: Fafard estimated it from the number who attended the Masses and other services. The "other camp," noted above, however, included the villages at Grande Pointe and Tail Creek. Fafard also indirectly says other things about language usage. The various settlements understood his French somewhat better than he realized. He explains why Grandin did not stop at the settlements on the way southwards, and how he was in an area where the Crees of the Fort Pitt District also were to be found.

> . . . Towards the 15th of May, I left Buffalo Lake, after having waited vainly for Mgr. Grandin, who was to confirm the children, and I followed a party of Métis, who had stayed at the mission all winter, in their travels across the plains. On the road, I met many Natives and Métis who had not seen a priest all winter. A great number profited of my presence to make their Easter and Jubilee duties. Work was not lacking. It is especially in the prairie that these poor people have need of a priest; the life which they lead and the dangerous hunting expose them to perils of every nature. Each day, I taught catechism to the children, and every night I brought the camp together for prayer and the recitation of the Rosary. I also had the consolation to have had attentive hearers every day at Mass.
>
> I met some camps of Crees and Blackfeet. Alas! The number of those of them who lead a truly Christian life is still very small. . . [OMI Missions 1877:503-507].

Another account of the district may now be considered (D'Artigue 1882). In August, 1876, Sub-Constable Jean D'Artigue and "Sub-Constable M." were assigned to replace the original Police staff at Tail Creek. They were not altogether reliably guided there by Constable Patrick Curran.

While travelling, they passed Pigeon Lake's settlement on its northwest shore. While nobody was present, D'Artigue noted the cultivation of grain and other cereal crops. The area of good land was limited, and this agricultural area was not capable of expansion. However, D'Artigue thought the crops were good in quality. The main food there was fresh or dried whitefish.

Four days later D'Artigue's party reached Tail Creek about midnight. There were four policemen waiting for them in the new post built since their eviction from the house-chapel in February.

Unlike Palliser, and the constable then in command, D'Artigue was not impressed with the site's possibilities. The surroundings looked like a desert. It may be that the oral tradition of a sand barrier between the lake and the creek comes from the circumstances of this particular year. As to the post:

> Fort Tail Creek consists of three buildings only, whose walls are made of logs placed one above another, and the roofs formed of poles covered with hay and earth. When the roofs have not sufficient pitch, the rain easily penetrates them. . . [D'Artigue 1882: 120].

Obtaining the right pitch for a sod roof was, in fact, not difficult for a builder familiar with local customs, and many families, notably the French-Canadians at Lamoureux, continued to prefer sod to spruce or pine shingle roofs until early in this century. However, errors were made, and these can be shown by photographic evidence both at Calgary and Fort Macleod.

Grandin's Diary (Transcripts, Vol. 1, June 17, 1876) of his first visit to Macleod confirms D'Artigue's first point indirectly. D'Artigue continues:

> . . . Two of the buildings (one used for men's quarters and the other for a stable) are surrounded by a stockade made of stakes. As for the third house, it was the dwelling of the constable or the officer, as the case might be, in charge of the post. Situated in a bushy valley, Fort Tail Creek is overlooked by hills covered with fir trees. On the right, flows the Red Deer River, on the left, Tail Creek. But the site is not a good one; for in time of war, the surrounding hills would afford a refuge, and protection to the enemy.

However, the Tail Creek Post's true purpose was to keep an eye open on the major and very old trade route; it was not military in intent. It was a new settlement, at least as a Métis site, but the houses were meant to last from year to year.

> About the middle of October [1876] the Indian and half-breed hunters began to arrive; the former having no carts, but using their squaws . . . their horses and dogs to transport their baggage; as for the half-breeds, they carried their luggage in Red River carts, and as many of them had been there the previous year their cabins were ready to receive them . . . but the new comers had to build . . . .

The houses would be pretty rough, and so the word "cabin" would occur to the Ontarian translator. D'Artigue (1882:119-121, 124-125) continues:

> . . . and this is the way they set about it: selecting a site well sheltered from the wind, and amply supplied with food and water, they felled some trees, and placing the trunks one above another, formed the walls of the new building. The roof was constructed with poles placed in rows and covered with hay and earth. Holes were cut in the walls for door and windows, the latter being closed in when so required with the skins of animals; while the doors were made of slabs of wood. . . .

The word "slab' indicates that the logs were being squared either by broadaxe or whipsaw. There are oral traditions of sawpits at the Buffalo Lake site, but doubt has been cast on identified remains. The pieces cut off the round log made a "slab."

> . . . split with the axe and fastened together with thongs of rawhide. The chimney was constructed with unburned bricks composed of hay and mud, and the floor formed of hewed logs completed the carpenter work. This done, they plastered the crevices well with mud and the cabin was ready for occupation.

There are several good photographs of such chimneys, which match other written accounts.

> The surroundings of Fort Tail Creek were soon occupied by three or four hundred persons, and night was made hideous by the deafening cries and repeated pow-wows of the Indians, and the no less discordant screeches of the violins of the half-breeds, who vied with the Indians in turning our hitherto peaceful valley into a very bedlam.
>
> Winter came at last in all its vigour, and snow fell in abundance early in November. Then followed the storms common in these regions and which usually arose very suddenly, so suddenly, indeed, that the bands of hunters roaming over the plains in search of buffalo were often in danger of being overcome before reaching shelter.

1877

Reverend John McDougall described the situation in the winter of 1876-1877 as follows:

> The past winter has been a hard one for the Indians all through the country, owing to the building of shanties and winter houses on the various water courses, and far down on the plains by mixed bloods and whites, thereby blocking out the buffalo, the usual supply for meat and trade having failed: and as the reasons already given are so palpable, there has naturally arisen in the Indian mind a feeling of discontent, and a gloomy outlook as to the future; and as there are always some, who, though knowing better, still encourage such feelings in the native mind it falls to the lot of the Missionary to do what he can to soothe and conciliate. . . [J. McDougall 1877:xiv].

Both Fafard and Doucet claimed that there were Métis among the people about whom McDougall is writing. Note also that McDougall distinguishes between "shanties" and "winter houses."

There was reasonable agreement that the winter of 1876-1877 was very difficult. Fafard and Alexis Brunet left for Buffalo Lake and Tail Creek respectively on October 30, as a blizzard observed by D'Artigue was beginning. On November 3, even lighted fireplaces at St. Albert could not prevent water from freezing in the Bishop's Palace. Illness, likely an influenza, not in itself serious, but enough to slow outside work to nothing, was in the settlement by November 6. It was likely also present at the Battle River settlements. Although this severe cold spell, and the illnesses, were over by late November, the concern of the Tail Creek Police for any remaining people on the Plains was understandable (Grandin, Transcripts, Vol. 5, Part 7, Brunet).

There were still substantial herds of buffalo, although the people of Battleford had to reach Antelope Lake (by Youngstown) to find any (Grandin, Transcripts, Vol. 1, various references). Although small herds reappeared 20 miles away from the Spence Creek post, virtually no trade could be made at Tail Creek. The buffalo there were needed for food, and the Company's stock of goods was wintering at some unknown point between Prince Albert and Cumberland (Trade Commissioner 1874-1893, D.20/27, f. 91, 29 September, 1883).

Given the fact that there was a shortage of food, including animal fodder, the early cold spell was alarming. It prevented hunting, while the need to keep warm meant that more food had to be consumed. Although Fafard was able to report that matters at his own mission at Buffalo Lake were going well (Trade Commissioner 1874-1893, D20/10, f. 79, May 1, 1878), more alarming reports were coming in from the Plains. The freighters who were to retrieve the Hudson's Bay Company goods could not leave until early December, and absorbed frightful financial losses, while outright hunger was stalking those who were still hunting. By December 10, the St. Albert Mission decided that an emergency journey to Benton for food supplies was necessary. Both Scollen and Lestanc undertook these journeys (Hardisty Papers, Item 1098; Lestanc 1874-1879, 1876; Doucet 1869-1877, January 2, 1877; Grandin, Transcripts, Vol. 1, December 10-26, 1876; Codex Historicus de St. Albert, December 10, 1876-January 15, 1877).

The following events are derived from the St. Albert Codex Historicus and Grandin's Diary. The warmer weather of late November was a trap, for there was much thawing. On December 15, the cold weather began again, burying the icy roads under a cover of snow, thereby making them most dangerous. By December 18, all local authorities had recognized that the situation was grave. Indeed, when Grandin arrived at Edmonton, he encountered the two Hudson's Bay Company Chief Factors, Hardisty and Clarke, the Inspecting Chief Factor, Robert Hamilton, the Reverend Henry Manning of the Methodists, the Reverend Doctor William Newton and his (Anglican) bishop, John McLean of Saskatchewan, any available North West Mounted Police officers, a stipendary Canadian magistrate by name of Beaulieu, and many others. Vital Grandin came close to panic; he was seriously ill, in the middle of some very unpleasant negotiations, heavily in debt, and obviously in need of some means to keep St. Albert fed in the spring. Under these circumstances, the combination of officials unnerved him altogether.

However, he had a pleasant surprise. His Anglican counterpart, Dr. McLean, was convinced that the St. Albert Mission had the best understanding of the country and people, and would be the best means of ensuring that emergency relief would reach all in need. McLean held control of the meeting throughout, and any sectarian feeling that may have been feared was dispelled. A census was begun forthwith, in preparation for a grant of relief that Governor Laird had already approved by telegraph to Colonel Jarvis.

The first 15 bags of flour were released from the Police stores on December 20. It was indeed clear that it was not too soon, and a "scandalous battle" broke out over its distribution the following day. Another ominous plunge in temperature occurred on December 22, further straining supplies, but driving the combatants indoors. By Christmas Day, calm had been restored. A general meeting at the St. Albert Convent schoolhouse on December 27 led to agreement on rules, while another 40 bags of flour (4,000 pounds or 1,818 kilograms) were immediately available. More supplies by Government Courier and many people from outlying districts arrived at the same time. Consequently, January 1, 1877, had more than ceremonial cause for celebration. It was, in fact, one of the few times the Bishop ordered a formal Te Deum Laudamus service of thanksgiving.

At Buffalo Lake, at Battleford, and at Bow River, the hunting was going reasonably well.

Grandin and Lestanc visited the areas upstream from the Mission, and the Long Lake settlement along the St. Albert Trail, and accounted for 441 people, excluding 63 associated with the Mission, Convent, and Orphanage. He listed 20 families with 156 people as being partially dependent on the hunt: the rather large average family size probably accounts for that. The 285 other individuals were distributed among 70 families. The Mission concluded that another 44 families who could not be visited were out on the Plains. If these families were "average" in size (about five per family), 376 people normally at St. Albert were on the Plains. If the large average is indeed significant, the actual number of individuals temporarily at Buffalo Lake or Tail Creek may have been as many as 500.

On December 7, the Codex Historicus noted that a letter from Fafard reported that the Buffalo Lake site was doing well. The Reverend Alexis Brunet, however, was not happy at Tail Creek (Grandin, Transcripts, Vol. 5, Part 7, Brunet).

The correspondence that followed is important for several reasons. Travel conditions were very poor: Brunet wrote from Tail Creek on December 14 and December 15, but his letters only arrived on January 6, 1878, 22 days later. A third letter was lost altogether. Grandin's reply of January 8 notes some important things. While the people were scattered on the hunt, Grandin was not surprised, nor did he think that this was unusual any more. Yet there were still families who were staying at Tail Creek, rather than hunting, for Brunet was able to hold some catechism classes there, even if attendance was small. Grandin placed a great emphasis on the lack of education among the people, and was not impressed by Brunet's lack of interest in catechism or in travel. Indeed, Brunet hoped Fafard would do all the travelling with the

summer hunt; presumably enough people stayed in one place. Actually, Grandin hoped to send Lacombe there, as it seemed he might return to the country. Grandin finally referred to tension between French-Canadians and Frenchmen.

Grandin, in fact, mentions a crucial thing. Even in this worst of times, Brunet had 20 families under his care at Grande Pointe, and rather more, perhaps up to 30, at Tail Creek. Fafard's letter, quoted previously, suggests not fewer than forty families were continually resident at the Buffalo Lake site. These, be it recalled, exclude Protestant families and many native ones. Therefore, 90 Catholic families, at a minimum, were constantly resident at the Buffalo Lake settlements in this winter of 1876-1877. From Methodist data, notably an inspection report by the Reverend A. Sutherland, about 750 individuals under Protestant influence may also have been present (Sutherland 1880:cxxv-cxxx; Morris 1880:173-175).

In the winter of 1876-1877, D'Artigue (1882:125) believed there were 300 to 400 people in the valley itself, which would exclude Grande Pointe. His figure must include members of the Treaty Bands. There were, in addition, not fewer than thirty merchants. Fafard's post at the northeastern corner of the lake had almost surely had in excess of 800 souls in the previous winter of 1875-1876. As Francis Whitford had observed, that site could not bear many more people, and we have seen that this led to the large-scale occupation of Tail Creek. Therefore, one may gather that there were perhaps 800 to 900 people at Buffalo Lake, perhaps 350 at Tail Creek, and not less that 400 at the Spotted Lake-Grande Pointe areas by mid-December, 1876. In view of the subsequent severity of the winter, the number may well have increased. D'Artigue (1882:126) noted that stragglers came in throughout the winter. The total number was surely not less than 1,500, and 1,700 is not beyond reason.

On February 1, a constable who had been at Buffalo Lake, Sergeant Richard Carr, apparently brought in some messages. Both the Edmonton Post Journals and the St. Albert Codex Historicus are clear about his purpose: the arrangements made with the Government involved two distinct loans. The first, as noted, was flour for those with little or nothing to eat. The second, to be delayed, involved seed wheat. The names of those who needed it were being taken in early February, and Carr would have to see either to a census or the distribution of the seed in the Battle River area. Since the Government assistance was not a gift, but a loan, there was to be a rather large amount of debt.

By March, 1877, there was very little question that even with government assistance, and a reasonably good buffalo hunt, hunger was widespread. Indeed, only the area most dependent on the buffalo, the Bow River, seemed not to be affected (Hardisty Papers, Various Files, 1877; Trade Commissioner 1874-1893, D.20/8, f.26). It appears that distress was particularly acute among the people who had adhered to Treaty 6. Although entitled to supplies as a matter of right, people on Treaty were not, therefore, included among the arrangements especially made for the winter. The general difficulty did not lie in intention, but in implementation. Supplies had to be obtained and then transported, and the Hudson's Bay Company's transportation system had collapsed between beached steamboats, unsuitable hauling livestock, and poor roads.

As ploughing had an early start by April 19, those Edmonton and St. Albert people who either wanted or needed to hunt began to leave on May 3. However, Abraham Salois had exactly one robe left for the Company after he looked after his own interests.

Equally telling, in their own way, are memoranda of accounts owing. On April 2, 1877, the Fort Garry Accountant, George S. MacTavish, noted that debts in the Upper Saskatchewan (from Victoria upriver) had come to $11,413.72 in total, although, at that time, the losses seemed heavier for the 1875-1876 year than 1876-1877. Therefore, he reckoned that $8,028.27 in debts were likely to be paid (Trade Commissioner 1874-1893, D20/9, f. 79). However, Lawrence Clarke ultimately had to obtain court orders to the sum of $7,150.59 by July 17, 1878 (Hardisty Papers, Item 1098). Therefore, only $4,263.13 was actually collected. The anticipated loss for 1876-1877 had been $852.33, but in fact was $3,410.80. Some of the heaviest losers, however, recovered in the following years, as for example Felix Dumont, Paul Fagnant, Louis Montagnais, and Joseph Lamoureux were to do. Others such as John Ashen and Hiram Johnston, although having smaller debts, never did recover from that disastrous year of 1876-1877.

Similarly, a memorandum on debts from Lac Ste. Anne residents, compared to the 1874 Census, reveals that 14 out of 32 families mentioned in the census were in arrears. The losses as a whole were rather small, but some families were in very serious difficulties. As the accounts are in the old Made Beaver standard, exact valuation is not possible, but in practice, one might arbitrarily put a Lac Ste. Anne value at 1 MB = 70¢. The mean average family debt was then $15.33, but half the families owed less than $11.90. A thirty-fold conversion into modern purchasing terms will paint a very approximate picture. Nevertheless the point is that these debts were most unlikely to be paid in 1877, if ever (Hardisty Papers, Item 1098).

Some of the statements are not nearly so unemotional. At Fort Pitt, Peter Pambrun noted that on February 26:

> Buffalo are nowhere near us, even if they were, we have no horses [Hardisty Papers, Item 1013].

and further added on March 26:

> I do not know how the poor Beggars will live when there are no Rabbits & no Buffalo to run out to. We are in a manner bound to maintain them, so far. It is of course understood that they are government dependents but I think it will take Mr. Laird some time before he will command means at Battleford to maintain 6 or 800 Indians [Hardisty Papers, Item 1015].

At St. Albert, Grandin observed in his Diary (Transcripts, Vol. 1) for March 22 (translated) that:

> We do not know any longer how to furnish the famished with food. It is truly desolating and worrisome. Each day, there are more of them coming.

The delayed effects in the far north were perhaps the worst. Chief Factor Roderick MacFarlane thus wrote from Fort Chipewyan, as these results took hold:

> This year we have absolutely no provisions whatever in this District & I dont know how we can get the boats in to the Portage [Grand Falls on the Athabasca River] 1st trip next spring & feed the people here. There are no Deer anywhere this year - and if don't at least fret [freight] 700 pieces [70,000 pounds or 36,400 kilograms] to Slave Lake . . . we shall be completely dished; so will MacKenzie River as we cannot keep them otherwise . . . All our Indians are starving this Winter . . . I am afraid lots of Indians will perish before Spring [Hardisty Papers, Item 1077].

It seems appropriate that Fafard, Brunet, and a very large number of their flocks returned to Edmonton and St. Albert on Palm Sunday, March 25, the beginning of Holy Week (Grandin, Transcripts, Vol. 1, March 25, 1877; Codex Historicus de St Albert, March 25, 1877). The people kept coming in small hungry groups, both Métis and Stoneys, throughout April. However, planting could begin on April 20, a little earlier than usual, and the Police had a shipment of both seed and provisions on April 24.

1878 AND THE ABANDONMENT OF THE BUFFALO LAKE SITE

Much of the following is drawn from the Scrip Applications and the Edmonton Bulletin.

Although the winter of 1876-1877 was not the last year of major occupation, either at Buffalo Lake or Tail Creek, it was its greatest year. From Spring, 1877, onwards, however, the story of both places is one of decreasing population. If all Battle River settlements are included, the district lost a net total of 50 people in the sample population traced in the scrip applications, or one-fifth of its 1876 population. But the readjustments in population within the Battle River district were major ones, and when immigration is measured after natural growth rates are calculated, it becomes a much larger factor than at first appears.

An obvious cause for major changes was the rapid disappearance of the remaining buffalo herds, a fact so obvious that it has frequently been taken to be explanatory in itself. However, while a few people associated with the Buffalo Lake area became part of the last effort at hunting buffalo in the far south, even in the United States, a careful examination of family "biographies" assembled through the scrip returns suggests that this particular cause was not as significant as it first appears to be. First, the three preceding winters had demonstrated that the Upper Saskatchewan society had become increasingly dependent on cultivated crops and domestic livestock. The buffalo, plentiful or not, were no longer sufficient for life in any event. Indeed, hunger stalked the people despite the fact that the hunts had actually improved during the mid-1870's.

Second, the event had been long foreseen, and other forms of living, including commercial business, had become an end in themselves. The process of adaptation to either commerce or agriculture took time, about seven and five years respectively, but by 1877 and 1878, this adaptation was proceeding.

The abandonment of the Buffalo Lake and Tail Creek sites was, ultimately, caused by migrations made for these reasons. The movement of people who lived by the buffalo towards the last herds in the south was not large enough to count for much. Most people who were so motivated had been edging southwards into the Bow River district from 1872 onwards.

Two distinct migrations can be traced. The first, which drew heavily upon the English-speaking population, was eastwards towards Battleford and Prince Albert. The reasons were almost entirely commercial, and although several families remained there, others continued to follow economic opportunity. A large number went to Calgary in anticipation of the revised Canadian Pacific Railway route, and not a few were back in Edmonton as other opportunities opened up in transportation. A few families of agricultural mind had also anticipated the revival of the old Calgary - Lone Pine - Bear's Hills trade and war route, and had established a settlement which may be identified both with Ponoka and Morningside prior to 1884. Their presence, as well as the economic successes of the Hobbema Reserves, was to draw both I. G. Baker and Company and the Hudson's Bay Company back to Battle River.

Similarly, the signing of Treaty Seven in the Blackfoot and Morleyville Stoney territories presented attractive prospects both of trade and employment. Many of the people at Buffalo Lake, including the oldest families, had become well aware of the effects of cash payments, and were not slower in moving after the benefits than any trader from Winnipeg, Ontario, or the United States. Many had already been trading into the Bow River for years.

Salois' Crossing, and the later Todd's Crossing, drew away many of the people whose interests lay in agriculture. Salois' Crossing, now Duhamel, had its time of prosperity and a large Métis - native - Franco-Belgian population before its people began to drift back towards St. Albert, or took an active part in the St. Paul des Métis colony. Indeed, most of the people of Rivière-la-Biche moved to Salois' Crossing between 1883 and 1887, and in the latter half of the decade, Salois' Crossing had 500 Catholic parishioners, as opposed to an estimated 125 in 1881. Todd's Crossing was rather similar in nature, although it had more English-speaking people than did Salois' Crossing.

In addition to the signing of Treaty Seven, and the drift back towards Salois' Crossing, Todd's Crossing, and St. Albert, several specific events of the later years of the 1870's apparently hastened the abandonment of the Buffalo Lake site. A working grist and sawmill apparently was in place on the Sturgeon River by the end of summer. Threshing machines made a competitive appearance at the same time, under the auspices of two old Buffalo Lake traders, Louis Mearon and the Lamoureux brothers. Not least important was the fact that for several successive years, crops were good: if one section of the St. Albert - Edmonton - Fort Saskatchewan complex did badly, another covered the losses.

A very mild winter in 1877-1878 appears to have caused at least two major crises of health. Two or three illnesses of an undefined nature occurred in St. Albert during the spring of 1877, although Doucet had already noted the outbreak of scarlet fever in the Bow River area. Both that illness and typhoid fever were identified at Edmonton before the winter of 1877-1878 arrived. Apparently the warm winter kept some viruses and bacteria alive and well. There were few fatalities, generally among very young children. However, it was certainly cause for alarm, and at least some Bow River families returned to St. Albert in order to be near its medical facilities.

In September, 1877, the North West Mounted Police post at Tail Creek was apparently closed, although Treaty payments continued to take place there, the last occasion being in the fall of 1879 (Edmonton Post Journals and Battleford Herald, Fall, 1879; Indian Department 1878-1889, Vol. 1677, File 187), and many merchants and traders remained. There were still enough occupants at Buffalo Lake to justify one resident Catholic clergyman, the Reverend Alexis Bourgine. Bourgine had virtually no capacity to travel, having a severe case of epilepsy caused by the smallpox. However, he spent the two winters at Buffalo Lake, specifically not Tail Creek (1877-1878 and 1878-1879), and presumably functioned adequately.

Bourgine, however, did not travel with the hunters, whose bands were smaller and more scattered. This was left for clerics in better health. This was the general practice of all denominations: one clergyman who was either old or ill remained at a base site, and all others travelled. It appears from a consensus of sources that the scattered bands were largely composed of Plains Cree or non-Christian Woods Cree.

The final end of the age of the buffalo on the Upper Saskatchewan was not doubted. Even in the winter of 1878-1879, hunting was still possible, but the failure in the spring of 1879 was complete. There were no buffalo anywhere north of the United States, or, rather, none that anyone could find. A very few isolated groups were still hidden in far, inaccessible places north of Empress, and the last reported were located by some of Big Bear's people in 1887. However, it is unlikely that the total number amounted to even 100 animals. Bourgine thought the total absence of provisions would finish Buffalo Lake as early as March, 1878, but the end was apparently recorded in the Codex Historicus de St. Albert for July 31, 1879. At that time, a group of Métis who had not been at St. Albert for several years, returned "in great misery," and much death by hunger occurred among the Plains Indians. It is the last known contemporary documentary evidence of occupation at the Buffalo Lake site.

However, it is not entirely clear that some occupation did not carry on for a time. Although Charles A. Magrath reported abandoned houses in his field notes for the Eleventh Base Line, and wrote of the entire site as if it was deserted in March, 1883, further survey evidence and local tradition leave open some doubt. Marriage patterns suggest that a group of families associated with Antoine "Azure" Hamelin was ostracized from the mainstream of Battle River society from 1868 until 1883. Magrath's houses are considerably isolated from the others located to date. Although no survey line actually ran through the site, a range line was run very near by, but the surveyor, Miles, made no comment (Miles 1884;

Lacombe 1883; Clark 1967:35-36). However, Miles' survey showed higher water levels than the published Township Map, drawn up ten years later, would indicate (Thompson 1894).

Oral tradition in the district derives from the Whitford and Bruneau families, and a few Treaty people from Hobbema who resided on the north shore of Buffalo Lake in 1901. As reported by the Hearonemus and Wells families, the site was abandoned because rainy seasons caused the water levels to rise too far and made the site inconvenient to enter or leave (Clark 1967; Anonymous 1963; Jamieson 1953). This is in accordance with Magrath's findings, which show some houses standing in several inches of water, and with water levels known from later surveys. However, Magrath passed through at a time when the site would normally have been relatively empty (one might think of John Kerr's or Jean D'Artigue's accounts). Perhaps, then, a small number of people resided there for an indefinite time, possibly as late as 1882. It is also possible that travellers may have used the empty houses for shelter. The lake itself, as well as the ponds in which the houses stood, was frozen over, and Magrath did not pause to do any investigations (Magrath 1930).

Apparently Tail Creek was never completely abandoned. The village near the North West Mounted Police post seems to have been occupied at least by Vital Couture or Coutu, who was delivering mail in the mid-1870's, and still doing it in 1901. Lacombe mentioned the presence of Catholic residents there in 1883, and a letter to him from Sam Baptiste Dumont in 1896 reveals that a number of families returned to Tail Creek in the later 1880's. Dumont reported that they were farming there successfully (Dumont 1896). Several of the 1870's residents lived at Tail Creek well into the twentieth century.

One site was assuredly occupied throughout. The Grande Pointe-Spotted Lake area, which was rich in waterfowl, supported a trading post operated by W. F. Bredin from 1883 to 1894 (Clark 1967). By the time Bredin left, the present Mirror settlement had just been established.

From oral traditions, and existing families records, a certain part of the Buffalo Lake society returned very near to the site, although the site itself was not used for any major purpose for some decades. Several Hobbema band individuals were still living along the north and east shores of Buffalo Lake into the present century, and their houses were sold or given in whole or in part to friendly settlers (Clark 1967 and other local histories). Some of these are documented, and some of the actual fabric is still in use.

It has been mentioned repeatedly that the eventual extinction of the buffalo was an accepted fact of life in the North-West. Yet, the end, whether regarded from a northern perspective or a southern one, was remarkably abrupt. The failure of the buffalo in Spring, 1879, astonished virtually everyone. Extinction was expected, but neither so early nor so completely. The memorable statement ascribed to the Indians, that it seemed a big hole had opened up and taken all the buffalo into it at one swallow, was a universal sentiment.

In official reports, printed in the Sessional Papers, the Police, the Indian Department, and the Interior Department placed great stress on a series of fires, stated to be accidental, which sprang up simultaneously along the International Boundary. The buffalo's migration

northwards into the more wooded and watered areas of the Cypress Hills was therefore impossible, and so there were no buffalo to be had in Canadian territory. There was a strong current of opinion in the North-West Territories that the fires were deliberately set by the American authorities to prevent further cross-border Indian travel. Sitting Bull and his Sioux could not stay just outside American reach without causing some resentment that retribution for Custer's disaster was consequently impossible.

However, this set of circumstances is insufficient. There is not one sudden extinction to be accounted for, but two. The evidence for prairie fires does not explain the northern herd's equally abrupt demise.

Both at the time and later, many accusations were made involving nearly every possible group or organization in the North-West. It might be thought that there are some good reasons for blaming the fur trade, whether one considers the trade in robes, or in provisions. In the latter case, the old Hudson's Bay Company policy of local self-sufficiency does not appear to have been viable by the time Buffalo Lake was important. Until the 1879 Outfit year, however, meat provisions had to be buffalo, the pemmican bags had to be of buffalo skins, and even in 1879, the requistions on the Upper Saskatchewan were not reduced.

However, the number of animals involved in the Hudson's Bay Company trade in the Upper Saskatchewan can be determined with a fair degree of accuracy, if the Saskatchewan District Returns and the Edmonton Post Journals entries are compared (Table 5, following).

TABLE 5

HUDSONS'S BAY COMPANY TRADE IN THE UPPER SASKATCHEWAN DISTRICT

Date	Outfit Year	Apparent Number of Buffalo in Trade
January - May 31, 1871	1870	55
June 1, 1871 - May 31, 1872	1871	1,378
June 1, 1872 - May 31, 1873	1872	2,277
June 1, 1873 - May 31, 1874	1873	1,330
June 1, 1874 - May 31, 1875	1874	5,725
June 1, 1875 - May 31, 1876	1875	3,960
June 1, 1876 - May 31, 1877	1876	870
June 1, 1877 - May 31, 1878	1877	640

Date	Outfit Year	Apparent Number of Buffalo in Trade
June 1, 1878 - May 31, 1879	1878	1,145 (est)
Grand Total, January, 1871 - May 31, 1879		17,380

It should be noted that the need to eat replaced any need to trade until the 1877 crops were actually harvested, and that the numbers hunted from 1876 to 1878 were much larger than the fur trade statistics would indicate. In the 1878 outfit year, one might expect the same to be true of the southern herd, due to the flight of Big Bear and several hundred Sioux.

Therefore, although a theory of wastage is certainly not out of the question, it is a long-run explanation. It would explain a steady decline in the remaining buffalo, terminating about 1882 or 1883 rather than 1879.

There are two short-run considerations, which may be more helpful in explaining why the effective extinction of the buffalo herds took place earlier than expected, and with astonishing abruptness. One is this writer's own suggestion, and the other was advanced by Lestanc (1910). The first, I suggest, is simply a contributing factor. The second still appears to be the best available explanation.

In the course of this discussion, much was made of the demographic effects of the 1870-1871 smallpox, and family sizes were discussed. Although the recovery of the people was indeed remarkable, and no appreciable demographic crisis can be discovered (so far as life and death went) until the later 1880's, it took some time for the average family size to be restored.

May it be reasonable to suggest that the reattainment of pre-1870 family sizes placed too much of a burden on the buffalo herds? Is it not possible that the demonstrable beginnings of "white" immigration which followed the signing of Treaties Six and Seven aggravated the problem?

Finally, one must consider the theory proposed by Lestanc. The best authority on the buffalo as a species, Frank Gilbert Roe (1951), rejected it as an overall explanation. However, it does appear to explain the local circumstances. Lestanc's view, in brief, was that there had been some manner of epidemic among the buffalo, which was noticeable by late 1878.

Lestanc (1910) observed that an ox had a serious nose inflammation, and refused to eat or drink for several days. However, it recovered. It would not be wise to make too much of this event, except that the sole reason for Lestanc's including it in his account is that he may have believed it was an early manifestation of the disease. It would have been one of the rare chances when he could examine a living animal. At any rate, it is possible that a mild disease among domestic cattle might

have lasted for some time, and then spread into the buffalo population with much more devastating effects. Both Victoria Callihoo and Peter Hodgson suggested that a form of blackleg was involved (Jamieson 1953). The only conclusion available on present evidence is that this is a plausible explanation, but only one possibility (Northern Department Council 1868-1880).

On August 16, 1878, when at Sounding Lake, Lestanc (1910) noted that at Battleford in May, one of the non-Christian chiefs had asked him to bring medicines along on the hunt, adding (translated):

> There is the sickness among the buffalo and some of our people died from having eaten some diseased buffalo meat; we are afraid to go to the prairies, seeing that we have no medicine.

In 1879 and 1880, many of the remaining hunters crossed the border, but were expelled with some success by the American Government in 1881. The total relief which had to be supplied to the returning people through the North West Mounted Police posts was, for the age, extremely high; the Police accounts showed just under $7,000,000 spent on emergency food and shelter.

The Police accounts and reports are specific enough as to the origins and destinations of the people. Those who were Métis largely came from Wood Mountain, Qu'Appelle, or St. Laurent. However, those who returned to Alberta almost entirely comprised the Blackfoot Confederacy. Therefore, it is not among the people of Buffalo Lake that one must look for an accounting of animals killed by the hundreds of thousands.

This concludes the specific narrative of the Buffalo Lake Métis site's history. There are some significant points which the historical account suggests that lead to different suppositions about the site's nature and character than those which appear in the archaeological discoveries to date. These are outlined in the concluding chapter. However, the very limited proportion of the site that has been excavated may be the sole reason for the discrepancies.

Most fundamental to the differing interpretations, while an American influence certainly existed, the Buffalo Lake site was set firmly in the context of Upper Saskatchewan settlements. Parallels with the Lower Saskatchewan, Cypress Hills, or Montana sites, then, require caution. At the same time, climatic conditions, and the ongoing life at Buffalo Lake that was not <u>hivernant</u> in nature, suggests that the general standard of construction would be higher. However, from the historical evidence examined to date, no reason exists to suppose that artifacts not related to this construction would be very different.

CHAPTER IV

THE BUFFALO LAKE METIS SITE,

ARCHAEOLOGICAL DATA, CABIN 3

During the 1974 mapping of the Buffalo Lake site (Figure 4), a probable cabin and associated features were selected for further investigation. Designated Cabin 3, this cluster of features was located in the northeast corner of LSD 14, Section 11, Township 41, Range 20 west of the Fourth Meridian. A mound and two depressions were closely associated with each other and separated from the nearest observable similar group of features by approximately 75 feet (22.9 m). This separation, combined with the area apparently occupied, suggested that a single structure was involved (Figures 4, 9 a, 9 b).

One depression (designated Feature 2) was large in comparison with the majority of depressions on the site. In addition, the mound (designated Feature 1) was one of the larger mounds encountered. A round pot-hole had been dug by unknown persons in the central portion of this mound, revealing cobbles, burnt mud-plaster, and ash and indicating the feature to be the remains of a fireplace.

Surficially, the area designated Cabin 3 (Figure 10) appeared similar to the foundations of Cabins 1 and 2, the second of these located approximately 247 feet (75.3 m) north and 345 feet (105.2 m) east. The primary intent in excavating Cabin 3 was to indentify the associated features as remains of a single building, to determine its dimensions and details of construction, and to establish the essential contemporaneity of this building with Cabins 1 and 2.

Furthermore, substantial data on Métis fireplace construction techniques had been lacking, perhaps partly owing to recent disturbance, in both Cabins 1 and 2. Despite the pot-hole, the mound in Cabin 3 appeared relatively well preserved.

The two depressions in Cabin 3 were thought to be storage (and perhaps subsequently refuse) pits, and were scheduled for excavation. Again, pits had apparently been lacking in Cabin 1, although an exterior depression had been observed nearby. It was hoped to derive additional data on what had been a prominent feature at other Métis settlements, notably in the Cypress Hills Kajewski site (Elliott 1971:27, 29, 31-32; Bonnichsen 1967:4-5; Bonnichsen, Horan, Doll, and Baldwin 1973:17). In addition, the artifact yield from a refuse pit in Cabin 2 had been relatively large. It was hoped that the Cabin 3 depressions would be comparably rich in artifacts, and would enlarge the sample from the site quantitatively and qualitatively.

Lithic artifacts, including a side-notched chipped stone projectile point, had been found in association with "historic" materials in the refuse pit of Cabin 2. The presence of such artifacts in the pits of Cabin 3 would decrease the probability of their being accidental intrusions and provide evidence for the persistence of an 8000 year-old

lithic tool tradition at Buffalo Lake. This would give further weight to the evidence presented elsewhere (Elliott 1971:50-51; Bonnichsen 1967:406; Bonnichsen, Horon, Doll, and Baldwin 1973:88) of a persisting co-existence of lithic and "post-contact" industries among the Métis of the Upper Saskatchewan.

A final reason for the selection of Cabin 3 for excavation was the indication of some recent disturbance in the fireplace mound. As in the case of Cabins 1 and 2, it was felt that efforts should be concentrated on the more vulnerable features of the site, rather than on those in less immediate danger.

EXCAVATIONS AT CABIN 3

Excavations in 1975 were initiated under Research Permit, Project 75-26, issued by Alberta Culture (now Alberta Culture and Multiculturalism) through the Archaeological Survey of Alberta. In addition, a letter of authorization was obtained from the Deputy Minister of Renewable Resources, Alberta Energy and Natural Resources, administrators of the Pubic Land Act. Also, letters had been previously procured from holders of the grazing permit, A. J. and H. P. Rider, and from the County of Stettler No. 6, holders of a recreation lease.

A total of thirty days were spent in the clearing, excavation, mapping, and backfilling of Cabin 3. Work began on July 2, and was terminated on September 12. Four persons were occupied in excavation for twelve days, and three persons for an additional eighteen days. Altogether, one hundred and two man-days were expended on the Métis site in 1975 (including some travel time, and work stoppages owing to inclement weather).

A grid consisting of five-foot (1.52 metre) square units was established, oriented to an arbitrary north equal to 3 degrees east of true north, and it was staked out on the site (Figure 10). Stakes were designated according to distance and direction from an arbitrary point 0, and squares were named according to the stake designation in their northwest corner. This grid extended 45 feet (13.72 metres) north-south and 15 feet, (4.57 metres) east-west. Orientation to the site as a whole was through the map prepared in 1974, and approximately to the northeast corner of LSD 14, Section 11, Township 41, Range 20 West of the 4th Meridian, which was located ca. 387 feet (117.96 metres) north and 15 feet (4.57 metres) east of grid point 0. Key stakes (Figure 10) were left in place, and the intent was to survey the grid accurately in relation to Cabins 1 and 2 (where iron pipes had been set in concrete to mark the grid), and to the quarter-section corner.

Although it may be somewhat confusing, it should be noted that all references to the Cabin 3 grid are to arbitrary north (to all practical purposes, true north), those references to features within the cabin are to magnetic north (the apparent orientation of the builders), and those references to the site as whole to true north.

Excavation was generally with trowel and dustpan, and most of the fill was put through a one-quarter inch mesh screen, with finer mesh used in some cases to secure beads, small faunal remains, and seeds. Fill was

removed by strata of deposition, for example in the fireplace and the depressions, although in many other areas the shallowness of deposit made discrimination of strata or arbitrary levels unnecessary. Artifacts were recorded by unit, stratum, and feature, with some specimens measured in three-dimensionally. Plans and photographs were made of all features. Level bags were brought to the Museum laboratory following excavations for preparation and cataloguing of specimens. The latter, along with field notes and other records, are stored at the Provincial Museum of Alberta. Following the completion of excavation, the areas were lined with polyethylene plastic sheets and backfilled.

During 1976, excavations continued in the Depression, Feature 2, of Cabin 3 under Research Permit, Project 76-15. This excavation proceeded in 0.5 foot (0.15 metres) thick arbitrary levels, following the original outline of the depression horizontally. All artifactual and faunal material recovered in situ or in the screen was bagged according to level. Earth that was particularly rich in small artifacts and bone was bagged by level in the field and returned to the Museum laboratory for finer processing.

THE FEATURES OF CABIN 3

The Wall Lines

Cabin 3 appeared to be a log structure, approximately 24 feet (7.32 metres) long magnetic north-south and 15 feet (4.57 metres) wide magnetic east-west (Figure 10; all subsequent directions are ca. magnetic unless otherwise indicated). As far as could be determined, the cabin had no permanent interior partition and no wooden floor. Preservation of wood (probably poplar or aspen) was extremely poor, as in Cabins 1 and 2, and no complete logs or other intact structural members were found. Some fragmentary evidence was discovered, however.

By far the best preserved wood fragments were in the west wall of the cabin. Probably this relatively good preservation was owing to the existence of clay overlying the sill log. This ridge of clay may have been derived through washing off or collapse of the chinking between wall logs, or on the roof of the cabin, or it may have resulted from banking the base of the wall as insulation against the cold.

The south wall and southeast corner of the structure were represented by a few tiny rotted chips and a definite log outline of brown rotted wood dust. Much the same situation prevailed in the northwest corner and along the north wall, although the wood in this latter case was slightly better preserved. The east wall of the cabin was represented only by a scattering of charcoal, which may have resulted from the remains of superstructure being burned.

In spite of the existence of this charcoal, the major portion of the cabin did not appear to have been destroyed by fire, but rather by natural processes of decomposition in the damp woods. Fires were reported in the Buffalo Lake area around the turn of the century, for example in the spring of 1903 (Emma Trayer in Clark 1967:322), but it is uncertain what part they might have played in the disappearance of cabin

superstructures, all of which were apparently gone by 1902 (Clark 1967:35-36). The only evidence to suggest that at least part of Cabin 3 may have been burnt, then, was the remnant of west wall, and some charred fragments of boards or logs overlying Features 2 and 3. Charcoal pieces were also thinly scattered throughout the grey sandy fill within the cabin outline, but there was no evidence for fired mud plaster. Most of the mud chinking may have fallen or washed off the building prior to any burning of the structure itself.

Feature 1, The Fireplace.

Excavation of the mound in Cabin 3 revealed the remains of a stone fireplace approximately 7.0 feet (2.13 metres) wide north-south by 4.0 feet (1.22 metres) deep east-west (Figures 10, 11-14). This fireplace was located at approximately the middle of the cabin, and abutting on the interior of the west wall. The materials used consisted of granitic and quartzite cobbles, cemented in position by clay apparently obtained from local till deposits. Possibly one or both of the internal depressions, Features 2 and 3, were used as borrow pits for the clay employed in this construction.

A pot-hole approximately 2.0 feet (.61 metres) by 2.5 feet (.76 metres) had been dug in the middle of the fireplace by unknown individuals. However, the major part of the feature remained intact, and the firebox, bits of burned bone, charcoal, and a concentration of wood ash were encountered. As this ash concentration was exposed, an associated clay apron was discovered, extending about 2.5 feet (.76 metres) in front of the firebox (Figure 12 a). After it was photographed and mapped the ash was carefully removed and bagged for laboratory analysis. At this point, a shallow basin of reddened clay was revealed within the firebox (Figures 12 b, 13 a, b), and again this level was photographed and mapped. These steps were repeated three times, exposing three distinct and vertically separated firebox floors (Figure 14 a, b), and, contiguous with the upper two, superimposed aprons. The evidence shows that the feature was renewed at least three times and suggests that Cabin 3 was abandoned at least three times, twice on a temporary basis and the third time permanently.

Temporary abandonment of the cabin might have corresponded to the time of the Métis spring hunt (see Chapter II), planting, or merely to a time of warmer weather when the inhabitants moved out of doors or utilized outdoor fires for cooking. The layers of burnt clay separating the firebox floors perhaps resulted, then, from weathering of mud plaster off the fireplace or chimney during the spring or summer rains. They might also have been the result of purposeful re-plastering and re-lining of the fireplace in the autumn, along with a re-chinking of the walls, to weatherproof the cabin for the winter.

The first firebox, floor 3, was set directly on the humus (Figure 14 b), with no apparently associated clay apron. Both subsequent levels, however, were associated with clay aprons. The evidence suggests that Cabin 3 may have been occupied for three winters and then abandoned. Possibly it was built in the fall of 1875 and abandoned in the spring of 1878, as this time would correspond both with the years of most intense

occupation and with the year of final abandonment (see Figure 15).

Feature 1 yielded 47 artifacts or 1.27% of the total recovery from Cabin 3, notably pottery, glass, and a few nails.

Feature 2, Large Refuse Pit.

Feature 2 was the larger of two depressions in this locality (Figures 10, 16). Situated to the southeast of the fireplace, it was approximately 6.3 feet (1.92 m) north-south by 8.3 feet (2.53 m) east-west by 4.5 feet (1.37 m) deep.

Located entirely within the wall lines of the cabin, Feature 2 may initially have served as a borrow pit for clay used in the construction of the fireplace (Feature 1). Subsequently, it might have been used as an interior storage pit or cellar, although no evidence was found of cribbing or other lining. Ultimately, it seems to have been used for the disposal of trash. Although there was no evidence of a wood floor in the cabin proper, there was an indication of burned boards immediately overlying this depression. Subsequently, these remains had been covered by slumped soil and leaf litter. Boards may in fact have been used to cover the depression when the cabin was occupied. Alternativly, the fragments observed could merely have fallen from roof or walls after the cabin was abandoned.

The excavations established the dimensions and depth of Feature 2 and also confirmed the hypothesis that some pits might be notably rich in artifacts. A total of 12,047 specimens was recovered from the fill of this depression. This constitutes 90.04% of the assemblage from Cabin 3. Although a large variety of artifact types was represented, nails, pottery, and glass, and especially small glass beads, were predominant. Finally, the hypothesis regarding the association of lithic and "modern" industries was given further credibility through the discovery in the feature of two side-notched projectile points and a quantity of other chipped stone material.

Feature 3, Small Refuse Pit.

Feature 3 constituted the smaller pit within the wall lines of Cabin 3 (Figures 10, 17 a, b). Its dimensions were 4.0 feet (1.22 m) north-south by 5.0 feet (1.52 m) east-west by 2 to 2.5 feet (60.96 to 76.20 cm) deep. With the exception of a small portion near stake 30N, 10E, Feature 3 was completely excavated in two horizontal operations. First the section located within square 35N, 5E was excavated and scale plans and profiles prepared. Then the remainder of the fill (with the exception noted above) was removed.

Again no evidence of cribbing or lining was observed. As in Feature 2, however, a small amount of burnt wood was found to be overlying the depression. Subsequently, this wood had itself been covered with slumped material consisting of a thick layer of yellow clay, in all likelihood washed in from the walls and roof after the abandonment of the cabin.

Like Feature 2, Feature 3 may have initially been used as a borrow pit for clay, subsequently as a storage pit, and finally as a repository for refuse. A total of 299 artifacts was recovered from the feature,

comprising 8.09% of the total assemblage. Particularly noteworthy among these were lead shot, pottery, and beads. An 1857 U.S. half-dime contributed a datum to the chronological interpretation of the site, indicating that it could not have been entirely abandoned prior to 1857.

THE ARTIFACTS OF CABIN 3

Method of Analysis

Analysis of the Buffalo Lake collections as a whole began with the allocation of recovered artifacts to general functional classes related, for example, to "Hunting" or "Blacksmithing, Construction, and Crafts." Although it was realized that function is sometimes in doubt, and that categories would overlap, it was felt that this approach maintained some consistency in the order of description and facilitated comparisons. The classes have been ordered to begin with those traits most nearly related to basic subsistence and proceed to the least basic traits, relating to recreation and ornamentation. This sort of organization may also facilitate highly qualified hypotheses about the relative importance of various occupations or activities at the site (South 1977a; 1977b).

Descriptions are fairly full, but vary somewhat by author and according to the familiarity of objects represented and the presumed significance of metric and other data. Photographs are intended to be used in conjunction with the descriptions. Measurements are in the metric system, although it is realized that many of the artifacts were presumably manufactured according to measurements in the English system. The scale in the photographs, however, is in both systems. All measurements are maximum unless otherwise indicated. Some individual artifact measurements are available in the tables, and all unpublished data is on file at the Provincial Museum of Alberta.

A total of 12,415 artifacts was recovered from Cabin 3 of the Buffalo Lake Métis Site. Feature 1 yielded 47 artifacts, 0.38% of the sample. Feature 2 yielded 12,047 artifacts, 97.04% of the sample. Feature 3 yielded 299 artifacts, 2.41% of the sample, and 22 additional artifacts, 0.18% of the sample, were recovered from the general interior of the cabin and not directly associated with any of the three features.

HUNTING

This category is well represented in the sample from Cabin 3.

Gun Parts

Brass Ramrod Ferrule (Figure 18 a). A brass ferrule from the proximal end of a shotgun ramrod was recovered from Feature 2. the ferrule is made from thin brass and is cracked in several places. The interior contains a portion of the wooden ramrod, 29.23 mm long and 10.39 mm in diameter. The ferrule itself is 23.30 mm in length, 10.39 mm in diameter, and .92 mm in thickness. The ramrod would originally have

measured 12 mm or more in diameter, but the preserved portion has shrunk considerably.

Ignition Parts and Ammunition

Gunflint (Figure 18 b). A single dark brown gunflint with flat flake scars was recovered from Feature 2. Although burned and broken, it measures 29.50 mm by 26.16 mm by 8.58 mm.

A flake of light brown taffy-colored flint was also found in the northwest interior portion of the cabin, associated with the dirt floor between Features 1 and 3. The flake measures 9.1 mm by 8.3 mm by 1.9 mm.

Woodward (1982:14) suggests that in general ". . . French flints were of honey or taffy colored types, with rounded heels, thinner and flatter than those of English Manufacture." Based solely upon color characteristics, the first Buffalo Lake example may be of English origin, while the second may be of French origin. Because neither example is whole, other characteristics for identification were not used.

At the time the Métis site was occupied, gunflints were still a very important item in the fur trader's inventory (Hardisty Papers, Items 423 (1874), 608 and 612 (1875), 928 (1876). At Buffalo Lake, they were no doubt used for lighting fires as well as in guns, as the English Brandon flints were also made for strike-a-lights (Woodward 1982:144). Alternately, however, matches were available from the Hudson's Bay Company in 1874 (Hardisty Papers, Item 709).

Percussion Caps (Figure 18 c). Four copper percussion caps were recovered from Feature 2. All examples have been fired; three are complete and one is fragmentary. All are of the same type, averaging 5.70 mm in length and 5.54 mm in diameter.

The Buffalo Lake examples correspond in size to number 11 Eley Brothers percussion caps in the reference collection of the Provincial Museum of Alberta. There are several records of percussion caps and percussion cap guns, both single and double barrel, as a major item of trade at Buffalo Lake and in the general Upper Saskatchewan District (Hardisty Papers, Items 605 and 608 (1875). In addition, there were numerous makes of rifles and revolvers, as well as single and double barrel guns, of both British and American manufacture that used this type of cap.

The percussion cap had long been in use by the time the Buffalo Lake site was occupied. Its history began on July 4, 1807, when Reverend Alexander Forsyth patented a detonating compound based on the use of potassium chlorite as a replacement for the flintlock ignition system (Burrard 1950:2, 61). The copper percussion cap appears on the patent records in 1823, although it had been invented by various persons to whom the same idea occurred between 1814 and 1816 (Pollard 1926:114). It was in general use by 1825. At Buffalo Lake, it did not entirely replace the flintlock ignition system, which appears to have been used more by the Indian buffalo hunters than by the Métis. This may reflect the fact that the latter group had easier access to sources of supply than the former.

Round Ball (Figure 18 d). Four lead balls were recovered, three from Feature 2 and one from the general cabin interior. Two are .58 calibre, one .53 calibre, while the fourth has been flattened and the calibre cannot be determined.

In his correspondence of December 1, 1874, to Richard Hardisty, Chief Factor at Fort Edmonton, Francis Whitford, the Hudson's Bay Company clerk at Buffalo Lake and Tail Creek, requested that a bag of lead balls be sent to him to supply the trade (Hardisty Papers, Item 422).

Lead Shot (Figure 18 e). A total of 56 lead shot were recovered. Sizes range from BB to No. 4, with 75% falling between shot size No. 1 and No. 2 (Greener 1910:612-614; Logan 1959:171).

Shot size is calculated by the number required to weigh an ounce. For example, No. 6 shot, at 270 pellets per ounce, would be made up of shot with sizes that lie between 255 and 285 to the ounce, the figure 270 being the mean (Burrard 1950 II:114).

Shot was sold in bags by the ounce. For example, in the outfit of 1874, the Hudson's Bay Company Post at Jasper's House lists shot at four cents per ounce (Hardisty Papers, Item 709). Francis Whitford requested, on December 16, 1874, and again on September 12, 1875, that a bag of shot be sent from Fort Edmonton for trade at Buffalo Lake and Tail Creek (Hardisty Papers, Items 423, 610).

Rimfire Cartridge Cases (Figure 18 f). From Feature 2, two copper rimfire cartridge cases were recovered. Both have a raised "H" headstrap, indicative of an early manufacture of the Henry Cartridge Company. Although both cases exhibit the typical double firing-pin marks, these marks are sufficently different from each other to indicate the cartridges were fired from two different firearms. In addition, one has a more bulged head, which suggests the firearm that discharged it had greater headspace.

The cartridge cases are 23.70 mm long and 13.07 mm wide overall, with width below the headstrap of 11.48 mm. These measurements indicate that they are .44 caliber Henry flat cartridges. This early form of fixed ammunition uses a flat-top cylindrical lead bullet, 200 grains in weight and propelled by 26 grains of black powder (Logan 1959:61; West 1969:1-5).

This type of ammunition was used in two makes of firearm: the Henry Rifle, made by the New Haven Arms Company from 1860 to 1866 (Figure 19 a), and the Winchester model 1866, made by the Winchester Repeating Arms Company between 1866 and 1898. While approximately 10,000 of the former were manufactured, nearly 100,000 of the latter were made (West 1969:1-5 to 1-9; Logan 1959:68).

Centrefire Cartridge Case (Figure 18 g). One externally primed brass centrefire cartridge case was excavated from Feature 3. Although partially cut off in length, and exhibiting a crushed mouth, it is still identifiable as a .44-40 calibre Winchester centrefire cartridge. The original case was coupled with a 200 grain flat-nosed conical lead bullet, propelled by 40 grains of black powder. This cartridge could be used interchangeably between the model 1873 Winchester rifle and the Colt

Single Action revolver, also known as the Frontier Six Shooter (Logan 1939:137).

Centrefire Shot Shells (Figure 18 h). Two brass shot shell heads were recovered from Feature 2. They bear the headstamp of Eley Brothers of London and are of 16 gauge (18.97 mm in diameter). They originally would have had paper or cardboard tubes attached to the brass bases. The tubes, however, decomposed prior to recovery.

Although machine-made shot shells with paper rather than metal tubes were manufactured as early as 1873, they did not make their appearance in America until the 1880's (Sharpe 1938:276). Similarly marked shot shell bases were recovered from Fort Walsh, the occupation of which (1875-1883) overlaps that at Buffalo Lake (Sciscenti et al. 1976:xvi).

Peter Erasmus (1976) mentioned the use of a double-barrel breech-loading shotgun obtained from the Hudson's Bay Company, but he made no mention of the type or brand of ammunition used. Similarly, no records of paper shot shells in the inventory are found in the correspondence of Hudson's Bay Company employees at Buffalo Lake, Tail Creek, Spitsea Post, or Fort Edmonton.

This evidence leads to three possible alternative conclusions:

(1) Paper shot shells became available in the Upper Saskatchewan sooner than the time suggested for America by Sharpe (1938).

(2) The shell bases from Cabin 3 are intrusive. Communication with the present-day residents confirmed that the area has been heavily used by bird hunters since the turn of the century. In particular, the depressions left by the Métis may subsequently have served as goose pits for hunting waterfowl.

(3) Cabin 3 was re-occupied in the 1880's, subsequent to the documented abandonment in the spring of 1878.

Cutting or Piercing Weapons or Tools

Iron Projectile Point (Figure 19 b). A badly oxidized iron projectile point was recovered from Feature 2. It is of a style typical of those that were manufactured from scrap metal for trade at the various fur trade posts on the Upper Saskatchewan as early as the 1790's. Generally, they were made by the post blacksmith from iron, copper, or brass. (For examples see Nicks 1969; Kidd 1970; Steer et al. 1979; Losey 1978, Losey et al. 1978; Forsman 1985).

Knife Blade Tip (Figure 19 c). A thin skinning knife blade tip, measuring 52.07 mm long by 37.02 mm wide and tapering from 2.10 mm to 1.38 mm in thickness, was recovered from Feature 2.

Common skinning knives were a standard item of trade stocked by the Hudson's Bay Company outpost at Buffalo Lake and the storage and staging post at Tail Creek for the trade farther south at Bow River and Spitsea Post (Hardisty Papers, Items 604, 609).

Modified Knife-Blade Fragment (Figure 19 d). The modified section of a skinning knife blade was recovered from Feature 2. It has been snapped off at one end and cut with a cold chisel at the other. The blunt back of the blade remains unmodified; however, the sharpened edge has been modified into a single bevel approximately 2.0 mm deep, forming a plane-like implement. The resulting blade could have been hafted to a handle and used as a scraping tool for hide preparation or wood working. The resulting blade is 30.79 mm by 30.06 mm, and tapers in thickness from 2.14 mm to 0.45 mm.

Discussion

Hunting and the products of the hunt were the main reason for the occupation of Cabin 3. The artifacts recovered are generally those used in the procurement and subsequent processing of bison. In addition, the presence of lead shot and, if temporally associated, the shot shell bases, are indicative of the hunting of waterfowl as a dietary supplement not directly associated with the commercial hunting venture. It should also be noted that muzzle-loading guns (i.e. smooth-bored barrels) could be loaded with round ball and also used in bringing down bison. In addition, the shotgun had a long-standing reputation as a close-range personal defense weapon, the advantage of which was probably appreciated by the people of Buffalo Lake.

There is evidence for several different types, calibres, and makes of firearms in the artifact sample from Cabin 3. Four different types of ignition systems were used: flintlock, percussion lock in muzzle loaders, and rimfire and centrefire fixed ammunition in magazine repeating rifles, revolvers (perhaps), and breech-loading shotguns. With respect to the .44 Henry Flat cartridge case, it has been stated that these could have been fired from either the Henry Rifle or the model 1866 Winchester. Although both of these firearms produced the same firing-pin marks, and theoretically both would have been available at the time the Buffalo Lake Métis Site was occupied, historical documents suggest that the Henry repeating rifle (Figure 19 a) was more than likely in use in this area.

On the 15th of December, 1875, William Leslie Wood, trading partner at the Hudson's Bay Company Spitsea Post, wrote to Richard Hardisty at Fort Edmonton requesting, among other things, 48 Henry Rifles in cases of a dozen each to sell at 12 to 14 robes. With robes bringing between $5.00 and $7.50 apiece, the Henry Rifles would be selling for between $60.00 and $105.00, a considerable sum of money at that time, and at today's standards between $1,800.00 and $3,150.00. Wood also ordered 4,000 rounds of ammunition to sell at one robe per 100, or between five and seven and one half cents per round (Hardisty Papers, Item 605).

John Bunn, trading partner at Bow River Post, also lists "Henri" (sic.) rifles as part of his inventory (Hardisty Papers, Item 604).

Percussion guns were still more common in general use at this time, as may be ascertained from an order in the same correspondence for 15,000 guncaps to sell at one robe for 250, or between two cents and three cents apiece (Hardisty Papers, Item 605).

At Buffalo Lake, on November 2, 1874, Francis Whitford requested two types of cartridges for the trade: "Large kind and some small," referring to Spencer .50 calibre rimfire cartridges as well as the small Henry .44 calibre rimfire cartridges (Hardisty Papers, Item 421).

In another letter, dated October 29, 1875, he requested "cartridges Spencer and Henry" (Hardisty Papers, Item 611).

From Tail Creek, in a letter dated November 6, 1875, Whitford also requested "a fourteen shooter" for one of his men (Hardisty Papers, Item 613).

Records of the North West Mounted Police also tend to support the dominance at this time of the Henry over the Winchester. On Tuesday, September 29, 1874, Commissioner French noted in his diary the meeting of a party of Assiniboines on Milk River, two of whom were armed with Henry Rifles. The police were armed with the much inferior single-shot Snyder Enfield carbines and Adams revolvers (Commissioners 1973:50; Phillips and Klancher 1982:5; Steele 1876).

In addition, in the seizure of property from whiskey traders at a post in Pine Coulee south of Fort MacLeod on October 30, 1874, James F. MacLeod reported among other things "5 Henry rifles" (Commissioners 1973:59-60).

Although much of this evidence is circumstantial, it should also be noted that no references were found relating to the use of Winchester rifles at this time, although the difference between the Henry and the Winchester was well known.

CONSTRUCTION, BLACKSMITHING, AND CRAFTS

Artifacts in this category were generally not as well represented in Cabin 3 as relative quantities in Cabins 1 and 2. Similarly, the distribution of the most numerous artifact type, nails, was practically restricted to Features 1 and 2, the fireplace and the larger of the two interior depressions. A more detailed typological discussion of nails occurs in the description of Cabin 1 in Chapter V.

Triangular File

A virtually complete but badly oxidized small triangular file (Figure 20 a) was recovered from Feature 2. The file is 153.20 mm in length, including the tang, while each face averages 9.99 mm in width.

Forged Iron Nails

Rose-Head Forged Nail Fragment (Figure 20 b). Rose-head nails are characterized by a crown high in the centre, formed generally by four blows of the heading hammer. An incomplete rose-head forged nail was recovered from Feature 2. It measures 46.89 mm by 5.52 mm by 4.61 mm.

Gable-Head Forged Nail Fragment (Figure 20 c). Gable-head nails are characterized by a crown high in the centre and two distinct facets, formed by two blows of the heading hammer. A single bent, gable-head

forged nail fragment was recovered from Feature 2. It measures 62.49 mm by 5.49 mm by 3.81 mm.

Machine Cut Iron Nails

Gable-Head Cut Nail Fragment (Figure 20 d). One gable-head cut nail fragment was found. It measures 25.82 mm in length, 3.18 mm in width, and was cut from a plate 2.87 mm in thickness. It was excavated from Feature 2.

Flat-Head Cut Nails (Figure 20 e-j). The majority of the recovered nails fall within this category. Following the format established for classifying nails from Cabins 1 and 2 (Chapter V), these nails were further subdivided into three groups:

Group 1 (Figure 20 e, f). Seven virtually complete and five fragmentary examples were placed in this category (Table 6, Appendix III). Two examples were associated with Feature 1, 11 with Feature 2, and one with Feature 3.

Group 2 (Figure 20 g, h). A total 19 complete and 20 fragmentary examples were placed in this category (Table 7, Appendix III). Feature 2 again yielded the largest number of group 2 nails, with 33 being recorded. Feature 1 had five nails, while a single nail was recovered from the cabin interior in the central portion adjacent to the east wall. No nails in this category were recovered from Feature 3.

Group 3 (Figure 20 i, j). All group 3 nails were recovered from Feature 2. Of the 16 nails found, four were complete and 12 fragmentary (Table 8, Appendix III).

Cut Nail Shank Fragments (Figure 20 k). A total of 17 iron cut nail shanks were recovered in excavation. Three were associated with Feature 1, 11 with Feature 2, and three with Feature 3 (Table 9, Appendix III).

Wire Nail

A single wire nail (Figure 20 l) was recovered from the second ash level of the fireplace in Cabin 3. It measures 57.04 mm in length and is 3.44 mm in diameter. It appears to have been attached to a piece of wood that was used for fuel.

Miscellaneous Hardware

Iron Wood Screws (Figure 20 m). Two slotted iron wood screws were recovered in the excavation of Feature 2. One is 16.18 mm in length and 4.36 mm in diameter; the other is 22.71 mm in length and 6.22 mm in diameter.

Copper Rivet (Figure 20 n). A single copper rivet was recovered from the bottom of Feature 2. The head is intact, but the rivet face has been sheared off by a cold chisel. The rivet is 20.97 mm in length, with

a shank diameter of 5.54 mm. The diameter of the head is 12.68 mm. Although their exact function at this site has not been determined, rivets of this size were commonly employed to secure canvas to wood. Photo documentary sources of the period commonly record canvas coverings on the ubiquitous two-wheeled Red River cart, with the canvas secured to the first supporting rib (by rivets?) and apparently secured by rope over the subsequent ribs.

Iron Pintle or Hook Fragment (Figure 20 o). An iron pintle or hook fragment was recovered in two pieces, the first section from Feature 1, the second from Feature 2. Subsequent to their recovery, it was found that both were part of the same object, which may have originally functioned as a pintle or as a portion of fireplace hardware. The object was oval in cross section, ranging from 8.85 mm to 7.83 mm in diameter.

Iron Sheet Staple (Figure 20 p). A single burned thin iron sheet staple was recovered from Feature 1. It is 30.55 mm in length, 4.61 mm in maximum width, and .43 mm in thickness. This staple may have been attached to a packing crate that was burned as fuel in the fireplace.

Discussion

The paucity of building hardware recovered from Cabin 3 is perhaps a reflection of the simplicity of its construction or evidence for the practice of stripping metal nails and hardware that could be re-used elsewhere. The majority of metal artifacts were nails, with most of these recovered from the large refuse pit, Feature 2. Excavation of this feature yielded the badly decomposed remains of boards, interpreted as a cover structure. Most of the nails were associated with the rotted wood.

Since Feature 2 was a large and deep depression, and no doubt somewhat odorous at the time of use, it would have been practical to cover it to prevent cabin occupants from accidentally falling in.

Almost no nails were found associated with the general interior of the cabin or along its wall. This suggests that the nails recovered were an integral part of the cellar cover and not part of a collapsed roof, wall, or general floor structure. Indeed, other than the proposed cover, there is no evidence for a wooden floor. If planks were used for general flooring, they were not preserved, and they were not apparently attached to joists by means of nails. It is also possible that flooring could have been removed to be used elsewhere, or used as firewood after the general abandonment of the site and partial re-occupation in the early 1880's.

The nails associated with the fireplace (Feature 1) were mostly recovered from the ash in the firebox. Thus one can conclude that the nails were attached to wood or other combustible material used as fuel.

The balance of the tools and hardware are not particularly diagnostic with respect to cabin architecture. The file is a tool which could have been used for a variety of general metal-working and perhaps wood and bone-working tasks. More than likely, its presence in the refuse pit was as the result of loss.

The presence of a rivet, perhaps more appropriately placed in the transportation category, may indicate an activity of winter evening repair to a cart cover.

HOUSEHOLD, BUSINESS, AND PERSONAL MAINTENANCE

Earthenware

Plain White Glazed Earthenware

Vessel 1, Possible Bowl (Figure 21 a). Vessel 1 is a plain white-glazed possible bowl, represented by three sherds, one of which is a rim sherd. The diameter of the vessel is approximately 153.39 mm, with sherd thickness varying between 4.55 mm and 5.52 mm.

Vessel 2, Cup or Small Bowl (Figure 21 b). This vessel is represented by a section of foot-ring approximately 50.71 mm in diameter.

Vessel 3, Dinner Plate (Figure 21 c). This dinner plate is represented by 15 sherds. On the bottom of the partially reconstructed vessel is part of the maker's stamp "FURNIV . . ." and "PG." The plate was probably manufactured by Thomas Furnival and Company, 1844-46, or Thomas Furnival and Sons, 1871-90, both companies located in Staffordshire, England (Sussman 1972:130).

The foot diameter of Vessel 3 is approximately 81.23 mm; the outside diameter cannot be calculated.

Vessel 4, Bowl (Figure 21 d). This vessel is represented by six sherds. The rim has a diameter of approximately 107.83 mm.

Vessel 5, Dinner Plate (Figure 21 e). This vessel is represented by 31 sherds, most of which have been re-fitted in reconstruction. The plate is plain, but the bottom has two stamped impressions under glaze. The first is a raised cross within an irregular rectangle; the second, much less distinct stamp appears to be a raised letter T or perhaps E in a more regular-shaped rectangle. This latter stamp, however, is not complete. The sherd bearing the rest of the impression was not recovered in excavation.

The diameter of the plate is approximately 223.80 mm.

Creamware

Vessel 6, Cup (Figure 21 f). This vessel is represented by two sherds, which, together, form part of the handle of a cup. This handle is undecorated and is 34.01 mm in length, 8.88 mm in width, and 5.87 mm in thickness. The paste is similar in color and texture to Vessel 2. The glaze is of a more yellow tint.

Monochrome Underglaze Transfer-Printed Ware

Vessel 7, Cup (Figure 22 a). This vessel is represented by seven burned sherds and one unburned sherd with a hardness of between four and five on Moh's scale. It has a combination of two design numbers: 63, which is stylized flowers with a background of small spirals, and 64, which consists of a conical flower pot with two flowers (Sussman 1972:416-417). Both designs are found on the interior as well as the exterior of the vessel. The designs form part of a pattern described as "Pagoda," manufactured by Copeland of Staffordshire, ca. 1838 to post 1872 (Sussman 1979a:155).

In addition, Design 30, consisting of a sprig of sweet pea, is found on the exterior and interior surfaces (Sussman 1972:58, Figure 31).

The cup has been modified by means of a hole drilled half way from the interior and halfway from the exterior, so that in section it is 1.80 mm in diameter on the outside of the vessel, contracting to 1.46 mm at the centre, and expanding to 1.80 mm again on the inside.

Quite often, the writer has observed antique transfer-printed ware perforated in this way in several places and joined by soft wire to effect a repair. In other cases, wire was threaded through the holes to suspend the vessel from a hook on the wall as a means of display. The diameter of Vessel 7 is approximately 101.60 mm, with a rim thickness of 3.00 mm. The color of the transfer print is 7.5PB 3/4 in the Munsell scale (Anonymous 1966; all further color references are to this source).

Vessel 8, Possible Cup or Bowl (Figure 22 b). This vessel is represented by two sherds. The decoration consists of an oak-leaf design on the interior of the rim and a leaf of unknown type on the exterior. The design is slightly smudged on the interior and extensively flowed on both sides. There is not enough of the vessel remaining to determine the diameter. The rim thickness is 2.96 mm, and sherd body thickness 3.40 mm.

The design on Vessel 8 is the same as the border for the pattern called "Ruins" and "Melrose," registered September 15, 1848, and manufactured by W. T. Copeland from 1840 until the twentieth century (Sussman 1979a:168). Hardness of the paste is between 4 and 5, and the color of the transfer-printed design is 7.5PB 2/8.

Vessel 9, Shallow Bowl or Saucer (Figure 22 c). This vessel is represented by 16 sherds with the same pattern and decoration as Vessel 7. The design, however, is found on the interior only, as would be typical of a saucer. The diameter of the vessel is 152.48 mm, the height is 36.00 mm, and sherd thickness varies from 3.00 mm to 5.24 mm. The color is 7.5PB 2/8 and is extensively flowed.

Vessel 10, Possible Cup or Bowl (Figure 22 d). This vessel is represented by two small curved body sherds, possibly from a cup or small bowl. The design appears to be small flowers and leaves that occur on the exterior of the vessel only. The name of the pattern and the manufacturer have not been determined. The color of the print is 5R 2/6.

Vessel 11, Bowl (Figure 22 e). This vessel has been partially reconstructed from 20 sherds. The bowl has a diameter of 127.08 mm, with sherd thickness varying from 4.00 mm to 6.00 mm.

The decoration on the bowl consists of three design elements according to Sussman's description (1972). The first, design 29, is a geometric zig-zag border on both the interior and exterior, approximately 14 mm wide. The second, design 30, is a 22 mm by 30 mm sprig of sweet pea, spaced approximately 45 mm from the main border on both interior and exterior of the bowl. The third, design 154, is a scroll incorporated as part of the zig-zag geometric border. Sussman (1972) refers to this pattern by the number B 772 rather than by name. This numbered pattern was manufactured by Copeland ca. 1839 to post 1882 (Sussman 1979a:65-66). The color of the print is 7.5PB 2/6.

Vessel 12, Shallow Bowl or Saucer (Figure 22 f). This vessel is represented by 21 sherds. The decoration is found on the interior only, and consists of the same three elements as those found on Vessel 11: a geometric zig-zag border, a sprig of sweet pea, and a scroll. Together they form pattern number B 772 (Sussman 1979a:65-66).

The vessel is 152.48 mm in diameter and 34.50 mm high. The color of the print is 7.5PB 2/10.

Vessel 13, Cup or Small Bowl (Figure 22 g). This vessel is represented by five sherds exhibiting the same design elements and pattern as Vessels 11 and 12. However, the design elements are found on both interior and exterior of Vessel 13. The projected diameter of the vessel is approximately 127.08 mm, with a thickness varying between 2.40 mm and 3.40 mm. The height cannot be determined. The color of the print is 7.5PB 3/10.

Vessel 14, Small Bowl (Figure 23 a). A total of seven sherds recovered in the excavation of Cabin 3 belong to this vessel. Four separate designs are incorporated in this vessel to form the pattern called "Ivy," registered in 1845 and manufactured to post-1865 by W. T. Copeland (Sussman 1979a:135-136). The elements consist of design 45 (Sussman 1972:411), ivy leaves found around the exterior of the bowl; design 46 (Sussman 1972:411), a beaded border on both interior and exterior rim; design 48 (Sussman 1972:411), vine and leaf with ragged edges found on the bottom interior; and design 49 (Sussman 1972:413), acorn and oak leaf band on the interior below design 46.

The diameter of the bowl at the rim is 101.60 mm, while the diameter of the foot-ring is approximately 50 mm. The bowl stands 77.70 mm high, and its thickness ranges from 3.50 mm at the rim to 7.00 mm at the base. The color of the pattern is 7.5PB 4/6.

Vessel 15, Saucer or Shallow Bowl (Figure 23 b). Vessel 15 is of the same pattern as Vessel 14, with designs 45 and 46 (Sussman 1972:411) decorating the interior surface. The diameter at the rim is 190.0 mm, with sherd thickness between 3.3 mm and 5.7 mm. The color of the transfer print is 5PB 3/2 and the paste hardness is 5 on Moh's scale.

Vessel 16, Bowl (Figure 23 c). This vessel is represented by six sherds decorated by three designs: design 12, violets, found between design 56, the rim bead-like geometric border, above and design 57, a classic geometric border, below. All decorations appear to be on the interior sides of the bowl, leaving the bottom interior and all the exterior plain.

The pattern name is "Violet," made by W. T. Copeland from pre-1867 to the twentieth century (Sussman 1979a:226). The color of the print is 7.5PB 4/6. The diameter of the bowl is approximately 152.0 mm and the height is approximately 43.0 mm, with a thickness between 2.9 mm and 3.9 mm.

Vessel 17, Bowl (Figure 23 d). This bowl is represented by 28 sherds, many of which fit together to provide an accurate impression of the original vessel. It is decorated with the pattern called "Pagoda," manufactured from ca. 1838 to post-1872. The bottom of the reconstructed base of this vessel is stamped with the manufacturer's name, "Copeland."

The "Pagoda" pattern comprises several designs and shares the same broad motifs with a pattern called "Macaw" (Sussman 1979a:155). The two patterns can often be confused if incomplete vessels are found.

The border decoration on Vessel 17 consists of design 63, stylized flowers on a background of small spirals (Sussman 1972:316), found on both interior and exterior; design 64, found on the interior and consisting of a flower pot with two flowers on a circular stand (Sussman 1972:317); design 77, on the interior, an octagonal flower pot on a rectangular stand (Sussman 1972:318); and design 160, on the exterior, consisting of a bowl with fruit (Sussman 1972:325). The print is extensively flowed on both interior and exterior, with a color of 7.5PB 2/6.

A hole has been bored from both sides through one of the rim sherds of this vessel (see p. 92).

The diameter of the bowl is 127.0 mm at the rim and 28.5 mm at the foot-ring. The height is 66.5 mm, and sherd thickness varies from 3.7 mm to 5.0 mm.

Polychrome Underglaze Sponge-Stamped Ware

Vessel 18, Cup (Figure 23 e). This vessel is represented by three sherds with polychrome stamped and painted decoration applied under glaze. The interior of the vessel is plain except for a painted green border (7.5GY 5/8) 2.40 mm wide, applied just below the rim.

The exterior of the cup has the same hand-painted green border on the rim, followed by a sponge-stamped overlapping row of red flowers (2.5R 3/6), underneath which is a row of alternating yellow rosettes (5Y 8/8) and green leaves (2.5BG 3/4). The combined sponge-stamped design is approximately 30.0 mm in width and is followed by an undecorated space approximately 15.0 mm wide. This, in turn, is followed by a hand-painted green border (7.5GY 5/8) just above the shoulder of the cup.

The diameter of the vessel is approximately 133.4 mm, with a thickness between 3.0 mm and 3.4 mm.

The manufacturer of this vessel has not been identified, since a number of companies produced earthenware with this type of decoration. The most likely source, however, is Scotland, which produced a sponge-stamped ware known as "Portneuf," described as:

> ". . . simple pottery for use on table and in toilet, decorated in vivid colors by sponge and band painting, generally having no maker's marks, exported from Great Britain and particularly from Scotland to Canada in a period from about 1840 to 1920 and distributed in the main from Quebec City and Montreal to the settlements on the banks of the St. Lawrence River" (Finlayson 1972:52-53).

Finlayson (1972:56) notes that Portneuf ware was also found in homes and villages where Scots and French originally settled.

Similar pieces were also made by various potteries in the United States from Massachusetts west to Ohio and south to Maryland and from ca. 1870 to 1920 (Ketchum 1983:235). Since the Métis at Buffalo Lake had access to products from Britain through the Hudson's Bay Company and the various freemen outfitting from Winnipeg, and to American products through the various merchants and free traders outfitting from Fort Benton, the source of this particular vessel is undetermined.

Red Stoneware

Vessel 19, Cup (Figure 23 f). Vessel 19 is a possible cup, represented by two rim sherds. It is made of an English earthenware (red stoneware) with a deep coppery-gold colored, metallic glaze that is also known as lusterware.

The decoration of the vessel is confined to the exterior and consists of a dark brown metallic glazed border (5YR 2/2), 15.5 mm wide, extending from the rim, followed by an opaque blue band (5PB 3/8), of undetermined width because the vessel is incomplete.

The interior is finished in a light-colored opaque glaze (5GY 9/1) with no other decoration. The paste is of a reddish brown color, similar to the exterior border without the metallic sheen. The manufacturer is undetermined, but possibly the vessel was made after 1850 (Sussman 1972:236). The projected diameter of the cup is 62.75 mm, and sherd thickness varies from 3.42 mm to 3.80 mm.

Miscellaneous Ware

In addition, five earthenware sherds recovered from Cabin 3 could not be positively associated with any of the previous 19 vessels. One sherd is burned and has a foot-ring; presumably it is part of the bottom of a bowl or saucer which has been thrown into the fireplace. The other sherds, however, are from the unglazed exterior portion of a vessel and from a plain white glazed earthenware vessel.

Glassware

Transparent Bottle Glass (Figure 24 a). A total of 13 sherds of transparent bottle glass were recovered from Cabin 3. The surface of the sherds is weathered, with an irridescent patina, but when viewed in cross-section, they exhibit a slight greenish tone. A computer-generated histogram based upon 52 thickness measurements is bimodal. This suggests the possibility that two vessels are represented in the sample. The first mode clustered 32.69% around a thickness between 2.67 mm and 3.18 mm. The second mode clustered 42.31% around a thickness between 1.62 mm and 2.40 mm and represents a bottle approximately 30 mm in diameter.

Patent Medicine Bottle Fragments: Perry Davis Vegetable Pain Killer (Figure 24 b). Eleven sherds forming part of a patent medicine bottle were recovered from Cabin 3. Several sherds had moulded letters, found on the front and side panels of the bottle. Part of the melted base of the bottle measured 36.92 mm wide and 17.36 mm deep. The letter "R," 12.05 mm up from the bottle base, was found on the fragments of a side panel attached to this basal sherd.

Three additional sherds from side panels had the letters "KIL," "LE," and "P" respectively The letters "VIS" were found on a front panel sherd, and "S" on a back panel sherd. The remaining sherds had no lettering.

The front panel on a complete bottle would have borne the inscription "PERRY DAVIS," the side panels "VEGETABLE" on one side and "PAIN KILLER" on the other (Alyluia 1973:73-74, quoting Holbrook 1959:153).

Perry Davis Pain Killer was a proprietary medicine, since its brand name was registered rather than its formula patented. Its ingredients included gum Myrrh, 2 1/4 pounds; capsicum, 10 ounces; gum opium, 8 ounces; gum benzoine, 6 ounces; gum guiac, 3 ounces; gum camphor, 10 ounces; and alcohol, 5 gallons (Oleson 1891:134).

Dr. R. A. Locock of the Faculty of Pharmacy and Pharmaceutical Sciences at the University of Alberta provided the following description (paraphrased) of properties of the ingredients in Perry Davis Pain Killer.

Myrrh is locally stimulating and may excite peristalsis of the alimentary tract. Capiscum, also known as Cayenne pepper, is a powerful local stimulant, producing when swallowed a sensation of heat in the stomach and a general glow throughout the body. Opium, which is about 10 per cent morphine, was used as an analgesic. Benzoine is an irritating expectorant which promotes the ejection of fluid or semi-fluid from the lungs and air passages by coughing and spitting. Guiac was known as an "alterative" - a mysterious drug that was used for chronic diseases for which there was no satisfactory treatment, such as scrofula, syphilis, and chronic rheumatism. Because of its local irritant action on the stomach, it might cause some nausea, which would increase the tendency to sweat, but it is doubtful that guiac had any therapeutic virtue. Camphor was taken orally as a carminative and weak expectorant. The major use was as a topical irritant for the external treatment of muscular strains, as a liniment. Camphor is toxic; cases of poisoning have occurred mainly from the accidental ingestion of camphor liniment (R. A. Locock, personal communication citing Osol and Farrer 1955).

Perry Davis Pain Killer was registered in 1845, and bottles are quite common in sites from Quebec to British Columbia. The example illustrated in Alyluia (1973:91) is larger than the one from Buffalo Lake.

Medicine or Druggist's Bottle Fragments (Figure 24 c). A further 12 sherds from a medicine or druggist's bottle were recovered in the excavation. Although similar to the Perry Davis bottle sherds, they do not have writing on their panels and their average thickness is 1.50 mm, much thinner than the average Perry Davis sherd thickness of 4.46 mm. They form a bottle which is perhaps comparable to those illustrated in Jones (1970:130, 133, 135, Figures 20-22).

Scotch Style Whisky Bottle Fragments (Figure 24 d). This vessel is represented by two base sherds and 15 body sherds of yellow-green glass (2.5GY 5/6) covered with a dull iridescent patina. The largest body sherd, from near the shoulder or base of the bottle, measures 49.76 mm by 32.62 mm by 5.49 mm. The glass contains several oval bubbles oriented parallel to the length of the bottle. The diameter is approximately 70 mm at the base. The bottle was probably made in a mould, but the remaining sherds are too fragmentary to confirm this. It is similar to a "Scotch Style Whiskey" bottle described by Alyluia (1973:32).

Multiple Dose Medicine Bottle Fragments (Figure 24 e). A total of thirteen sherds of blue bottle glass were found. Eleven of the sherds are from the neck area and are coated in a smooth, dull, highly colored iridescent patina. There are bubbles present in the glass.

The thin neck sherds, measuring approximately 2.70 mm, are a medium blue color, 5PB 5/8, while the two thicker body sherds, measuring approximately 4.75 mm, are consequently of a darker blue and of a more intense color when backlit (7.5PB 3/12).

The distinctive blue color may indicate a British origin (Alyluia 1973:71-72). The bottle is possibly a multiple dose medicine bottle.

Medicine Bottle Fragments? Nine melted glass sherds of partially fused, very pale green transparent glass were recovered in excavations. Possibly from a medicine bottle, the sherds are so distorted by heat that it is impossible to estimate the size or shape of the original vessel.

Bottle Fragment? One small, thin, and slightly curved glass sherd appears to have come from a bottle. The glass is transparent with a thin purple blue iridescent patina of a different hue from sherds described previously. Because of this difference the sherd has been ascribed to a different vessel.

Mirror Glass (Figure 24 f). Six mirror glass sherds were recovered in excavation. The glass is clear and transparent, with some of the "silvering" still remaining on one surface. There is a very thin, iridescent patina on the surface of both sides. Sherd thickness is 1.82 mm. The sherds were probably from a small hand mirror of undetermined size.

Window Glass (Figure 24 g). A very thin, flat sherd of transparent glass was recovered from the upper level of Feature 2. Possibly from a window pane, it is covered with a thin iridescent patina and measures 17.14 mm by 10.24 mm by 1.22 mm. Window glass, though available at this time, was quite expensive. The more common form of letting in light made use of hide parchment that was rubbed with fat to make it translucent (D'Artigue 1973:125).

Sheet Metal Artifacts

Iron Strapping (Figure 25 a). A thin piece of burned iron strapping, 70.10 mm by 21.36 mm by 1.24 mm, was recovered in association with Feature 1. The strapping has three perforations through which nails passed to attach it to a crate as a reinforcement. The crate appears subsequently to have been burned in the fireplace.

A second piece of strapping, 14.06 mm by 18.34 mm by 1.17 mm, was recovered from Feature 2. A small piece of preserved wood is still attached.

Iron Keg or Barrel Hoop Fragments (Figure 25 b). Two hoop fragments from a keg or barrel were recovered from Feature 3. The first measures 198.32 mm by 28.35 mm by 1.84 mm; the second measures 196.36 mm by 24.10 mm by 2.02 mm.

Ferrous Metal Container Lid (Figure 25 c). A ferrous metal lid from a small container was recovered from Feature 2. It measures approximately 40.64 mm in diameter and 1.43 mm in thickness, with an upturned rim 3.13 mm high. This object was not cleaned in order to preserve the fragments of cloth that are attached.

Iron Cans and Fragments (Figure 25 d, e). An almost complete iron can (Figure 25 d) was recovered from Feature 3. It has been opened with a knife from the bottom, resulting in a jagged edge. The top of the can is still intact and retains two spots of solder, which originally sealed the small openings used to let out steam as the contents were cooked at the cannery. The crushed remains of the can measure 87.3 mm in height, with a diameter of 76.05 mm and a weight of 68.11 grams.

An end from an iron can (Figure 25 e) was recovered from Feature 2. It also has been opened with a knife rather than a can opener, although it does not match the can from Feature 3. It is approximately 44 mm in diameter and .97 mm in thickness.

The body of an iron can was recovered from the cabin floor just north of Feature 1. Both ends are missing and the can is crushed flat. The approximate dimensions are 36.92 mm in diameter, 39.81 mm high, and .88 mm thick. The can is joined along the side by an overlapping soldered seam 8.62 mm wide.

From Feature 2 another tin can body section was recovered. It measures 103.00 mm by 19.50 mm by .55 mm. It has an overlapping soldered seam 4.21 mm wide. Neither the diameter nor the height of the original can can be determined. A second large body fragment, 180.00 mm by 20.00 mm by 1.02 mm, also has a seam.

Ferrous Metal Scrap. A total of 59 pieces of rusted ferrous metal scrap were recovered from Feature 2. Of these, two pieces bear wood impressions on their oxidized surfaces; one has the impression of a fine woven cloth, possibly cotton; one piece has been bent in a circle 18.36 mm in diameter, and one piece has a 1.62 mm diameter nail hole in one end. A single fragment, possibly from a biscuit tin, was also found. Of the remaining 50 fragments, 46 appear to be pieces of iron can, and four are unidentifiable.

Copper Scrap. A small piece of unidentified copper scrap was recovered from Feature 2. It measures 9.67 mm by 3.59 mm by .63 mm.

Brass Metal Ring (Figure 25 f). A brass metal ring that appears to have been cut from a .44-40 Winchester Centrefire cartridge case was recovered from Feature 2. It has an outside diameter of 11.34 mm, an inside diameter of 9.95 mm, and a height of 3.78 mm. It may have functioned as a ferrule.

Lead Foil (Figure 25 g). A total of 28 pieces of lead foil were recovered in excavation. Lead foil was associated with all three features in Cabin 3. The largest example measures 49.70 mm by 27.02 mm by .36 mm; the average thickness of all fragments is approximately .40 mm.

This foil may have originated from containers, or liners for containers, holding tea, one of the most common beverages in the Upper Saskatchewan District during the nineteenth century.

Black powder also was sometimes sold in lead containers, which were afterwards melted down and cast into balls for ammunition. Most of the documentary evidence for Buffalo Lake, however, suggests that powder was sold from kegs.

Perforated Zinc Alloy Sheet Fragments (Figure 25 h). A total of nine fragments of zinc alloy or zinc-plated sheet metal were recovered. Three of the fragments fit together, forming a section measuring 64.07 mm by 54.58 mm by .53 mm.

Perforations appear to have been punched with a square nail. Some appear rounded in outline owing to the nail having been twisted in the holes to smooth the corners. The section exhibits an even pattern of nine rows of six perforations, each with two extra tiny holes in line with the first row of six. All pieces were perforated from the same side, resulting in a series of sharp raised ridges, much like those found on a cheese grater. These ridges average 2.25 mm in height, including the thickness of the metal sheet.

A second series of three fragments also fit together, forming a section that measures 115.59 mm by 22.47 mm by .56 mm. These pieces have 21 square nail-hole perforations randomly spaced and with little effort made to round the edges. The ridge formed on the back side of the section is 2.18 mm high.

In addition, three unperforated fragments were recovered, of which two fit together, forming a section that measures 73.30 mm by 10.33 mm by .55 mm.

All of these fragments appear to have come from the same artifacts. Although identification is not positive, they may be from a tobacco shredder, a grater, or a pierced metal-work lantern.

A single piece of zinc alloy had been formed into a ring 13.13 mm in diameter, 3.03 mm high, and 1.05 mm thick. The thickness of the metal alone suggests origin from a different artifact than the previously described fragments.

Wire Artifacts

Wire Handle (Figure 26 a). A wire handle, possibly from a small metal pail, was excavated from the bottom of Feature 2. It measures 132.33 mm in length and 4.0 mm in diameter.

Iron Hooks (Figure 26 b, c). Three fragments of an iron hook were excavated from Cabin 3. Two sections were recovered from Feature 2, while the third was recovered from the fireplace, Feature 1. The fragments may represent a portion of fireplace hardware used to suspend cooking pots. The joined fragments are 68.22 mm in length and have an oval cross-section 8.85 mm by 7.83 mm.

A second long iron hook (Figure 26 b), broken at one end, was recovered from Feature 3. It measures 227.00 mm in length and 7.28 mm in diameter.

A third hook (Figure 26 c), with flattened and broken ends, was recovered from Feature 1. It measures 97.02 mm in length and 8.51 mm in diameter.

All three hooks may have been fireplace hardware.

Metal Straight Pins (Figure 26 d). Five plated steel straight pins were recovered from Cabin 3. Their length ranges from 29.97 mm to 42.0 mm, diameter of shaft from .78 mm to .91 mm, and diameter of head from 1.75 mm to 2.02 mm. All are complete except for one that is broken into five sections. Four pins were recovered from Feature 2 and one from Feature 1.

Stamped Metal Spoon

A machine-stamped tin-plated ferrous metal spoon (Figure 26 e) was excavated from Feature 2. Of teaspoon size, it bears no maker's marks or inscription. Total length is 134.40 mm, while the bowl is 46.80 mm long and 30.16 mm wide.

Tin-Plated Cup

A complete tin-plated ferrous metal cup (Figure 26 f) was recovered from Feature 2. It is 47.00 mm high and has a diameter of 103.00 mm at the rim.

Strike-a-Light Fragment

A flattened piece of steel (Figure 26 g), broken at both ends, was

recovered from Feature 2. It measures 53.82 mm long, 10.23 mm wide, and 4.27 mm thick. It appears to be a section of a fire steel or strike-a-light.

Rectangular Brass Object

An extruded rectangular brass object with a hole bored off-centre through its length (Figure 26 h) was recovered from Feature 2. Preserved in the hole is a piece of two-ply twisted cord with a knot in one end. The brass object measures 58.84 mm by 11.71 mm by 11.57 mm. The diameter of the hole is variable, measuring 6.24 mm at one end and 5.92 mm at the other. The piece of cord is 70.48 mm long and 1.66 mm in diameter. The function of this object is yet to be determined.

Silver United States Half Dime

A silver United States half dime dated 1857 (Figure 26 i, inset) was recovered from Feature 3. This coin, composed of 90% silver and 10% copper, contains .0362 ounces of pure silver. It is of the "arrows removed" variety of the "Liberty Seated" type issued from 1856 to 1859 (Krause and Mishler 1985:1869-1870).

Hard Rubber Comb Tooth

A single hard rubber comb tooth (Figure 26 j) was recovered in Feature 2. The tooth measures 30.28 mm in length, 4.40 mm in width, and tapers in thickness from 2.58 mm to 1.18 mm. This is similar to examples recovered from Cabins 2 and 4 and discussed further in Chapter VII, p. 172.

Discussion

The Household, Business, and Personal Maintenance category was dominated by ceramics and glassware. Over 180 ceramic sherds were assembled in the laboratory to reconstruct portions of a minimum of 19 separate vessels.

Most of the sample was earthernware, with a paste hardness averaging greater than four to less than five on Moh's Scale. This earthenware sample was dominated by monochrome underglaze transfer-printed wares manufactured in Staffordshire by W. T. Copeland. The identified patterns included Pagoda, Ruins or Melrose, B 772, Ivy, and Violet. The other positively identified maker was Thomas Furnival.

The 19 identified vessels were dominated by decorated bowl and cup-and-saucer forms, accounting for 89.47% of the sample. The remainder was made up of dinner plates. Of the transfer-printed ware, the most frequent print color was a moderate purple-blue.

The origin of most of the wares from Cabin 3 appears to have been Great Britain, via the Hudson's Bay Company, though independent suppliers in Red River such as Stobart and Eden also handled English goods (Hamilton 1875). Similar wares were identified from Company posts by Sussman (1972 and 1979a), and Doll also has noted vessels with identical

patterns from Hudson's Bay posts dating from the middle to the third quarter of the nineteenth century, such as Rocky Mountain House, Victoria Post, and Fort Pitt. Presumably, ceramics with these patterns would have been purchased from the various posts, including Fort Edmonton, from freemen who outfitted for trade the various Company posts, or from independent merchants in Winnipeg.

The source of the sponge-stamped earthenware and the lusterware is more problematical. Several pieces of the former could have been brought to the settlement of Lac Ste. Anne or St. Albert from Quebec, where the type was more common. Alternately, if the ware was of American rather than of Scottish manufacture, the source could have been Red River by way of Minnesota or Fort Benton, which in turn would be supplied by St. Louis, I. G. Baker and Company's headquarters, with river-steamboat and other transportation networks existing right to the place of manufacture. Certainly the presence of the United States 1857 silver half dime is indicative of commerce in that direction. In addition, agents of the I. G. Baker Company were operating in the Upper Saskatchewan District as far north as Fort Edmonton from a very early period. They had established a presence at Buffalo Lake and farther south at Lethbridge, Fort Calgary, and Fort Macleod (see Chapter III).

Also problematical was the identification of incomplete impressions in the bottom of a dinner plate, Vessel 5. It is possible that these impressions may form part of a date stamp by Mintons Ltd. of Staffordshire, England. If so, then they appear quite similar to the illustrated date stamp for the year 1881 (Cushion 1980:234). On the documentary evidence, this would seem to postdate the final abandonment of the site (see Chapter III, however).

If these impressions can be positively identified, there may be evidence to suggest individual reoccupation of the Buffalo Lake Métis site, or at least of Cabin 3, after the major abandonment in the spring of 1878, and after the general movement of Métis hunters south to Bow River, Milk River, and subsequently south of the United States border into the Judith Basin of Montana.

This one artifact, perhaps coupled with the shot-shell bases, has the potential to cause a serious reinterpretation of the Buffalo Lake Métis site, and also of the resources that would have replaced the bison after 1878. This, in turn, raises other questions. If there is evidence for post-1878 occupation, could there have been year-round occupation as well, since bison would not then be the only reason for inhabiting the site?

The other obvious question that arises is whether there were still bison wintering near Buffalo Lake subsequent to the documented abandonment in the spring of 1878. There are references to hunting parties from Duhamel and Hobbema (Edmonton Bulletin 1884) seeking a few remaining buffalo southeast of the Métis site, but no clear-cut evidence to suggest the economic viability of such ventures. If these buffalo were present in sufficient numbers, an <u>hivernement</u> existence might have been possible for one or more families until some time later. Despite the collapse of the robe trade, there was still a market for fresh and dried meat as well as leather.

The presence of a large number of fragile artifacts such as ceramics suggests that the Métis at Buffalo Lake travelled and wintered as complete households. This contention is supported by James Hector of Captain John Palliser's 1858 expedition, who observed that two villages of 30 to 40 houses each, making up the settlement of Lac Ste. Anne (the population of which made up the greater part of the Buffalo Lake wintering site), was almost deserted during the hunt (Spry 1968: 219-220). Although, by their fragmentary nature, the Buffalo Lake ceramics indicate rather rough usage, there is some evidence to suggest that repair was attempted on three vessels and that final disposal was not completed until a vessel was unsalvageable.

Most of the glass sherds recovered from Cabin 3 were from bottles, and most of the identified bottles were for medicine. This poses the question of how dominant were the roles played by folk-medicine and pharmacology respectively? The trend towards the use of pharmaceuticals and patent medicines appears to have been reinforced by the missionaries, who, like the Hudson's Bay Company, tried to maintain regular stocks (Baldwin Nd; Lestanc 1910). Certainly there is hard evidence for the use of patent pain killers, which may go hand in hand with evidence for the consumption of processed canned foods. At this time, such foods would have been dominated by fruits, condiments, and meats. These combined with the heavy use of refined sugar in tea, the dominant beverage, may suggest one important reason for such a large consumption of patent medicines: dental caries and the accompanying toothache.

Fireplace hardware, such as hooks for suspending cooking pots, appear to be common. Although matches were by now generally available, the use of flint and steel to start fires in the cabins is in evidence.

Although illicit whiskey trading took place at Buffalo Lake, and was the main reason the North West Mounted Police paid a visit there in January of 1875, the Scotch whiskey bottle present at Cabin 3 was more than likely part of what was allowed under permit. All historical sources consulted mentioned casks or kegs as the standard container for the transport of liquor in the Northwest, less likely than bottles to break in transit.

In summary, the artifacts in the household category reflect an inventory of consumer goods that would indicate a rather long, though temporary, stay, in that many of the objects would have required careful preparation and packing for transport to the wintering sites. Many could only be replaced at major posts such as Fort Edmonton or Winnipeg, and consequently they were highly valued. This was particularly evident in the case of certain ceramics.

There is also some evidence to suggest that at least one window in Cabin 3 was glazed. Most descriptions of wintering cabins describe a stretched, greased piece of deer parchment serving the purpose of letting in light.

TRANSPORTATION

Animal powered transport played a major role in the daily life of the various people who visited and wintered at Buffalo Lake. To the

Métis hivernants, in particular, horses were crucial to the hunt and to the subsequent transportation of the products of that hunt. Indeed, horse transportation was the single most important ingredient in assuring success in the provisioning and robe trade, once the bison herds had been located. Peter Erasmus (1976:206-208, 218-219) describes at some length the importance and the value attributed to a good "buffalo-runner."

From the correspondence of the partners and clerks of the Hudson's Bay Company we can document the importance of animal transport at Buffalo Lake and other wintering sites in the Parkland and foothills. Although oxen were in common use throughout the period, letters written between the years 1874 and 1877 to and from Richard Hardisty are heavily spiced with references to the use of horses with (Red River) carts during the summer and early fall (Hardisty Papers, Items 610, 887) and the use of horses with sleds in the winter (Hardisty Papers, Items 421, 422, and 613). The use of dog trains in the winter months is also well documented (Hardisty Papers, Items 608, 609, 611, 614, and 773).

Of no small importance was the use of horses for trade by agents of the Hudson's Bay Company and by the many free traders (Hardisty Papers, Items 605 and 773).

Although steamboat transportation, however unreliable, was available to the two closest major supply posts for the Buffalo Lake hivernants, Forts Benton and Edmonton, it was not of direct significance at the site itself.

Horseshoe Nails

Six horseshoe nails (Figure 27 a) were recovered from the interior of Cabin 3, five examples from Feature 2, and one from Feature 1. Possibly the latter nail decorated an object that was subsequently used as fuel. Four of the six specimens are complete, averaging 56.34 mm in length. Five of the six have five-sided heads when seen in profile, while one specimen, recovered from Feature 1, has a three-sided head.

Harness Parts

Base of Harness Stud or Bell (Figure 27 b). A possible base for a harness stud or bell was recovered from Feature 2. It consists of a round iron disc 20.20 mm in diameter with a raised rim 3.94 mm high and 1.14 mm thick, to which the dome of a stud or bell could have been crimped. Attached to the bottom of the disc, by means of an iron rivet in the centre, is a double-pronged staple for attachment of the leather harness. The one complete prong of the two measures 25.25 mm by 11.58 mm by .98 mm.

Leather Harness Strap (Figure 27 c). A section of leather harness strap was recovered in six small fragments from Feature 2. The section measures 60.45 mm in length, 14.82 mm in width, and 2.81 mm in thickness. The leather was extremely dehydrated, so that the foregoing measurements cannot be regarded as accurate for the strap in new condition.

Harness Buckles (Figure 27 d-f). Two types of small harness buckles were recovered. The first type (Figure 27 d) is distinguished by its rounded proximal end. One example, from Feature 2, measures 25.68 mm by 24.73 mm, ranging from 3.55 mm to 4.61 mm in thickness. The length of the tongue is 26.94 mm, and the diameter is 3.27 mm.

A second example (Figure 27 e) was recovered from Feature 3 and measures 25.44 mm by 24.90 mm, with a thickness ranging from 3.09 mm to 4.79 mm. The tongue is 26.18 mm in length and 3.25 mm in diameter.

The second type of small steel harness buckle is characterized by a straight proximal end (Figure 27 f). The long axis is perpendicular to the tongue rather than parallel to it as in the first type. One example, from Feature 2, measures 16.54 mm by 20.18 mm, with a thickness ranging from 2.67 mm to 2.74 mm. The tongue measures 17.04 mm in length and 1.98 mm in diameter.

Harness Rings (Figure 27 g, h). Two harness rings were excavated from Feature 2. The first is 41.11 mm in diameter and was made from steel stock 4.82 mm in diameter. The second is 38.26 mm in diameter, made from steel stock 5.33 mm in diameter.

Discussion

Transportation, and the activities related to it, were very important at the Buffalo Lake hivernant camp. On first impression, it would seem, therefore, that artifacts of this category are rather under-represented in Cabin 3. However, the paucity of artifacts reflecting transportation may in itself be an artifact of the archaeological method. Artifacts normally associated with transportation would be expected outside the cabin, to be found with a stable structure, or, in the case of dog transportation, a stage structure. That artifacts related to horse transport were found within the cabin itself suggests that harness repair took place here as part of the many household activities. Excavations away from the cabin structures might shed further light on the presence of shelter for horses, dogs, or oxen, in addition, perhaps, to revealing specialized work stations related to transportation, such as forges and carriole stages.

DRESS AND ORNAMENTATION

Over 95% of the artifacts from Cabin 3 were placed in this category, owing mainly to the inclusion of 11,762 glass beads. No substantially complete items of clothing as such were preserved.

Buttons

The buttons recovered from Cabin 3 were classified into four main groups, each group being further subdivided into types following a system similar to, but not identical with, that found in Losey et al. (1977a:151, Figures 12-15).

Group I, Glass Buttons

Type 1a (Figure 28 a). Type 1a buttons are sew-through (Bragonier and Fisher 1981:205), plain white, and undecorated, with a concave face with a circle in the centre containing four holes. They have a raised rounded rim and a convex back. The measured buttons averaged 10.41 mm in diameter and 3.08 mm in thickness. Three complete and three broken examples were recovered, all from Feature 2.

Type 1b (Figure 28 b). Type 1b buttons are the same as Type 1a, except the basic color is brown. Two whole and one broken example were found. The first whole example measures 10.99 mm by 3.12 mm. The color is 5YR 2/4. The second whole example measures 10.76 mm by 3.06 mm and is of the same color. The broken example is 3.16 mm thick and its color is 5YR 3/4

Type 2 (Figure 28 c). Type 2 glass buttons are characterized by a concave face with four holes and a rim that slopes down towards the recessed circle in which the holes are located. The buttons are white in color with convex backs. They differ from Type 1 in that they lack the raised rounded rim.

Only one Type 2 button was found. It measures 11.39 mm in diameter, with a maximum thickness of 3.13 mm.

Type 3 (Figure 28 d). Type 3 buttons differ from Types 1 and 2 in that they have no recessed circle in the middle. Otherwise they are similar in most characteristics.

Two examples were recovered, one of which is broken. The whole example is 10.11 mm in diameter and 3.40 mm thick. The thickness of the broken example is 3.33 mm. Both specimens were recovered from Feature 2.

Type 4 (Figure 28 e). The faces of Type 4 buttons slope upward from the outer edge to the central recessed circle containing the four holes. The back edge of the button slopes downward to meet the flat circle containing these holes, giving the button a "flying saucer" shape. The buttons are white in color.

Two examples of this type were found. Their diameters are 14.51 mm and 14.57 mm, and their thicknesses 4.03 mm and 4.10 mm.

Type 5 (Figure 28 f-i). Type 5 buttons have a white basic color, with four holes. There is no shoulder, and the face slopes upwards from the outer edge to meet a recessed circle containing the holes. The back is convex. Within the type, several sub-types can be distinguished.

(a) Plain White (Figure 28 f), with the possibility that an overglaze transfer design has been worn off. The diameter is 10.52 mm, thickness 2.95 mm.

(b) Quilted or Cross-hatched Overglaze Transfer Design on face and edge (Figure 28 g). The color of the design is 5R 6/6. The diameter is 11.22 mm, thickness 3.33 mm. Such "calicos" are similar to French

pressed clay types of the nineteenth century (Peacock 1978:53, Figure 11.5). Some of them were transfer-printed with patterns similar to contemporary cloth prints such a calico or gingham, or they were printed with other stencilled designs (Peacock 1978:54).

These buttons were manufactured in Italy, Bohemia, England, and France and date from around the middle of the nineteenth century (Luscomb 1978:16).

(c) Pale Blue on the face and edge (Figure 28 h), but with a white centre (5 to 7B 7/2). The diameter is 11.41 mm, thickness 3.34 mm.

(d) Branch and Leaves Design incised on the face and central recess (Figure 28 i). The decoration is of a reddish brown color, 10R 4/6. (For an example see Schiff 1979:33, Plate 12, Item 8). The single example is 11.30 mm in diameter and 3.09 mm thick. All Type 5 buttons were recovered from Feature 2.

Type 6 (Figure 28 j). Type 6 buttons are the same in general outline as Type 5, except they have a glossy black bone color. Two examples were found, one from Feature 1 measuring 10.79 mm in diameter and 3.08 mm in thickness and one from Feature 2 measuring 10.79 mm in diameter and 2.91 mm in thickness.

The example from Feature 1 suggests that the piece of clothing to which it was formerly attached may have been used as tinder, in combination with a strike-a-light, to make a fire in the fireplace. Discarded pieces of cotton were often charred in the absence of oxygen within a metal container to supply this type of tinder.

Group II, Shell Buttons

Shell buttons were made from a variety of mollusc shells (pearl or mother-of-pearl). They were mass-produced in Birmingham from the beginning of the nineteenth century and in America from 1885 (Peacock 1978:62). The shells were imported from the Pacific and Indian Oceans and from the Red Sea. Fresh-water shells and abalone were used in the United States.

Type 1 (Figure 29 a). Type 1 shell buttons have two holes, a single incised border line, a slightly convex face, and an oval-shaped groove across the holes in the centre to allow for the flush fitting of the thread. The back is flat with no decoration. In some cases one or several layers of shell have come away from the main body of the button, thereby removing the evidence either for the incised border or the oval groove on the face of the button.

Four examples were found, three from Feature 3 and one broken specimen from Feature 2. The first three examples measure 9.59 mm by 1.85 mm, 9.54 mm by 1.24 mm, and 9.98 mm by 2.09 mm. The broken example is missing the groove and border line because the top layer of shell has become detached. The button measures 9.51 mm in diameter and 1.61 mm in thickness.

Type 2 (Figure 29 b). Type 2 shell buttons have two holes, a double incised border line, a slightly convex front, and a convex back. As in Type 1 buttons, an oval-shaped groove is found on the face, but the overall size of the buttons is greater.

One example was recovered from Feature 2. It was 12.44 mm in diameter and 3.10 mm thick.

Type 3 (Figure 29 c). Type 3 shell buttons have three holes, a single incised border line, no groove on the face, and a flat face and back.

One example was excavated from Feature 2. It measures 11.53 mm in diameter and 1.91 mm in thickness.

Type 4 (Figure 29 d). Type 4 shell buttons have no border, no groove, a concave face, a flat back, and four holes. Two examples were obtained from Feature 2. They measured 8.62 mm by 1.18 mm and 9.73 mm by 1.42 mm.

Group III, Bone Buttons

> Bone buttons, the mainstay of peasant clothing before 1875, were made all over the British Isles in small local manufacturies, and production was not centered in one area. Even some quite small villages had a local button maker, who used rib and shin bones from sheep and cattle, which were cut, turned and drilled to make simple buttons [Peacock 1978:56].

The bone buttons from Buffalo Lake, then, would be expected to occur on general, simple work clothing commonly obtained from the Hudson's Bay Company or from travelling free traders. Peacock (1978:57, Figure 13.2) illustrates a bone button similar to the Buffalo Lake examples and notes that such buttons were dyed brown and acquired an attractive patina with age. They also tended to wear unevenly, and they were generally unmarked.

The Buffalo Lake examples ranged in color from an ivory brown to a dark brown, with sometimes a considerable variation on the same piece. Two types are distinguishable.

Type 1 (Figure 29 e). These are large, sew-through, turned bone buttons with concave faces, convex backs, and four holes. The rim is fairly wide and outlined by a wide incised line that forms the base of a central depression containing the four holes. In some examples, an open cross-shaped lathe mark is found on the back. (For comparative examples, see Losey 1977a:151, Figure 56.9; Moat 1978:81, Figure 12 b; and Steer et al. 1979:II, 467, Figure 141 o.)

Five examples were recovered from Feature 2, all perhaps from one discarded garment. Measurements and characteristics are as follows:

Diameter 19.09 mm, thickness 3.92 mm, lathe marks.

Diameter 19.25 mm, thickness 3.73 mm, chipped, no lathe marks.

Diameter 18.91 mm, thickness 2.91 mm, badly eroded, poor preservation, no lathe marks.

Diameter 18.52 mm, thickness 3.10 mm, very well preserved, some root marks.
Diameter 19.13 mm, thickness 2.61 mm, broken, dark patina.

Type 2 (Figure 29 f). Type 2 bone buttons are machine-turned and round, with a brass wire shank. In the centre of the face is a small shallow circular depression, which may originally have contained a paste jewel.

Comparison was made with buttons in the historical costume collections of the Provincial Museum of Alberta and the Faculty of Household Economics at the University of Alberta. The Type 2 style, covered in all cases, was found on women's dresses and, covered in either cloth or leather, on both men's and womens's shoes.

Four Type 2 buttons were recovered from Feature 2. They measured 7.86 mm by 5.60 mm, 7.91 mm by 5.28 mm, 7.79 mm by 5.02 mm, and 7.88 mm by 4.84 mm. The thickness measurement is for the bone portion of the button only.

Group IV, Metal Buttons

Metal buttons from Cabin 3 were found in a great variety of styles. The sample was classified into eight types.

Type 1, Two-Piece Military Button with Wire Shank (Figure 29 g). A single United States Army button was recovered from Feature 2. The button is made from brass with a plain eagle design on the front and is marked with the manufacturer's name on the back: "SCOVILLE & CO. EXTRA."

Campbell (1965:No page) suggests that:

> . . . such buttons could be worn by all soldiers regardless of branch of service. Further, they would be most appropriate for soldiers assigned to supply, medical, and other staff duties away from combat units.
>
> The plain eagle button, figures 20 and 21, born of need during the Mexican War, became the standard design for all enlisted soldiers in 1855 and continued without change until 1872, when the basic design was retained, but the form of the eagle was altered.

Campbell (1965:No page) also presents an account of the manufacture of the Buffalo Lake variety. Leavenworth, Hayden, and Scovill was a partnership founded in Waterbury, Connecticut before the War of 1812. Throughout that war, the firm was the largest supplier of brass buttons to the army, with a virtual monopoly on those for the artillery, light artillery, and rifles. Additionally, they undertook contracts for "plied" buttons for the armed forces for more than 150 years. The descendent company, Scovill Industries, is today a prime contractor to the Department of Defence.

Type 2, One-Piece, Spun-Back Cast Buttons (Figure 30 a). Four cast white metal spun-back buttons with a wire shank in a boss were recovered from Cabin 3. Three were recovered from Feature 2 and one from Feature 3. They measure 22.99 mm by 2.71 mm, 20.63 mm by 1.09 mm, 21.28 mm by 1.30 mm, and 22.62 mm by 1.48 mm respectively.

This type of button is generally common in fur trade sites in Alberta dating from the late eighteenth to early nineteenth centuries (Steer et al. 1979:Vol. 2, 465, Figure 141 a; Kidd 1970:Figure 89).

Type 3 (Figure 30 b). Type 3 are two-piece metal disc buttons with a metal eye. The face piece is crimped onto the back piece. The dome-shaped face is undecorated, and the eye is brazed to the back (Steer et al. 1979:Vol. 2, Figure 141 d).

One brass example was recovered from Feature 2. It measures 11.83 mm in diameter and 9.43 mm in thickness.

Type 4 (Figure 30 c, d). These are single-piece metal sew-through buttons with four holes.

Variety a. These buttons (Figure 30 c) are made from a copper alloy, with four holes contained in a central recess, the edge of which has a decorated, beaded border. The buttons are marked "DOUBLE RING --EDGE." Two examples, one with a small fragment of cloth attached, were recovered from Feature 2. They measure 17.20 mm in diameter and 1.05 mm in thickness.

Variety b. This button (Figure 30 d) is similar to Variety a, but is cast in pewter and has no inscription. The flat portion of the face is decorated with a continuous circle of raised reeds along the outer edge. The single example, from Feature 2, measures 18.02 mm by 1.42 mm.

Type 5 (Figure 30 e, f). These are two-piece metal disc buttons, with a cross-pin serving as the means of attachment.

Variety a. These buttons (Figure 30 e) have a brass face and iron back. The face is decorated with a circle of raised reeds along the edge of the central recess. The cross-pin face is also brass and the back iron. These buttons were originally cloth-covered, with some cloth still attached to one of the examples from Feature 3. Altogether, three examples were recovered, two from Feature 3 and one from Feature 2. They measure 17.29 mm by 4.35 mm (cloth attached to back), 11.20 mm by 4.33 mm, and 16.51 mm by 4.19 mm (see Steer et al. 1979:Vol 2, 467, Figure 141 f).

Variety b. These buttons (Figure 30 f) are decorated, with the inscription "TRADE" and other obliterated letters appearing on the face in script form. The letters appear to be interspersed with various decorative elements. The face is brass, while the cross-pin and back are iron. These too were originally fabric-covered buttons.

One example, recovered from Feature 2, has some rotten wood

fragments of undetermined original function adhering to the rusted back. The button is 16.60 mm in diameter and 4.38 mm thick.

Type 6 (Figure 30 g). This is a one-piece copper-alloy metal disc button, with a cross-pin serving as the means of attachment. It appears to have been manufactured by stamping and is coated in a shiny black enamel. The flat part of the face around the outer edge is decorated with a series of raised dots. The one example, measuring 14.30 mm by 1.13 mm, was associated with Feature 3.

Type 7 (Figure 30 h). These are two-piece brass disc buttons with the face piece crimped onto the back piece. One example was recovered from Feature 3. The entire face is decorated with a pattern of very fine raised dots arranged in concentric circles. The back of the button is missing, while the front is crudely pierced near the edge and may have been suspended with a wire for use as an earring or ornament. The front portion of the button is 18.13 mm in diameter and it is made from brass .42 mm thick.

Type 8 (Figure 30 i, j). These are two-piece, cloth-covered metal buttons with the cloth still attached, making them difficult to distinguish from other two-piece metal buttons, such as Type 5.

Variety a. This variety (Figure 30 i) was covered with cloth of a herringbone weave, possibly wool. It may have had a brazed wire eye, but this is missing on the single heavily rusted example recovered from Feature 2. The specimen measures 12.92 mm in diameter and 5.27 mm in thickness, and may have served as a vest or jacket sleeve button.

Variety b. This variety (Figure 30 j) is larger and thinner, serving perhaps as a coat button. One example, measuring 16.73 mm by 3.10 mm, was recovered from Feature 2. (See Losey 1977a:150-151, Figure 56; 1977b:90-93, Figures 56 and 57 for comparable buttons.)

Miscellaneous. A disc-shaped iron object bearing a preserved impression on its heavily rusted surface was recovered from Feature 3. It may represent part of the front and raised rim portion of a two-piece crimped metal button. It has a hole in the centre 4.05 mm in diameter. The outside diameter is 10.94 mm, and the thickness is .63 mm.

Beads

Glass beads were the most numerous artifacts recovered from Cabin 3. In total, 11,762 were found, accounting for 94.74% of the artifact sample. Most beads were recovered from Feature 2.

In order to maximize recovery of small artifacts, such as beads (often under 2 mm in diameter), large samples of earth, such as cellar fill from the major depressions, especially Feature 2, were bagged on the site and brought back to the laboratory for processing. Using sieves and water flotation, seeds, as well as micro-fauna too small to be collected

in the standard one-quarter inch mesh field screens, were easily recovered.

The classification of the Cabin 3 bead sample is based upon several characteristics including material, method of manufacture, size, color. ability to transmit light, and modification or decoration. Within the bead sample from Cabin 3, four general groups were discerned: drawn tubular beads, wound beads, pressed beads, and finally metal beads.

Drawn Tubular Beads (Figure 31 a, b). By far the most numerous beads were made from glass tubing, heated and tumbled to round the edges, but otherwise unmodified. Of these, the majority were monochrome in a great variety of colors (Figure 31 a). These beads were further subdivided according to size, following Conn (1969). The majority were "seed" beads (under 2 mm in diameter), but some were "intermediate" (between 2 mm and 3 mm in diameter), and "pony" sized (greater than 3 mm).

A second, much smaller group of drawn tubular beads were modified prior to or during the drawing process (Figure 31 b). Some of these are bichrome, with vari-colored cores including the "Cornaline d'Aleppo," having an opaque brick-red exterior with an opaque white or a translucent core. Other modified or decorated beads include opaque white specimens with blue stripes, and some that appear to have been flattened while the tube was in a plastic state. A final example has been modified by facetting subsequent to the drawing and cutting of the tube.

In 1986, Mary Malainey carried out a detailed bead analysis based on identification of characteristics previously described. Bead color was determined by comparison, under flourescent light, with a set of chips from the standard Munsell Book of Color. Malainey discovered that several beads had undergone a certain degree of patination. These were measured wet. In determining the ability of the beads to transmit light, an examination was made under a reflected-light microscope with an artifical light source. Table 10, Appendix III, summarizes the data generated by Malainey's analysis.

Wound Glass Beads.

Undecorated Wound Beads (Figure 31 c, d). Three undecorated wound beads were recovered from Cabin 3. Two (Figure 31 c) are transparent and yellow in color (2.5GY 9/4 and 10Y 8.5/6). They measure 7.10 mm by 3.96 mm and 6.81 mm by 4.00 mm respectively. The third example (Figure 31 d) is much larger, 8.8 mm in diameter and 6.4 mm in length. It is translucent and covered with a dark, iridescent patina (10YR 3/1). All three undecorated beads were recovered from Feature 2.

Facetted Wound Beads (Figure 31 e). Five wound facetted beads were recovered from Feature 2. The facets were made by grinding rather than molding, and they run parallel to the length of the bead. Perforations are generally off-centre. Two beads have eight facets and two have nine facets. Since they appear to have been hand-ground, the facets are generally uneven. The fifth example is too fragmentary to determine the number of facets.

The four measurable examples range in diameter from 9.18 mm to 9.56 mm, averaging 9.43 mm. Their length ranges from 13.44 mm to 14.72 mm and averages 13.89 mm. Four examples are medium sky-blue in color (2.5PB 5/10), and one example is a dark blue shade (10B 5/8).

Inlaid Wound Beads. One inlaid wound bead was recovered from Feature 2. The badly weathered and subsequently disintegrated example has spots or inlays of blue glass (5PB 3/6), into a basic color of opaque green (7.5GY 0/4). The diameter is 12.6 mm and the length is 12.2 mm.

This type of bead is generally more common in fur-trade sites dating from the late 1700s to early 1800s in Alberta (Nicks 1969; Kidd 1970), and similar types are called "Kitty Fisher's Eyes."

Pressed Glass Beads (Figure 31 f, g). Five pressed glass beads were recovered from Cabin 3. Four are made from transparent green (7.5G 7/8) glass (Figure 31 f). They are squarish in outline, averaging 7.40 mm in diameter and 7.23 mm in length. The beads are flat on the perforated ends, while the remaining four surfaces are decorated with four facets each. All four specimens were recovered from Feature 2.

The fifth presssed bead (Figure 31 g) was recovered from Feature 3. It is made from transparent yellow glass (5GY 9/4) and is rounder in profile, measuring 6.6 mm in diameter and 5.8 mm in length. It is decorated with a number of irregular facets around the entire girth.

Metal Beads (Figure 31 h, i). Two metal beads, both made of brass, were recovered from Feature 2. The first is a two-piece crimped bead, 12.6 mm by 10.6 mm. The second is a one-piece bead, 8.4 mm by 7.6 mm.

Miscellaneous Beads. A sample of melted, bubbled, opaque glass with an iridescent coppery-green patina was recovered from Feature 2. It measures 5.97 mm by 3.85 mm by 2.44 mm, and it may be part of a burned glass bead or several beads fused together.

Glass Ornaments

Pendant (Figure 31 j). Very few personal ornaments were found in Cabin 3. A small pendant or portion of an earring was recovered from Feature 2. It consists of a flat stamped circle with a pin projecting from the edge into the open centre. From the pin, a scarlet-colored clay ball or bead was suspended, but it has since disintegrated. On the outer edge, opposite the pin, a small wire hasp or hook for suspension is located. The face of the ornament is decorated with a series of randomly spaced, raised dots, and the back is plain.

Glass Object (Figure 31 k). A second artifact, recovered from Feature 3, consists of a globular black glass object wrapped around an iron wire core. It may be part of an ornament or costume jewelry. It is 31.69 mm in length and has a diameter ranging from 6.61 mm to 3.94 mm.

Discussion

Based on the archaeological sample, it is impossible to reconstruct a completely accurate picture of the costume of those people who occupied Cabin 3, owing to the poor state of preservation after an abandonment of a century or more. However, during photo-archival research on material contemporary with the Métis occupation of Buffalo Lake, the most striking discovery was the large amount of European-manufactured clothing and accessories worn. Typical of Victorian times, the women depicted in the photographs generally wore dark colors: dresses, hats, or shawls, and in some instances button-up leather shoes. Men were generally dressed in a variety of headgear, with most wearing worn wool jackets, many with matching vests with cloth-covered buttons. Woven trousers were the rule. By far the most common method of holding up the trousers was the woven "Assumption" sash, wrapped around the waist several times and knotted at the hip with both tasseled ends sometimes hanging down almost to the ground. Footwear was variable. In the same photograph, some men would be wearing European or American style commercial leather boots while others wore native-tanned moccasins. (See also the photograph of Abraham Salois, a Buffalo Lake resident, and the Pritchard family on the cover of this monograph. The photograph was taken around 1875.)

Comparing the photographs of Métis people in the 1870s to paintings of Métis in the 1830s and 1940s, a very interesting contrast is observed. In the paintings, by far the most common clothing is of native-tanned leather, though styles may closely approximate European tailored clothing. With a few exceptions, then, the transition from native-tanned leather to woven fabrics was complete by the time the Buffalo Lake site was occupied, and this change reflected the greater availability of the latter types of goods through the trade. The Métis at Buffalo Lake had become a very consumer-oriented group, purchasing not only items relevant to the hunt, such as guns, ammunition, and knifes, but processed and canned foods and tailored clothing.

The large variety of buttons found in Cabin 3 is certainly a testimony to the variety of apparel worn by the occupants. On the other hand, the large quantities of small beads may represent the decoration of a small number of objects such as moccasins, gauntlets, or men's garters. The small beads, at least, were not deemed valuable enough to save for re-use, once the item they decorated was discarded. Beading of footwear, gun cases, and other objects would most certainly have been one of many activities carried on in the cabins over the winter.

There is little additional direct evidence of ornamentation from Cabin 3, except that perhaps one of the female occupants wore commercial earrings.

RELIGION

Religion played a dominant role in the lives of the people at Buffalo Lake. In addition to the documentary evidence (see Chapters II and III), there is artifactual evidence. The largest single artifact of religious association would have been the Roman Catholic chapel, which

also served as a school and residence for the various priests who came out from St. Albert. The discovery of this structure and recovery of the related artifacts is an archaeological problem for the future.

In Cabin 3, two artifacts of religious significance were recovered from Feature 2.

Rosary (Figure 32 a). The first artifact is an incomplete rosary, recovered in two main pieces. The first section, 198.37 mm in length, consists of 23 pressed blue (7.5BG 6/6) glass beads, strung on a chain of wound brass wire and representing a minimum of two complete "decades." The beads are 5.35 mm in length and 4.10 mm in diameter, barrel shaped, and tapering at the ends. They are decorated with encircling ribs, oriented at right angles to the length of the bead.

The second section of the same rosary retains part of two "decades," one of eight beads and one of one bead, a simple undecorated brass crucifix, 18.81 mm by 11.27 mm by .26 mm, and an additional string of blue beads marked by two single separate beads ("Our Father Beads") and a group of three beads ("Hail Mary Beads"). Together they are 35.41 mm long.

Medal (Figure 32 b). The second artifact is a religious medal. It may be a scapular medal, but the example is too rusted to identify as to type. In form, it is an oval disc, with a rounded extension on the top from which it was suspended. It measures 19.13 mm in length, 13.73 mm in width, and 1.23 mm in thickness.

NATIVE INDUSTRIES

Ceramics

Two thick, granite-tempered shoulder sherds (Figure 33 a) were recovered from Feature 2. The exterior is undecorated, while the interior is covered with a fairly thick (1.45 mm) layer of carbon, presumably the remains of burned food. When fit together, the sherds measure 42.03 mm by 33.65 mm by 13.60 mm.

Chipped Stone

Projectile Point Fragments (Figure 33 b-d). Portions of three projectile points, all made from grey siltstone or porcellanite, were recovered from Cabin 3. The first (Figure 33 b) is side-notched, with part of the base and tip broken off. It measures 19.98 mm by 12.28 mm by 2.81 mm. Width between the notches is 8.19 mm. The second (Figure 33 c) is a triangular projectile point with a broken tip. It measures 18.38 mm in length by 12.38 mm across the base and is 3.97 mm thick. The third example (Figure 33 d) is a projectile point tip, but not part of either of the first two points. It measures 12.97 mm by 12.00 mm by 3.58 mm.

End-Scrapers (Figure 33 e, f). Three end-scrapers were recovered. The first (Figure 33 e), manufactured from a bipolar split pebble of green chert, is 14.19 mm in length, 15.12 mm in width, and 3.71 mm in thickness, with the width measurement taken parallel to the unifacially retouched working edge. The second example, of grey chert, is steeply unifacially retouched on two adjacent edges, which lie at right angles to each other. It measures 14.67 mm by 27.31 mm by 4.50 mm. The first example was found in Feature 2, while the second was recovered from Feature 3. The third example (Figure 33 f), recovered from Feature 1, was made on a bipolar split pebble. It measures 21.76 mm by 18.72 mm by 5.95 mm.

Retouched Flakes (Figure 33 g). Three retouched flakes were found. The first is bifacially retouched, made of yellow and red jasper, and measures 24.72 mm by 12.64 mm by 4.84 mm. The second (Figure 33 g) is unifacially retouched, made of reddish-brown quartzite, and measures 41.04 mm by 12.5 mm by 5.57 mm. The third retouched flake is made of mottled grey chalcedony. It started as a biface resharpening flake, but it was subsequently unifacially retouched along the inner flake-scar surface that was formerly attached to the biface. Consequently, this tool has one battered and dull edge, bifacially worked, and one sharp unifacially worked edge. Triangular in cross-section, the third edge is unmodified. The tool measures 25.48 mm by 12.22 mm by 6.29 mm and was recovered from Feature 3. The first two examples were recovered from Feature 2.

Utilized Flake (Figure 33 h). A single utilized flake of black chert was recovered from Feature 2. It measures 20.56 mm by 14.18 mm by 6.46 mm.

Flakes. A total of 35 flakes were recovered from Cabin 3. These were classified as follows:

(a) Primary Decortication Flakes. Four quartzite flakes are in this category.

(b) Secondary Flakes. This category includes nine quartzite flakes, one chalcedony flake, and one chert flake.

(c) Biface Resharpening Flakes Made by Percussion. This category includes ten quartzite flakes, one mudstone flake, and one chalcedony flake.

(d) Biface Resharpening Flakes Made by Pressure. This category includes three quartzite flakes, two porcellanite flakes, and one chalcedony flake.

In addition to the above, there was one chunk from a bipolar split black chert pebble, which was unmodified.

The distribution of the flakes recovered from Cabin 3 is as follows: one flake (2.86%) was recovered from Feature 1, 23 flakes (65.71%) were from Feature 2, 10 flakes (28.57%) were from Feature 3, and one flake (2.86%) was recovered from the floor of the cabin interior along the central portion of the east wall.

Discussion

It is quite possible that many of the lithic artifacts and the ceramics found in Cabin 3 were left by a preceding late prehistoric occupation, of which there were several in the area (Doll 1982). It does, however, seem most unusual that such concentrations would be found in the two depressions, Features 2 and 3, without a proportional distribution in the rest of the cabin interior.

Some of the stone tools found would indeed have been useful in many of the activities that took place around the site or within the cabin itself, including the hunting of bison and the processing of skins for robes. The association of a metal projectile point with Feature 2 establishes the fact that bow and arrow technology was known to the occupants of Cabin 3.

The evidence for in-situ pressure-flaking of porcellanite, the same material that all three stone projectile points were made from, suggests the manufacture and use of these tools by the occupants of the cabin. It should also be noted that the projectile points were very poorly made, a characteristic that they share with the stone projectile points recovered from the trash pits at three of the other cabins excavated.

Although it might be argued that projectile points found their way into the trash pits because they were imbedded in the bodies of bison killed by Métis with firearms, this argument does not account for the larger array of tools and debitage associated in the same architectural features.

The Buffalo Lake Métis site may, therefore, be a late manifestation of the classic but illusive "protohistoric," marked by a mixed assemblage of historically manufactured European goods and prehistorically manufactured "native" goods. This protohistoric, however, would be expected to date from before the middle of the eighteenth century rather than from the last quarter of the nineteenth century.

FAUNAL MATERIALS FROM CABIN 3

The recovery of faunal remains from Cabin 3 is selective in that excavations were more or less confined to the cabin interior. The majority were recovered from Features 2 and 3 (Figure 10), the two interior depressions, from which the mammalian species identified include bison (Bison bison bison), moose (Alces alces), beaver (Castor canadensis), muskrat (Ondatra zibethicus), snowshoe hare (Lepus americanus), pocket gopher (Thomomys talpoides), ground squirrel (Citellus sp.), deer mouse (Peromyscus maniculatus), meadow vole (Microtus pennsylvanicus), and shrew (Sorex sp.).

The identified bird remains include those of Snow Goose (Chen caerulescens), White-fronted Goose (Anser albifrons), Mallard (Anas platyrhynchos), Pintail (Anas acuta), Gadwall (Anas strepera), Ruddy Duck (Oxyura jamaicensis), and Sharptail Grouse (Pediocetes phasianellus). In addition, toad remains (family Bufonidae) and those of a undetermined species of fish were recovered in excavation.

Most species appear to have been used as a source of food. There are apparent intrusive species, however, notably small rodents, microtines, and shrews. Toads by the hundreds were noted in the soft soil of the cabin depression, especially late in the fall as they prepared to winter over.

By weight, bison appears to have been the single most important species to the cabin occupants (see Appendix II for a more thorough discussion and analysis). However, an important observation is the variety of species, so characteristic of the Parklands ecological zone. Although bison was important commercially and as a dietary staple, a diversity of species migrating through or wintering in the Parkland of the Buffalo Lake region was also counted upon for food. This food source (moose, small mammals, birds, and fish) provided a survival insurance policy should the bison fail to appear (as they sometimes did). Bison were preferred, but hares and muskrats would keep a household alive till the next herd was sighted.

A final observation with regard to fish remains at Buffalo Lake must be made. This food source appears to be highly under-represented in Cabin 3 and probably in the site as a whole. Two factors may account for the paucity of fish bones. Poor preservation may be one, but a more likely factor might be the location of the fish processing area outside or away from the cabin, with the result that few bones would have found their way to the interior depressions. Historically, the exploitation of fisheries by Métis of the Upper Saskatchewan is well documented. Not only did the exploitation of fresh, frozen, or dried fish for domestic food supply form part of the yearly round (for example at Lac Ste. Anne), but it also formed a supplemental cash crop in the provisioning trade with the Hudson's Bay Company at Fort Edmonton. The traditional use of fisheries by the same population (Lac Ste. Anne and St. Albert Métis) might also suggest the extensive use of this resource at Buffalo Lake.

CHAPTER V

THE ARCHAEOLOGICAL DATA, CABIN 1

THE RELATIONSHIP OF CABIN 1 AND CABIN 2

The two localities of the Buffalo Lake Métis site chosen for excavation in 1970 and 1971 were near the northern end of the eastern ridge segment described in Chapters I and IV (Figures 4, 5 b). Cabin 1 lay approximately 190 feet (57.91 m) west and 60 feet (18.29 m) south of the northeast corner of LSD 14, Section 11, Township 41, Range 20 west of the Fourth Meridian. It was situated on a gradual slope near the foot of the ridge, surrounded by a fairly thick growth of aspen (Populus tremuloides).

Immediately to the north of this cabin site were two deep ruts suggestive of a wagon road. However, these may have been much more recent than the Métis occupation. Prior to excavation, the locality was marked by a large rock pile and a depression, the latter associated with additional scattered rocks. The depression, however, about 8.0 feet (2.44 m) north-south by 5.0 feet (1.52 m) east-west, appeared to be entirely the result of recent disturbance. Perhaps a second rock pile, then, had been dug into and destroyed by unknown individuals.

Cabin 2 was located on the crest of the ridge, approximately 360 feet (109.73 m) west and 140 feet (42.67 m) south from the northeast corner of LSD 14, Section 11 (Figures 4, 42 a). It was about 150 feet (45.72) west-southwest of Cabin 1 and approximately seven feet (2.13 m) higher in elevation. Trees in this locality were a little thinner than at Cabin 1. To the west of this second cabin site, the land sloped down for about 100 yards (91.44 m) to a shallow, reed-filled slough, approximately 20 feet (6.10 m) below the elevation of the cabin (Figure 5 b). Prior to excavation, Cabin 2 was marked by three depressions and a rock pile. Some disturbance had taken place in this locality as well.

EXCAVATIONS AT CABINS 1 AND 2

In 1970, Cabin sites 1 and 2 were chosen for excavation partly for reasons of salvage, because they were relatively accessible and exposed, and because considerable disturbance appeared already to have taken place. It was felt that the cabin sites in the denser portion of the bush or farther from roads or cattle trails would be more likely to escape further depredation. In addition, surface features defined the probable areas of structure at Cabin 1 and 2 somewhat more clearly than, for example, in the group of depressions and rock piles immediately to the south of Cabin 2 (Figure 4). Figure 34 a shows the locality of Cabin 1 and Figure 42 a shows the locality of Cabin 2.

An excavation grid consisting of stakes set at five-foot (1.52 m) intervals was set in each of the two selected localities and expanded as

required. Both grids were set to an arbitrary north, which differed, however, in the two cases. The arbitrary north at Cabin 1 was oriented approximately 67 degrees west of magnetic north, or approximately 44 degrees west of true north. The arbitrary north at Cabin 2 was oriented approximately 37 degrees west of magnetic north or approximately 14 degrees west of true north. Following excavation, the two grids were plotted on squared paper, and set in their proper orientation with respect to one another.

Excavation was begun with shovel to remove the fairly heavy turf, and subsequently with mason's pointing trowel and dustpan. Particularly during the second season, and in subsequent work, shovels were largely abandoned, since the faint structural remains sometimes proved to run into the turf, and some may even have been destroyed during earlier stages of the work.

A large proportion of the earth was removed in buckets and screened through approximately one-quarter inch (6.35 mm) wire mesh. Since a very small return of beads and shot was indicated, no finer-mesh bead screens were systematically employed until the excavation of the refuse pit in 1973. All recoverable bone was saved in bags of associated materials. Plans were drawn of all localities where structural remains were observed. Photography was attempted throughout, but was inhibited by the faint nature of the structural evidence, and the difficulties produced by strong shadows and numerous roots. On the whole, drawings provided a more useful record. Profile drawings were made occasionally, but generally the shallowness of the excavation reduced their value.

The attempt was made throughout to define overall structures and the general limits of living areas, and consequently depressions and fireplaces were not as intensively investigated as they might have been. After excavation and recording were completed, the site was backfilled. Three pipes surrounded by concrete were set at intervals within each of the two grids in order that they might be re-established.

In 1970, excavations began on July 14 and continued until August 28, with a crew of four to five. In 1971, excavations began on August 17 and continued until September 3, with a crew varying from two to five. In 1973, on August 29 and 30, and again from September 10 to 14, two to three individuals completed excavation of the refuse pit in Cabin 2. Finally, from July 16 to 19, 1974, a crew of four to five made the plat map of the site (later revised) that includes the locations of Cabins 1 and 2 (Figure 4).

THE FEATURES OF CABIN 1

The Wall Lines

Cabin 1 was located on very slightly sloping ground to the east of the higher portion of the ridge along which much of the Buffalo Lake Métis site is oriented (Figure 34 a, b). Excavations here revealed an elongated cabin plan with the shorter axis oriented approximately 58 degrees west of magnetic north or 35 degrees west of true north. The overall dimensions of this structure were about 30 feet (9.14 m) along the long axis and about 13 feet (3.96 m) along the short axis (Figure 35).

Wall lines were generally poorly preserved, reduced to a very thin layer of rotted timber or indicated only by a slight trench or mould between two ridges of very light brown clay (Figure 36 a, b). The latter might have been derived from mud-plaster chinking or whitewash, dissolved from the walls by rain and deposited along the building sills. Alternately, it might have been introduced as foundation material for the sills or banking along the outer walls. Its apparent extension some distance to the north of Cabin 1 suggests rather that it was at this point a natural fill, into which the sill logs were set.

Cabin 1 appeared to have been built entirely on wall sills, since no evidence of posts-in-ground was found. However, timber was not preserved throughout much of the wall area, and posts might very well have occurred. Nor were there any indications of doors, but these would probably not have resulted in gaps in the sill logs or the depressions underneath them.

Evidence of overlapping logs, suggesting an untrimmed log-cabin corner, appeared in the northeast corner (Figure 37 a). (Directions in this description are given with respect to the grid and arbitary north.) One log protruded about 6.0 inches (15.24 cm). However, since this was the sill log, perhaps nearly below ground, there is no proof that the corners of the superstructure were not trimmed.

The other corners of Cabin 1 were extrapolated from wall lines. From the single preserved corner mould, wall timbers could be fairly easily followed for about 5.5 feet (1.68 m) to the west and 4.5 feet (1.37 m) to the south. Elsewhere, the north and east walls were only vaguely defined. Four short sections of poorly preserved timber occurred along the south wall, and elsewhere along this line the ridge and trench combination appeared sporadically. The west wall was defined almost entirely on the basis of this shallow trench running between two low clay ridges.

As interpreted here, building corners would have been located as follows: northeast at 0.3 south, 27.8 east; southeast at 13.4 south, 26.3 east; northwest at 4.1 north, 1.3 west; and southwest at 8.4 south, 3.4 west (Figure 35). (Note that grid locations are given in feet only.)

Dimensions of the sill timbers were virtually impossible to determine accurately because of extensive deterioration, but width of the relatively continuous section ranged between about 0.25 feet (7.62 cm) and 0.5 feet (15.24 cm). Given the present vegetation of the area, we might guess that the sill was made of aspen, which would account for its poor preservation. However, no positive indentification was made.

The length of the rectangle enclosed by the walls indicated (Figure 35) seems rather great for a single room. Therefore, it was hypothesized that two contiguous cabins were represented, one possibly a later extension of the other, or that a partition had occurred to form two rooms in a single cabin. Assuming that ordinary log cabin contruction technique was employed, rather than post-in-ground or post-on-sill methods, and considering the probable size of aspen logs, the former hypothesis is perhaps more likely. To some extent this suggestion would be supported by the contemporary account of Métis cabin-building provided by Jean D'Artigue and quoted in Chapter III, pages 65-66.

A second line of evidence for two rooms or cabins was the possible original occurrence of two rock concentrations within the wall lines. The first of these rock piles formed a relatively well-defined fireplace in the southwestern portion or the structure. The second concentration was much less clearly defined and consisted of scattered rocks, slightly east of centre, to the south of a recent pothole. Although this second concentration could have been derived from the first one, it seems possible that it constituted a separate fireplace, originally situated where the pothole now occurs.

In 1971, an attempt was made to locate the partition. It was hypothesized that it might lie along the short axis and in the middle of the structure. Unfortunately, the northern part of this median line had been disturbed by the pothole, and the southern part was excavated in 1970 before the shallowness of the deposits was realized. Thus faint indications might have been removed.

About 0.5 feet (15.24 cm) north of the projected south wall line, however, and at nearly the exact midpoint on this line, a small piece of timber was encountered with grain apparently oriented north-south. Dimensions of the timber were approximately 0.7 feet (21.34 cm) east-west by 0.2 feet (6.10 cm) north-south. Its centre lay in the grid at 9.6 south, 12.2 east (Figure 35). Although very slight evidence, the coincidence of location and orientation suggests that a partition or wall might indeed have existed here.

Two additional factors might corroborate the existence of a partition or wall at this point. If such a partition were to be placed in an elongated structure having a length about twice its width, and if no other considerations applied, it might seem reasonable that it would be placed at centre to divide the structure into two equal parts. If two essentially separate structures were involved, this wall placement would also be appropriate to the likely size of locally available logs.

Secondly, other evidence from Buffalo Lake indicates the centring of fireplaces along one wall. If the partition or wall occurred as proposed, the fireplace would be approximately centred on the south wall of the resulting room.

Although some burnt wood was observed along the wall lines of Cabin 1, evidence for fire was not overwhelming. However, even if superstructures had burned in one of the fires reported for the region around the turn of the century, the nearly buried sill timbers might have been little affected. Certainly some burned chinking was observed, particularly in the southwest corner of the building.

Feature 1, The Fireplace

The most conspicuous feature in Cabin 1 was the large rock pile in the western unit of the structure or structures (Figures 35, 37 b). The precise size and orientation of the fireplace represented was uncertain owing to scattering of the stone, probably through the initial collapse of the chimney and perhaps subsequent removals. A west and south edge could be approximately located, but limits on the east and north were not clearly defined. However, approximate overall dimensions of 6.0 feet (1.83 m) east-west and 4.0 feet (1.22 m) north-south were suggested, very close to the size of the fireplace in Cabin 3.

The occurrence of hard-packed earth to the north suggested an apron in front of the firebox. This, and the position of the stone structure as a whole, would indicate orientation to the north. If the suggested partition existed, the fireplace would have been located in the approximate middle of the west room, and close to the south wall, but not apparently in contact with it. The outer limits of the fireplace, then, appeared to lie approximately 5.0 feet (1.52 m) east of the west wall of the cabin and 1.0 foot (30.48 cm) north of the south wall.

A considerable amount of ashy fill was found within the stone structure, but no firebox or hearth apron was precisely delimited. The relatively small quantity of stones remaining here, and the limited size of stone piles throughout the site, suggests that only the bases of chimneys were made of stone. Upperworks might have been poles and mud or even sheet-metal pipe. Similar conclusions regarding wood and mud plaster superstructures have been reached with respect to fireplaces excavated in some (but not all) fur trade sites. Hearth-chimneys described by Elliott (1971:24, 25, 27) for the Kajewski site in the Cypress Hills were made of clay framed with poles, and they occurred in a corner or centred on one wall of the room. Bonnichsen (1967:4), however, describes a fireplace at the same site made of cobbles and mud, with a firepan of baked clay in front of the hearth.

Stone piles, however, may sometimes have been pirated long after sites were abandoned, though this would be less likely at Buffalo Lake, where sub-angular granitic cobbles of the type used in the fireplace are fairly abundant along the nearby lake shores.

The existence of a second fireplace in Cabin 1 has been suggested, but no data are available on it owing to the recent disturbance indicated.

No depressions were recorded within Cabin 1, although one was observed in the bush a few yards to the north. This might have been a borrow-pit or, on analogy with Cabin 5, for example, an external storage pit.

Feature 2, The Ash Concentration

Just to the south and west of the mid-point noted above, and outside the south wall line of Cabin 1, was a large ash concentration, particularly rich in artifacts (Figure 35 A-B, Plan and Profile). This ash concentration appears to have begun as a very shallow pit, but eventually to have been built up slightly above the surrounding ground surface. The concentration was approximately round, but with an irregular projection to the west. Although edges were difficult to define, the overall dimensions would appear to have been approximately 4.0 feet (1.22 m) east-west and 3.5 feet (1.07 m) north-south. The maximum thickness of the ash was approximately 0.5 feet (15.24 cm).

If the suggested partition existed, this ash concentration would have lain just outside the southeastern corner of the west room of the cabin. The eastern edge of the fireplace in this room, then, would have lain about five feet <u>west</u> of the centre of the ash concentration. Space would have been provided for a door in the south wall, through which the ashes could have been carried from the fireplace. Alternately, a window could have been set near the southeast corner of the room, although ash

disposal through a window would seen unlikely. Of course ashes could easily have been carried around to the back of the cabin for dumping, and the relationship of features suggested here is highly speculative.

THE ARTIFACTS OF CABIN 1

Method of Analysis

The method of analysis used on this and subsequent artifact lots from the site has already been described in the discussion of Cabin 3, Chapter III. See also Table 11, Appendix III for complete measurements and distributions.

HUNTING

Ammunition and Ignition Parts

Rimfire Cartridge Case (Figure 38 a). A single copper rim-fire cartridge case was recovered, somewhat dissociated from both Cabin 1 and Cabin 2, having been found on the trail between them, but perhaps closer to Cabin 1. The case is 23.4 mm long and 13.6 mm in diameter at the closed end. The latter dimension is somewhat distorted by crushing and was probably originally slightly less. The head measurement, below the headstrap is 13.3 mm (again distorted by crushing). The headstrap is approximately 1.9 mm thick. The letter "H", 3.1 mm high in a circle 6.3 mm in diameter, is stamped in relief at the primer end. The shell is double rimfire, with short, straight lines on opposite sides of the rim marking the impression of the firing pins.

This appears to be a .44 calibre Henry flat cartridge, used originally in the twelve-shot repeating Henry rifle, forerunner of the Winchester (Logan 1959:68). It is similar to the two examples recovered from Cabin 3. These cartridges were manufactured in large quantities at least between 1860 and 1866, and were used in the 1866 model Winchester as well. Both firearms had a double firing pin to prevent misfire.

Percussion Cap (Figure 38 b). A single unfired copper percussion cap for a cap-and-ball firearm was recovered, suggesting that this type of gun, perhaps a percussion shotgun or plains rifle, was in use for at least part of the occupation of this portion of the the site. The general range of firearms in use at Buffalo Lake is fully discussed in Chapter IV and elsewhere. The cap is 6.3 mm long and slightly tapering from the open end, 5.3 mm in diameter, to a closed and rounded end about 5.0 mm in diameter. Straight longitudional corrugations run from open to closed end all around the outside of the cap.

Cap Box Lid (Figure 38 c). A round lid is provisionally identified as the top of a box used to contain percussion caps. It is made of tin-plated ferrous metal, heavily rusted in areas, and has a diameter of 40.7 mm. The original thickness of the metal is hard to determine owing

to corrosion, but it appears to have been about 0.6 mm. The rim is plain, bent down at right angles to the top, and is about 5.9 mm deep. There might have been some stamping on top of this lid, but none is clear at the present time. A comparable example found in Cabin 5, however, may have been made by Ely Brothers of London (see page 85).

CONSTRUCTION, BLACKSMITHING, AND CRAFTS

No direct evidence of blacksmithing was observed at the Buffalo Lake Métis site, although it seems highly probable that among the numerous occupants blacksmiths were present at some times. Construction hardware in Cabin 1 was essentially limited to nails, mostly of the machine-cut variety, but with a few hand-forged examples as well.

Forged Iron Nails

Classification of nails according to head-type is provisional in some cases, owing to extensive alteration of the head through driving. Because of corrosion and fragmentation, even the distinction of forged and cut examples is by no means precise in all cases.

Rose-Head Forged Nails (Figure 38 d). Rose-head nails are characterized by a crown high in the centre, formed generally by four facets produced by the heading hammer. Six examples are included in this category, but two of these are somewhat questionable, since the facets have been reduced by pounding. Two others are possibly cut rather than forged. Four tips remaining are fairly sharp. Complete measurements were taken on four examples and gave lengths of 43.9 mm to 62.1 mm, widths of 3.7 mm to 4.2 mm, and thicknesses of 3.2 mm to 3.9 mm. Measurements obtained on heads were: length 5.1 mm to 9.6 mm, width 3.7 mm to 8.4 mm, and thickness 1.6 mm to 3.9 mm. Shaft measurements on the two fragments were: widths 4.4 mm and 4.4 mm, and thicknesses 4.3 mm and 3.5 mm. Head measurements were: lengths 9.0 mm and 9.4 mm, widths 7.3 mm and 8.6 mm, and thicknesses 2.0 mm and 3.1 mm.

Rose-head nails were probably used for general-purpose carpentry. Of the present group, two are straight; one has about a 45 degree bend near the middle; and another curves gradually throughout the distal half for a total of about 90 degrees. One fragment, possibly cut, has a 90 degree bend near the fracture, perhaps originally about two-thirds of the distance from head to tip. The second, also possibly cut fragment has what may be a comparable bend, perhaps one-quarter of the original distance from head to tip. Both of these fragmentary examples may have been clinched.

Gable-Head Forged Nail (Figure 38 e). Gable-head nails or clasp nails were used for particular purposes where it was desired to conceal the head, for example in flooring. They are characterized by a crown high in the centre, but with generally only two distinct facets, so that the head is essentially T-shaped. The bars of this "T" are bent downward, so that the head of the nail would dig into the wood, or would

"clasp," on being driven. Only one forged example was recovered from Cabin 1. Length is ca. 70.0 mm, width of shank is 4.3 mm, and thickness of shank is 3.8 mm. The head is 6.8 mm long, 3.6 mm wide, and 1.8 mm thick. The nail has a nearly right-angle bend, apparently a clinch, approximately three-fourths of the distance from head to tip and a second very slight bend in a perpendicular direction at about the middle.

L or T-Head Forged Nail (Figure 38 f). A single example is badly rusted, and part of the head may be broken off. However, in its present form it resembles a brad or L-headed nail. Length is 59.2 mm, width of shank 4.9 mm, and thickness of shank 4.5 mm. The present head is 9.4 mm long, 5.7 mm wide, and 2.6 mm thick. The nail shows slight curvature throughout its length. The tip has probably been sharp, but is now slightly splintered.

Flat-Head Forged Nails (Figure 38 g). Two diminutive examples (tacks) appear to have flat heads, although again they may be flattened by pounding. Lengths are 18.1 mm and 26.7 mm, widths 2.5 mm and 2.5 mm, and thicknesses 2.0 mm and 1.9 mm. Both shanks are straight. One point is sharp and the other may have been flat, though it may be simply rusted. Heads are 5.2 mm and 7.9 mm long, 4.4 mm and 7.2 mm wide, and 0.8 mm and 1.9 mm thick.

Forged Nail Fragments (Figure 38 h, i). Six fragments of forged nails are missing the head, and therefore cannot be further classified. Five of these are tip fragments, four with sharp tips (Figure 38 h). The largest shaft measurements obtained on this group are 5.3 mm by 5.2 mm. One example (Figure 38 i) has a flat expanding tip, the only example of this tip form clearly encountered in the Cabin 1 nail sample. Maximum shaft measurements are 4.8 mm by 4.8 mm. Finally, one medial fragment has a maximum shaft diameter of 6.4 mm by 4.6 mm.

Forged or Cut Iron Nails.

Three nails (Figure 38 j) are at least provisionally placed in this indeterminate category. All are generally small (tacks) with rounded or modified (in two cases at least, rusted) shafts, and flattened, battered heads . One example is essentially straight and complete, with a length of 18.9 mm, shaft width 2.8 mm, and shaft thickness of 2.8 mm. The heads of two examples were 7.1 mm and 7.9 mm, by 6.6 mm and 7.1 mm, by 1.8 mm and 1.5 mm.

Machine-Cut Iron Nails

The category of machine-cut nails formed substantially the largest group at Cabin 1 and at the Buffalo Lake Métis site as a whole. This is not surprising, since machine nail manufacture had begun almost 100 years before the date of occupation.

Within the cut nail group a further division may be made between those nails with hand-formed heads (largely the rose-head and gable-head forms below) and those with machine-formed heads (largely the flat-head

variety). This division is not invariably clear because of head-battering through use. However, cut nails with hand-made heads in a sense constitute a transitional group between the hand-forged and the machine-made nail categories.

Rose-Head Cut Nails (Figure 38 k). Two examples are machine-made nails with hand-made heads that approximate the rose or four-facetted type. One of these is a virtually complete nail with a bend of approximately 70 degrees near the middle, and it has probably been clinched. It is 37.6 mm long and the shaft is 3.4 mm wide and 3.2 mm thick. The head is 6.0 mm long, 5.7 mm. wide, and 2.1 mm thick. A second example is slightly fragmentary at the tip and has a slight bend approximately one-third of the distance from head to present tip. Its present length is 40.8 mm, with shaft 3.8 mm wide and 2.9 mm. thick. The head is 6.4 mm long, 6.4 mm wide, and 2.9 mm thick. The point on the complete example, as on most cut nails, is squared and fairly blunt.

Gable-Head Cut Nails (Figure 38 l). Seven nails were provisionally placed in this head category. However, only two of these examples are highly typical, the remaining five having an essentially T-shaped, two-facetted head, but without the sharp penetrating edges designed to dig into the wood.

Four of the gable-head nails are probably close to complete, although two may have slight fragmentation at the tip. None of these are of the more typical group. Measurements obtained from the four examples are: length 48.8 mm to 66.5 mm, width of shank 4.0 mm. to 5.5 mm, and thickness of shank 3.2 mm to 5.3 mm. Heads are 6.5 mm to 9.9 mm long, 4.5 mm to 6.3 mm wide, and 1.9 mm to 3.2 mm thick. The two typical gable-head examples are both fragmentary, but the maximum length obtained was 57.6 mm. Shank measurement are 4.3 mm and 4.8 mm, by 3.6 mm and 3.7 mm, and head measurements are 7.6 mm and 8.3 mm, by 5.7 mm and 4.2 mm, by 3.7 mm and 4.2 mm. The third fragment has shaft measurements of 5.3 mm by 5.0 mm, and head measurements of 9.9 mm by 6.9 mm by 3.5 mm.

Flat-Head Cut Nails. This category subsumes several variations, but basically includes all those examples (with one exception) that appear to have machine-made heads. In some cases, the form of the head is difficult to determine owing to pounding or rusting. Two main sub-categories of this nail group were distinguished, based primarily on the inferred orientation of the clamp or vise used in the nail-heading procedure. A third category comprises nails that exhibit a distinct rounding of the shank, which makes this orientation difficult or impossible to determine. This third group may also exhibit considerable battering or rounding of the head, and in some cases the head may indeed have been hand-forged rather than machine-formed.

Group 1 (Figure 38 m, n). Nine virtually complete and one fragmentary examples fall within this category. The group is distinguished by the orientation of the vise or clamp used in the heading procedure. In these examples, the pressure used to hold the nail was exerted from two opposite sides in a direction equivalent to the plane of

the metal sheet from which the nails were cut (i.e. on the cut sides). This procedure has produced a generally rectangular rather than square head. When the nail is laid on the broader surface of the shaft (so that the taper is evident), a pinching of this shaft appears just below the head. A few examples also show a "bevelling or rounding" of the shaft below the head. Tips are generally squared or slightly blunted.

Size ranges for the nearly complete examples are: length 20.8 mm to 65.0 mm, width of shank 2.1 mm to 4.6 mm, thickness of shank 1.8 mm to 4.2 mm. Head measurements are: length 3.4 mm to 7.7 mm, width 2.8 mm to 7.3 mm, and thickness 0.5 mm to 2.8 mm. The shaft measurements of the fragment are: width 4.2 mm and thickness 3.4 mm. The head is 7.7 mm by 5.1 mm by 3.0 mm. Of the complete examples, three nails show slight bends, one to about 30 degrees and one very small example to 45 degrees. None appears to have been clinched.

Group 2 (Figure 38 o, p). The second group of flat-headed, cut nails is generally similar to the first group, all examples again presumably having machine-made heads. These nails differ, however, in the orientation of the clamp or vise used in the heading procedure. The direction of force lies at right angles to the plane of the metal sheet from which the nails were cut (i.e. on the uncut sides). When the nail is laid on the broader surface of the shaft, this shaft expands towards the head. Generally the head tends towards the square rather than the rectangular. A total of seven virtually complete examples and thirteen fragments is included in this category. Ranges of size within the complete group are: length 37.5 mm to 70.0 mm, width of shaft 3.2 mm to 5.2 mm, and thickness of shaft 2.2 mm to 3.4 mm. Head measurements are: length 5.4 mm to 8.6 mm, width 3.7 mm to 7.9 mm, and thickness 2.2 mm to 2.5 mm. Width range of the fragments is 3.4 mm to 5.7 mm, and thickness range 2.2 mm to 3.9 mm. Head measurements are: 5.8 mm to 8.6 mm by 3.4 mm to 7.9 mm by 1.0 mm to 3.3 mm.

Modification to the shanks of nails is apparent in a number of cases. Two examples show a slight and one an extreme (ca. 90 degree) curvature throughout their length, possibly the result of drawing. One has approximately a 20 degree bend, and a crack about one-third the distance from head to tip. This bend is fairly abrupt, and might be the result of clinching and then drawing the nail. One example is clearly clinched at approximate centre.

Group 3 (Figure 38 q, r). The third group of flat-headed cut nails includes those examples that are generally indeterminate as to the orientation of the heading clamp or vise. The shaft tends to be rounded, and the head tends to be battered and also rounded. A total of five nails are provisionally placed in this category, three of them essentially complete and two fragmentary. All are quite small. Ranges within the three complete examples are as follows: length 17.5 mm to 31.9 mm, width of shank 2.6 mm to 3.2 mm, and thickness of shank 1.9 mm to 2.9 mm. Head length is 5.7 mm to 8.1 mm, width 5.0 mm to 7.4 mm, and thickness 1.0 mm to 1.4 mm. Shaft widths of the fragments are 3.2 mm and 3.6 mm, and thicknesses 2.9 mm and 3.1 mm. Head lengths are 7.7 mm and

8.1 mm, widths are 7.1 mm and 7.4 mm, and thicknesses 1.2 mm and 1.3 mm. Modification of these nails includes two cases of slight bending or twisting from approximate middle, probably not clinching, and one case of a sharp bend about three-quarters of the distance from the head to the tip. This second modification probably represents a clinch.

Cut Nail Fragment with Pounded End (Figure 38 s). The head of one cut nail fragment has apparently been removed, and the shaft subsequently pounded into the wood, since a portion of the thinned shaft has been bent over and flattened, forming what appears to be a new head. Length is 35.7 mm, width of shank 3.3 mm, and thickness of shank 2.2 mm. Head is 4.4 mm, by 3.7 mm, by 1.0 mm. The example is slightly bent throughout as though from drawing.

Cut Nail Fragments. In addition to the fragmentary nails described within various of the above categories, many were recovered that can only be classified as cut nails. Seventeen of these may be tip fragments, most quite flattened at the distal end, and five are apparently medial fragments. One of the latter group is distinctly rounded and has a bend that might be the result of a clinch. Four tips show distinct bending, and three at least may have been clinched, but two of these are broken near that point. Shafts generally seem to fall within the range of complete or classifiable examples, and consequently no measurements are given here (See Table 11, Appendix III, however). One unusually large shaft, however, is 7.4 mm wide and 5.2 mm thick.

Unidentified Fragments. Three additional unclassifiable fragments might be nails, although they could have had other functions. One of these has a chisel-like tip.

Miscellaneous Hardware

Iron Wire (Figure 38 t). One example of ferrous metal wire was recovered. The wire is 4.0 mm in diameter and has been bent into a V-shaped form, so that only an approximate length of more than 61.7 mm was obtained. The ends are somewhat facetted and bruised and may have been cut.

HOUSEHOLD, BUSINESS, AND PERSONAL MAINTENANCE

Earthenware

All of the ceramics from Cabin 1 appear to be earthenware rather than stoneware or porcelain. Decorated examples are patterned either by transfer-printing or occasionally stamping or painting, all apparently underglaze. Vessels represented appear to be large cups and/or small bowls along with plates or saucers. Unfortunately, no makers' marks were found on any of the sherds, but many appear to be from the Copeland factories in Stoke-on-Trent, Staffordshire, Great Britain. No complete or nearly complete vessels were recovered. For a general typological

discussion of ceramics, and a much larger range of vessel forms and patterns, the reader should refer back to Chapter IV. In the present section, because of the smaller number of examples, sherds are described by pattern rather than reconstructed vessel form.

Plain White Glazed Earthenware.

One relatively large fragment, made up of a rim and body sherd, and three additional body sherds of white undecorated earthenware were recovered (Figure 39 a). The rim and body sherd suggest a small bowl or large cup with an outside rim diameter of about 90.0 mm and a height of greater than 70.0 mm. The maximum thickness of the body on this example is 6.3 mm; the minimum thickness throughout the sample as a whole is about 2.9 mm. The rim is slightly thinned from the inside to an approximate thickness of 4.0 mm (measurement taken just below actual rim). It is slightly flaring. The body expands outwards towards the base, which is missing. The three dissociated sherds show a similar curvature, but have a somewhat brighter white glaze. All examples have crazed surfaces.

Monochrome Underglaze Transfer-Printed Ware.

Copeland Earthenware with Blue Geometric "Turco" Pattern (Figure 39 b). Two relatively large rim fragments are made up of two and four main sherds respectively, along with some chips. In addition, one related rim and one body sherds were recovered. The vessel represented appears to have been a cup or small bowl, with sides tending to be straight but rounding off towards the bottom. Depth was at least 70.0 mm, but probably not much greater. The rim is slightly enlarged, slightly flaring, and rounded. The reconstructed outer diameter of this rim is about 107.0 mm. Thickness of vessel walls throughout the sample range between 3.0 mm and 3.4 mm and thickness of rim between 3.4 mm and 3.6 mm.

The pattern on this vessel consists of a Copeland transfer-printed underglaze geometric design named "Turco," with an earliest pattern number of D 4365, and dates ranging between 1865 and after 1882 (Sussman 1979a:222, Figure 234). The design occurs on both the outside and inside of the vessel. Color of the decoration in the Munsell scale is 2.5PB 6/8 (purple-blue).

On the outside, the design zone as a whole is a composite band 19.0 mm wide, running around the circumference just below the rim. This composite band is made up of three narrow bands composed as follows from top to bottom: (1) alternating white and blue dovetail figures in a band about 5.5 mm wide; (2) interlocking S-shaped figures in a band about 17.5 mm wide; and (3) dots within a linear band about 2.5 mm wide. Ornamentation on the inside consists of a single band the same as number 1 above.

Copeland Earthenware with Blue "Grapevine" Pattern (Figure 39 c, d). One rim sherd, three body sherds, and one chip with glaze on only one surface were recovered. Sherds are too small to give a clear indication of the nature of the vessel or its size. Thickness range for

vessel body throughout the sample, however, is 2.8 mm to 5.0 mm. The slightly thinned rim is rounded but not flaring. A measurement taken just below this rim gave a value of 3.2 mm. The design is a transfer-printing of grapevines and appears on both outside and inside. However, leaves only may occur on the outside, leaves and grapes on the inside. Individual fruit in the clusters are light colored and measure about 6.0 mm in diameter. Color is 5PB 6/10. Sussman (1979a:237) dates this ware at later than 1847, but an "offical" name or pattern number is unknown.

Copeland Earthenware Plate with Blue Transfer-Printed "Beverly" Pattern (Figure 39 e, f). Two rim and body fragments and one body fragment were assembled from twelve original sherds. Together, these may represent parts of a single plate with a weak ring base and a two stage outcurving cross-section. The rim is slightly thinned with shallow crenations, alternating long (about 31.0 mm) and short (about 25.0 mm). This rim averages about 4.0 mm thick, whereas body thickness throughout the sample as a whole ranges between 3.5 mm and 5.8 mm. The ring base is nearly 7.0 mm wide and about 1.0 mm high. Its reconstructed overall diameter would have been about 102.0 mm, and measurements from its margin to the rim suggest a plate diameter of about 205.0 mm.

The pattern occurs only on the inside of the plate and consists of a complex, transfer-printed design including leaves, flowers, scroll-work, and a bird. Along the rim is a chequered band about 3.0 mm wide, with alternating blue and white rectangles in two staggered rows. Color of the design is 7.5PB 4/8. This is the "Beverly" pattern manufactured by Copeland and Garret and W.T. Copeland, and dating between 1832 and the twentieth century. The earliest pattern number is 5136 (Sussman 1979a:56, Figure 56).

Earthenware with "Flowed" Blue Transfer-Printed Pattern (Figure 40 a). Two body sherds, one of which is split, and one chip were recovered. A similar rim sherd from Cabin 2 suggests a rather large cup or small bowl, but the present fragments are too small for meaningful reconstruction of diameter. Body thickness appears to range between about 3.6 mm and 4.2 mm.

The pattern apparently occurs on the inside of the vessel and consists of a variety of stem, leaf, and flower designs in dark blue, shading through a lighter blue into a very light blue background. This pattern appears to be B 772, manufactured by Copeland from approximately 1839 to after 1882 (Sussman 1979a:65, 66, Figures 65, 66). The color registers approximately 7.5PB 2/10. These sherds are probably the same as an underglaze design group from Cabin 2.

Polychrome Underglaze Sponge-Stamped Ware

"Portneuf" Earthenware with Brown and Green Flower Pattern (Figure 40 b). A single rim sherd provides a fairly substantial portion of the cross-section of a large cup or small bowl. The outside diameter at the lip appears to have been about 96.0 mm. Body thickness ranges between 2.9 mm and 3.8 mm. In section, the rim is nearly straight on the inside

and rounded from the outside, but no flaring is indicated. It is 3.1 mm to 3.4 mm thick. Below this rim, the sides contract slightly for about 48.0 mm, then expand, and then presumably contract again to the base. This enlargement near the base must have produced a somewhat bulbar or pear-shaped vessel.

The pattern is produced by sponge-stamping and painting, and it consists first of all of a single green painted band on both inside and outside, 2.0 mm to 2.5 mm wide, and running nearly 2.0 mm below the rim. On the outside of the vessel, the main pattern consists of stamped brown flowers (2.5YR 3/8) about 20.0 mm in diameter, and dark green leaves about 26.0 mm long (10G 3/4), resembling the "Rosette" pattern of Portneuf pottery.

An alternative, possibly more likely, source in terms of trade patterns, however, would be the eastern United States (see Chapter IV, page 96).

Sponge-printing made use of the "root" of the sponge, which was firmer and closer-textured than the remainder. This was cut to the desired pattern and used as a stamp dipped in color. The stamped vessel was subsequently glazed and fired (Finlayson 1972:54).

This sherd was found somewhat outside the confines of Cabin 1, and might have been dissociated from this household.

Polychrome Underglaze Painted Ware

Earthenware with Pink, Green, and Purple Leaf-and-Flower Design (Figure 40 c). Three sherds probably represent a plate, bowl, or saucer. Two of these sherds retain portions of the ring base and the third has the suggestion of curvature to this base. No rim sherds were recovered, so that the size of the vessel cannot be projected accurately. The curvature of the ring base, however, suggests that it was originally about 96.0 mm in outer diameter, so that the vessel as a whole would probably have been substantially larger. Thickness of the body sherds exclusive of this base ranges between 3.3 mm and 4.0 mm. the ring itself is approximately 5.0 mm wide and 2.0 mm high.

The pattern again appears to be underglaze, but with firmer outlines than that on the Portneuf pottery above. It is probably painted, but possibly stamped. It consists of broad, pink petals (7.5R 7/4), long, curving, medium green leaves (7.5GY 7/6), and purple flowers or other figures (7.5P 3/4). Surfaces are slightly crazed. All figures represented are apparently on the inside of the vessel. No specific pattern name or identification has been found for these examples, but fairly similar painted wares occurred at Fort Walsh (1875-1883) in the Cypress Hills (Hamilton 1979:29, 30, 32, Figure 47).

Glassware

Green Glass Bottle Fragment (Figure 40 d). Two sherds were joined to form part of the bottom of a small green rectanguloid glass bottle, probably a medicine bottle. Thickness of the bottle, the one obtainable dimension, is 25.4 mm. A minimum figure for height of 31.6 mm and for width of 27.0 mm were also obtained, but the former probably represents only a small portion of the original full height. The bottom of the

bottle shows no clear kick, pontle, or mold mark, and it is about 6.0 mm thick; nevertheless, the bottle was presumably mold-made. The sides range between 3.8 mm and 6.0 mm in thickness. On the side of the bottle, and running towards the bottom, with letters about 9.0 mm high, is the raised inscription RESS, presumably the end of a word. Although weathering may have chemically altered the color of the transparent glass, it presently appears as 5BG 8/2 (blue-green). The bottle does not floresce and is therefore perhaps made of a soda glass (Jones and Sullivan 1985:10-12).

Sheet Metal Artifacts

Perforated Metal Object (Figure 40 e). The actual function of this object is unclear, and it is placed in the category of domestic goods because of its resemblance to part of a colander or strainer. Made of a generally rectangular sheet of ferrous metal, probably tin-plated, its overall length is greater than 87.8 mm; width is 43.4 mm and thickness 0.6 mm. Twenty-five perforations, averaging 2.0 mm to 3.0 mm in diameter, are set in the pattern of an elongated diamond, with its long axis oriented to the long axis of the metal sheet. Three edges of this sheet are straight and appear to have been cut; the third is slightly curved and polished. Immediately adjacent to the two longer, parallel sides there are suggestions of the remains of soldering.

Tin-Plate Box Fragments (Figure 40 f) Five fragments may be broken or cut from the same object, perhaps a tin box of the type now used for biscuits. One example appears to represent the corner of such a box (Figure 40 f). The rim is folded in for about 7.5 mm to 7.7 mm, then folded back over itself for about 2.4 mm to 2.7 mm.

The rim metal is then cut at a 45 degree angle in the corner to fit against the similarly cut rim on the adjacent side. Length of the fragment as a whole is 57.3 mm, width 11.9 mm, and thickness of the metal up to 0.8 mm. The end opposite the corner is broken, but the side opposite the rim may have been cut.

The four additional examples are all heavily rusted, but appear to be generally similar, with width of the main rim 6.5 mm to 7.8 mm, and width of the secondary fold 2.0 mm to 2.6 mm. Three examples are broken at both ends; one is squared at both ends and may also have been cut from the original object at the base. Lengths of fragments range between 45.5 mm and 68.0 mm, widths between 8.4 mm and 9.2 mm. Two thicknesses obtained were 0.4 mm and 0.8 mm. None of these overall dimensions is particularly significant owing to the extensive rusting.

A further shattered example may be related to the above group in that it also appears to have a double-folded rim along one side, with widths of about 4.1 mm and 2.6 mm. The fragment is 27.7 mm long, 8.0 mm wide, and about 0.5 mm thick.

Possible Tin-Plate Box Fragments. Two additional rusted fragments of iron or tin-plate may also be from boxes.

Corrugated Tin-Plate Fragments (Figure 40 g). An approximately rectangular sheet of tin-plate has two parallel sides that have probably been cut, with the other sides probably broken. It is heavily rusted, but some tin shows through. Length of the fragment is 38.6 mm, width (perhaps the original dimension) 32.6 mm, and approximate thickness 0.7 mm. Four complete corrugations and half of a fifth occur from one end to the other (counting each concavity and each convexity as one corrugation).

A second example of tin-plate has only one complete corrugation, but others might have been flattened out. Present length is about 41.1 mm, width is 30.2 mm, and thickness (including rust) is about 0.8 mm. This sheet appears to have been regularly cut on two adjacent sides, broken or roughly cut on the other two. Function of this corrugated metal is uncertain.

Irregular Perforated Iron Sheet (Figure 40 h). A very small, generally rectangular, rusted piece of sheet iron has a single perforation a maximum of 6.0 mm in diameter. There appear to be two parallel sides, both of which, along with one end, may be cut. Overall dimensions of the fragment are 25.0 mm by 14.7 mm, by a minimum obtained thickness of 0.2 mm. Again, function is uncertain.

Tin-Plate or Iron Fragments. Four cuttings of what appears to be tin-plate were recovered. Three of these may have been part of a single object, perhaps again part of a tin box rim. In addition, two heavily rusted scraps of ferrous metal may also be tin-plate.

TRANSPORTATION

Horseshoe Nails

The two examples of horseshoe nails recovered (Figure 40 i) have thin, relatively wide shafts, with most of the taper near the tip. The heads are pentagonal in outline. Viewed in cross-section, one surface lies on the same plane as the shaft, while the other surface lies on an angle. Therefore, the head thickens to the crown, so that the cross-section is a right-angled triangle. The crown or striking surface is flat. Overall lengths are 50.2 mm and 53.3 mm, shaft widths 3.7 mm and 4.5 mm, and shaft thicknesses 2.4 mm and 2.1 mm. Heads have a length of 8.4 mm, widths of 4.0 mm and 4.9 mm, and thickness of 7.9 mm and 7.5 mm. One of the nails is bent at approximately a 45 degree angle about two-thirds of the distance from head to tip, and the other is irregularly bent and twisted throughout most of its length.

RECREATION AND SMOKING

Pipe Bowl Fragments

Two pipe bowl fragments were recovered, the smaller of which is a tiny chip. The larger example (Figure 40 j) is part of a rim of a

typical white clay trade pipe. The rim has been flat on top with fairly sharp edges. Present height of the fragment is 20.8 mm, but the original height of the bowl was probably about twice this dimension. Reconstructed outer diameter is approximately 25.0 mm. Thickness of the rim is 1.6 mm, and maximum thickness elsewhere is 2.0 mm. No clear evidence of stamping or decoration remains on the fragment, although similar pipes were often stamped with initials and scrollwork on the back of the bowl and with initials on the spur or foot below the bowl. No burning is clearly evident on the inside of the bowl.

DRESS AND ORNAMENTATION

Buttons

Classification of buttons, here and in subsequent descriptions, follows generally the system established in Chapter IV.

Group II, Shell Button.

Type 1 Shell Button (Figure 41 a). One shell button was obtained from Cabin 1. It consists of a plain disc of shell with two holes slightly over 1.0 mm in diameter set on either side of centre. These holes are about 3.0 mm apart from centre to centre and connected on one surface by a shallow thread groove. They appear to have been drilled. Diameter of the button is 11.8 mm and its thickness is 1.7 mm. The shell is probably marine.

Group III, Bone Button

Type 1 Bone Button Fragment (Figure 41 b). One surface of this sew-through button has been slightly convex; the opposite surface has had a raised and rounded rim about 3.3 mm wide, set off by an incised ring, producing a recessed interior or "well." Within this well there were presumably four perforations for the thread, but only two of these are presently evident. One perforation could be measured and indicated a diameter of 2.0 mm. The original diameter of the button as a whole was probably very close to the figure of 16.8 mm obtained on the fragment. Maximum thickness is 2.6 mm. This button may have been used on a coat.

Group IV, Metal Buttons

Type 2, One-Piece, Spun-Back Cast Buttons (Figure 41 c, d). This is a persistent class of artifact, virtually identical examples having been found in fur-trade sites dating to the end of the eighteenth century, seventy or more years prior to the estimated date of the Buffalo Lake Métis site. The two recovered examples consist of plain brass discs, slightly rounded on the edges, covered with a plating probably of tin or silver. In both cases a brass loop appears to have been set in the casting. Subsequently, the backs have been "spun" or reduced in thickness by a sort of lathing process that leaves characteristic

concentric striations. No stamping or decoration occurs on either example. Diameters are 20.7 mm and 22.7 mm; thicknessess exclusive of the loop or the conical base of the loop are 1.2 mm and 1.5 mm. The outer diameters of the loops are 5.5 mm and 5.4 mm.

Type 4, Variety a, "Birdcage" Brass Button (Figure 41 e). This button consists of a single thickness of brass, slightly recessed from a narrow raised rim on one surface, with a further recessed "well" or "birdcage" in the centre. This depression contains four relatively large, ca. 2.8 mm holes, evenly spaced in a square pattern. Diameter of the button as a whole is 17.1 mm; diameter of the "well," which appears as a dome on the reverse, is 8.0 mm. The average thickness is 1.0 mm.

On the obverse of this button, decoration consists first of all of an approximately 1.0 mm wide band of cross-incisions just inside the inner recess. A raised band around the outer rim produces the outer recessed area, which is again stamped with antique letters. The words "Double Ring" appear at the top and "Edge" on the bottom, separated by figures resembling spread fleur-de-lis. Letters are of variable height, but average about 1.5 mm to 2.0 mm.

The back of the button is again recessed very slightly approximately 1.0 mm inside the rim. Within this recessed area, a square is set with corners touching the rim, and with a fleur-de-lis placed at each corner.

Type 5, Decorated Hollow Two Piece Brass and Iron Buttons (Figure 41 f, g). One example (Type 5a, Figure 41 f) consists of a brass wafer crimped over a wafer of ferrous metal, which has extensively rusted. The cross-pin serving for attachment is brass on at least one surface, but there may have been a corresponding iron component on the opposite surface. Diameter of the button is 17.1 mm, and thickness obtained was 4.6 mm, although the latter figure has undoubtedly been exaggerated by rusting. The width of the outer band is 5.0 mm, and of the cross-bar about 2.5 mm. Decoration consists of a concentric band of probably stamped hatching, about 3.0 mm wide, just outside the perforation.

A second example of a decorated, two-piece button (Type 5d, Figure 41 g) is generally similar to the above, but ornamentation is more elaborate and includes a trade mark or motif. Diameter is 16.6 mm, thickness (with some distortion from rusting) 3.8 mm, and width of the outer segment 5.6 mm. The cross-bar is about 2.0 mm wide. Decoration consists first of all of a single incised concentric band immediately around the perforation. Around the brass button surface outside this incision is lettering antique in print style, with the appearance of engraving. Letters are about 1.5 mm to 2.0 mm high. The words "Trade" and "Mark" are separated by crossed long ovals, and begun and terminated by ornamental S-shaped floral motifs. All the above is surmounted by the engraved outline of a halberk or axe.

Type 5? Plain, Hollow Two-Piece Brass Button (Figure 41 h). The single example recovered is doughnut-shaped, with an outer segment about 4.2 mm wide and a cross-band of brass about 1.5 mm wide bridging the aperture. Diameter of the button is 12.9 mm and thickness 2.9 mm. The button is formed from two shallow hemispheres, the one half crimped over

the other, so that the seam forms a circle just inside the perimeter of the back surface. This may be a jacket or trousers button, and might have been cloth-covered.

Beads

Small Drawn Tubular Beads

Small Blue Glass Beads (Figure 41 i). Two small blue glass "seed" beads are 1.1 mm and 1.4 mm long, 1.4 mm and 1.7 mm in diameter, with perforations of less than 1.0 mm. These beads are rounded at the ends. Color is about 2.5B 5/4.

Small Pink Glass Bead (Figure 41 j). One bead is similar to the above, with length of 1.4 mm and diameter of 1.5 mm. The aperture is less than 1.0 mm. Color registers about 5RP 7/6.

Large Wound Bead

Large Amber Glass Bead (Figure 41 k). The single large bead obtained is generally round, but with a slight taper to one end. It is probably wound, although no positive evidence can be seen. Length is 8.9 mm, diameter 10.1 mm, and maximum aperture 3.4 mm. The color appears to be 7.5YR 5/8.

NATIVE INDUSTRIES

Chipped Stone

One small flake of chert or mudstone, 21.9 mm by 13.3 mm by 5.5 mm, appears to have been split from a small water-rounded pebble by bipolar flaking. It is not clearly related to the Métis occupation, and may simply have been incorporated in the cabin fill.

FAUNAL MATERIALS FROM CABIN 1

Fragments of bone or complete long bones were scattered throughout the woods in the area around Cabin 1 and in various other areas of, or adjacent to, the Buffalo Lake Métis Site. Since cattle have been grazing in these woods for a number of years, it is possible that some of this bone may be recent and of domesticated animals.

In the excavations of Cabin 1, bone consisted largely of unidentifiable large mammal bone fragments, many of which were probably bison (Bison bison). Long bone and rib fragments predominated with burning, cutting, and tooth marks evident on some of the former, cutting on some of the latter. In addition, a few unidentified small mammal bones were found. Table 12, Appendix III, enumerates the identifiable and unidentifiable bone and indicates its distribution. Further detailed observations are included in Brian Kooyman's analysis, Appendix II.

In the identified category are snowshoe hare (Lepus americanus; two individuals minimum) and muskrat (Ondatra zibethicus). Identifiable bison bones were found on the surface, but not directly associated with the cabin. Identified birds were Gadwall (Anas strepera) and Trumpeter Swan (Olor buccinator), and a species of the order Passeriformes of crow size or larger. Fish of unidentified species were included.

DISTRIBUTIONS IN CABIN 1

Distribution of artifacts and faunal material is represented in Tables 11 and 12, Appendix III. This distribution was plotted on the ground plan of Cabin 1. The cabin as a whole and its immediate environs were divided into five sub-areas, the boundaries of which were assigned fairly arbitrarily. These areas were designated: Cabin 1 General, Cabin 1 West, Feature 1, Fireplace, Feature 2, Ash Concentration, and Cabin 1 East (see Table 11, Appendix III).

Grid locations are provided in two different ways. A reference such as 15S, 0E (15 feet south, 0 feet east of arbitrary 0 point) represents a whole square (designed by its northwest corner), and generally an artifact found in the screen or in disturbed material. A reference such as 12.5S, 1.45E, however, represents a specific measured location, and an artifact found in situ.

Depths were recorded for most artifacts, but because of the general shallowness of the site, these are not included here. Generally, it was assumed that artifacts in surface deposits had not moved very far from their original location.

Artifacts and bone fragments were much more prevalent in the western portion of the cabin. To some extent, this may reflect the more intensive excavation in the area, and greater recent disturbance in the eastern part. However, the one clearly defined fireplace occurred in Cabin 1 West and may have constituted a primary focus of activity by the residents.

A review of the ground plan revealed one or two possibly significant distributions of specific artifacts. Cut nails were surprisingly numerous in the Ash pit, suggesting perhaps that building timbers had been burned in the fireplace. Earthenware was much more prevalent in the west "room" of the cabin, and in the Ash Concentration, but again this may be a factor of the greater prevalence of artifacts in general in these areas. Buttons and beads, although numbers were small, appeared relatively well represented in Cabin 1 East, suggesting a possible specialized function for this area.

Bone fragments were again much more common in Cabin 1 West, where they were scattered throughout much of the floor area. Surprisingly, they were absent in the Ash Concentration, where calcined bone chips might have been expected.

Distribution of artifacts and bone within Cabin 1 indicates both "primary" disposal through loss or casual dispersal (see Schiffer 1977:19), within the cabin interior, and "secondary"(?), purposeful disposal in the Ash Concentration. Presumably further "secondary" disposal, particularly of large bones, may have taken place outside the

excavated area, perhaps at some distance, but this is not presently documented. There is no indication of disposal within an abandoned structure, which was a widespread procedure as indicated by Schiffer (1977:24) and Carrillo (1977:79), and documented in our own excavations of fur trade sites and possibly of Cabin 2. Nor is there evidence of "de facto" refuse directly reflecting abandonment behavior (Schiffer 1977:24).

CABIN, 1 DISCUSSION

Cabin 1 appears to be part of the general complex of Métis Hivernant (winterer's) cabins at Buffalo Lake, determined through archival sources to date probably between 1872 and 1878. Structural evidence, artifacts, and the nature of the faunal materials (Kooyman, Appendix II) are generally consistent with this ethnic association and this dating. Although certain classes of artifacts, particularly forged nails and plain spun-back brass buttons, might suggest a much greater antiquity, it is clear that the former at least persisted long after a new technology of machine manufacture was available. Forged nails in fact are still made today for specialized uses.

No functional specialization is suggested for the cabin, since no class of artifacts is overwhelmingly dominant, nor were structural peculiarities noted. It is assumed to have served as a general residence, at least on a seasonal basis.

A floor area of approximately 400 square feet (37.16 m^2) is represented, probably divided into two units of approximately 200 square feet (18.58 m^2) each. The whole would compare, then, with a very small modern bachelor apartment, and would be slightly smaller than the first and second house-chapels at Pirmez Creek and Elbow River, which were likely about 50 square metres in area (John Day, personal communication).

This size and the estimated external dimensions of ca. 30 feet by 14 feet (9.14 m by 4.27 m) are essentially consistent with those of other excavated Métis cabins. At the Kajewski site in the Cypress Hills, Elliott (1971: 25-26) describes a two-room cabin with each room 15 feet by 14 1/2 feet (4.57 m by 4.42 m), apparently almost identical to Cabin 1 at Buffalo Lake. Although the other investigated cabins at the present site were somewhat more square than Cabin 1, the estimated dimensions would produce generally consistent interior areas. Cabin 3 was approximately 24 feet by 15 feet or 360 square feet (7.32 m by 4.57 m or 33.44 m^2); Cabin 4 was approximately 24 feet by 24 feet or 576 square feet (7.31 m by 7.31 m or 53.51 m^2); and Cabin 5 (with hypothesized extension) was approximately 27 feet by 18 feet or 486 square feet (8.23 m by 5.49 m or 45.15 m^2). The placement of the fireplace in Cabin 1 would also seem generally consistent with that in other Métis structures investigated.

Artifact and bone distribution, particularly the scattering of materials in Cabin 1 West, might suggest that the cabin had an earth floor. This hypothesis would be supported by the lack of clear structural remains within the outline of the sill logs, and perhaps by the apparent lack of internal cellars or storage pits. The contrary

hypothesis of a wooden floor, however, might be supported by the occurrence of gable-head or clasp nails, used typically for flooring. A third possibility would be partial flooring. At the Kajewski site in the Cypress Hills, partial floor platforms seem to have been built in front of the fireplace and across from the door that was centred in the opposite wall (Elliott 1971:26).

Relative scarcity of artifacts suggests that Cabin 1 East might have served as a storeroom or other sort of annex to the unit clearly containing the fireplace. Elliott (1971:85), for example, noted a reference to the inclusion of both living quarters and a meat house under one Métis roof. However, any functional interpretation here is speculative, and, as indicated above, the western unit may have had a fireplace as well.

Documentary evidence indicates that Métis occupation of structural units was sometimes intensive. Certainly Cabin 1 could have accomodated a nuclear family and perhaps an extended family.

The duration of residence is unclear, although we might assume that it took place at least in association with the season of the bison hunt. In Cabin 1, however, there was no evidence of seasonality based on rejuvenation of fireplaces or storage pits, as in Cabins 3 and 4, or at the Kajewski Métis site in the Cypress Hills (Elliott 1971:31, 43-45).

Similar evidence might be obtained in Cabin 1, however, by more detailed excavation of the Fireplace in the west unit. Such excavation was proposed in 1983, but was not approved at that time by the Archaeological Survey of Alberta.

CHAPTER VI

THE ARCHAEOLOGICAL DATA, CABIN 2

Cabin 2, on the crest of the ridge previously described and overlooking the pond or slough, was even less clearly defined than Cabin 1 (Figures 4, 42 a, b). The basic surficial evidence in this locality (Figure 43) consisted of two rock piles and three depressions, the latter generally forming a triangle, with the largest one, approximately 10.0 feet (3.05 m) in diameter, on the east, and the smaller ones, approximately 5.0 feet and 7.0 feet (1.52 m and 2.13 m) in diameter, on the west.

EXCAVATIONS AT CABIN 2

Excavation methods employed at Cabin 2 are described in the section on Cabin I, Chapter V and in addition correspond generally to those set forth in Chapter I.

Although some excavation was conducted in all three of these depressions, only the one on the southwest was completely cleared (and is referred to subsequently as Feature 2, the Refuse Pit). No cribbing or other structural remains were encountered here, nor in either of the other depressions. Although rock and ash were concentrated in the bottom of the largest depression (which was also one of the larger pits on the site), they may have fallen in from a badly disturbed fireplace on the northern lip. As in the case of Cabin 1, Cabin 2 had been subjected to some recent digging by unknown persons.

THE FEATURES OF CABIN 2

The Wall Lines

Excavations at Cabin 2 were again concentrated initially on determining wall lines and a general indication of the form and orientation of the structure (Figure 43). (All directions that follow are approximate, but may be adjusted by consulting Figure 43.) Evidence of two long parallel walls was again obtained. These walls lay to arbitrary (grid) north and south of the smallest depression (Feature 2, the Refuse Pit). They also appeared to be associated with the rock pile (Feature 1, the Fireplace). If projected to the east, they would have enclosed the largest depression and the disturbed rock concentration as well. However, one middle-sized depression would still lie outside them to the north.

Again, wood was very poorly preserved. On the north, the broken line of timber presumed to represent the building sill (Figures 43, 44 a) stretched for about 10.5 feet (3.20 m), with a maximum width of 0.5 feet

(15.24 cm). On the south, and farther to the east, the only indication of a corresponding sill (Figure 43) was the depression between low clay ridges, very much like the ones noted at Cabin 1. The distance between these hypothesized sills was approximately 13 feet (3.96 m), or almost exactly the same as the indicated width of Cabin 1.

No positive east and west wall lines were discovered. The sill on the north began about 3.0 feet (91.44 cm) west of the smaller enclosed depression and ran virtually into the rock pile. The sill depression on the south began approximately 8.0 feet (2.44 m) farther east than the north sill and ran for approximately 6.5 feet (1.98 m). The minimum overall length of building indicated, then, would be 14.5 feet (4.42 m). The actual orientation of the cabin's short axis would be approximately 25 degrees west of grid north, approximately 90 degrees west of magnetic north, or approximately 66 degrees west of true north. This was not very close to the orientation of Cabin 1, located about 150 feet (45.72 m) to the (true) east-northeast.

A hypothetical northwest corner occurred at approximately grid point 5.0 south, 6.0 west, defined only by changes in the character of deposition that here formed an obtuse angular pattern. This hypothetical corner was approximately 1.0 feet (30.48 cm) beyond the end of the north sill (?) timber and 2.5 feet (76.20 cm) beyond a hypothetical post on the north wall line. If a line were taken south from this corner along the short (?) axis of the cabin, a concentration of burned chinking and ash would be encountered just outside its intersection with the projected south wall line. Such concentrations of fired chinking sometimes indicated building corners (see Losey et al. 1978:169), and hence the locality of grid point 17.0 south, 0.4 west might consitute the southwest corner of the cabin. If, alternately, the sill end on the north, or the post, were taken as the northwest corner, the west wall would be moved east by about 1.0 feet (30.48 cm) or 2.0 feet (60.96 cm) respectively.

Cross-timbers running arbitrary north-south were suggested in four localities of Cabin 2 (Figure 43), but they were nowhere continuous, and in all cases they might have represented internal joists or flooring rather than the sills for walls or partitions. Measuring from the westernmost point at which the east-west timber hypothetically marking the north wall could be plotted, they lay at points about 8.0 feet (2.44 m), 9.5 feet (2.90 m), 12.0 feet (3.66 m), and 17.0 feet (5.18 m) east.

The first two of these timbers appeared near the north wall (the second actually intersecting it), and to the west of the rock pile. The third timber lay near the south wall, and if it were projected north would have run into the rock pile. The fourth discontinuous timber lay north of the approximate middle of the structure, and if projected north and south would have run between the rock pile on the west and the largest depression on the east. The ground throughout this area, and particularly to the east towards the large depression, was irregular and sloping to the east and south, and this last timber may have slumped. Alternately, it might have constituted the west wall sill of a structure to the east of the one described.

The cross-timber that appeared to run into the rock pile or Fireplace on the south edge may have constituted the east wall or partition of the cabin. This suggestion is supported to some extent by the occurrence of a patch of burned mud-plaster chinking just outside the

corner that would be formed by the southward projection of this timber and the eastward protection of the south wall trench. Hypothetical corners would occur, then, at grid point 1.6 north, 7.8 east on the northeast and 10.5 south, 13.5 east on the southeast.

Again, if this hypothesis is correct, the timber remains to the east of the line between these two points might have belonged to a second cabin (or room) associated with the largest depression. The west enclosure, then, as defined by this line and the hypothetical west wall, would have been approximately 13 feet (3.96 m) north-south by 15 feet (4.57 m) east-west, or 195 square feet (18.12 m^2). If alternative northwest corners are adopted, the east-west dimensions would be reduced to 14 feet (4.27 m) or 12.5 feet (3.81 m) respectively. Interestingly enough, the first figure is identical to the length of the hypothetical west unit in Cabin 1.

As in the case of Cabin 1, no indications of doorways were found in Cabin 2, and only one hypothetical post (Figure 43), approximately 5.6 inches (14.22 cm) in diameter, on the north wall line near the northwest corner. This post might have been just inside the wall line, however, and again it seems probable that the cabin was built on a single rectangle of sill logs. No additional direct evidence of structure, such as the form of cabin corners, was obtained. However, burned mud plaster chinking suggests that the log walls were "mudded." Otherwise, and as in the case of Cabin 1, limited indication of fire was seen. Burnt wood chips concentrated particularly along the east "wall" of the west unit may have been related to the nearby Fireplace. This lack of burning is perhaps odd, since more than one large fire is reported to have burned in the Buffalo Lake area since the abandonment of the Métis camp. However, as suggested for Cabin 1, and as supported to some extent by data from fur trade sites, such fires may not have extensively affected the sub-structures.

Feature 1, The Fireplace

Apart from the width suggested, dimensions of the cabin or cabins represented are uncertain. Again, a clue might be obtained from the Fireplace (Figure 43), but the main rock pile in Cabin 2 was even less well defined in its orientation than the similar feature in Cabin 1, and in addition its excavation was not completed.

Rocks in the Cabin 2 Fireplace were again sub-angular and apparently of local derivation. The approximate overall size of the rock concentration, discounting a few outliers, was 7.0 feet (2.13 m) north-south by 4.0 feet (1.22 m) east-west, again comparable to the fireplace in Cabin 3. It lay near, and presumably may have abutted on, the north wall. The sudden slope to the east around and into the large depression would suggest that a partition or end wall might have occurred immediately to the east as well, in which case the feature would have been a corner fireplace. Although the present alignment of the rocks might suggest an opening on the east, such an opening would be highly unlikely if the partition occurred here. Perhaps the matter could be resolved by further excavation, which was proposed in 1983, but not approved at that time.

Feature 2, The Refuse Pit

The small depression in the southwest portion of Cabin 2 (Figures 43, 44 b) was entirely excavated, and proved to constitute a simple pit approximately 7.0 feet (2.13 m) east-west and five feet (1.52 m) north-south. Maximum depth was about 2.0 feet (60.96 cm). This pit seems to have been more or less centred in the hypothetical western portion of the Cabin 2 structure. It was approximately oval in outline, without any apparent wood cribbing, lining, or lid (although at least the last of these might be suggested by the included nails). Grid co-ordinates obtained, in a clockwise direction, were approximately as follows: 5.2 south, 2.4 east; 5.7 south, 6.6 east; 9.5 south, 4.7 east; 9.2 south, 0.4 east.

If the dimensions of the room postulated above are accurate, this pit might have occupied a substantial portion (about one-fifth) of its original interior. Again there is no direct evidence that it was floored over as a cellar or storage compartment, but given its location, and the apparent occurrence of such a "lid" in Cabin 5, this would be probable.

Eventually, and perhaps subsequent to use as a cellar or storage pit, possibly even following the abandonment of the cabin, this feature seems to have become a slop pit. The loamy contents differed from the surrounding soil, and artifacts found within the pit appeared to be stratified according to weight, suggesting that the contents were largely liquid at the time of their deposition.

THE ARTIFACTS OF CABIN 2

Method of Presentation

The artifact descriptions that follow will refer back to some extent to the descriptions for Cabin 3.

Provisionally, the contents of the Refuse Pit in Cabin 2 are described separately from the general material associated with the cabin. In part, this is because the contents of this pit would seem to constitute refuse deposition over a relatively short period of time, perhaps during a single season at most, and consequently a "tight" chronological-occupation unit. There is no evidence for re-use or rejuventation of this feature. Secondly, it is possible that this deposition occurred in fact after Cabin 2 was abandoned (see p. 166), in which case the contents might relate to a different household unit.

The two "lots," however, are combined in Table 13, Appendix III, where measurements and distributions of individual artifacts are also given. Faunal materials are also combined in Table 14, Appendix III.

HUNTING

Ignition Parts and Ammunition

Round Ball (Figure 45 a). A single large lead round ball recovered is of the approximate size used in a trade gun. It is 15.0 mm in

diameter, or of approximately 60 calibre. Weight of the ball is 19.73 grams or 305 grains.

Lead Shot (Figure 45 b). Thirteen examples of smaller lead shot range in diameter between 3.6 mm and 4.3 mm. Of these, eight are in the 3.6 mm to 3.7 mm category, or approximately number 3. Three of the remaining large examples are slightly flattened and may originally have been of the same group. Only two shot, then, are clearly over 4.0 mm (4.1 mm and 4.3 mm) or about number 2 (Logan 1959:171; Greener 1910:612).

CONSTRUCTION, BLACKSMITHING, AND CRAFTS

Construction hardware in Cabin 2 was largely limited to nails, most of which were of the machine-cut variety.

Forged Iron Nails

Forged Nail Fragments (Figure 45 c). Two fragments of large forged nails or "spikes" are missing the heads, and therefore cannot be further classified. One of these fragments has a flat expanding tip, the only example of this tip form encountered in Cabin 2. Maximum shaft measurements are 6.9 mm by 6.6 mm, and both have been large nails or "spikes."

Forged or Cut Iron Nails

Two nails (Figure 45 d) are provisionally placed in this indeterminate category. Both are small (tacks) with rounded, battered heads, and some rounding on the shaft of one example. One nail is complete and straight with a length of 20.9 mm, shaft width of 2.4 mm, and shaft thickness of 2.1 mm. The head is 6.5 mm by 6.2 mm by 1.0 mm. The fragment has a shaft width of 3.7 mm and shaft thickness of 3.2 mm. The head is 8.1 mm long, 7.0 mm wide, and 1.7 mm thick.

Machine-Cut Iron Nails

Flat-Head Cut Nails. This category basically includes all those nails (with one exception) that appear to have machine-made heads. The criteria for distinguishing sub-groups are explained in the description of Flat-Head Cut Nails from Cabin 1.

Group 1 (Figure 45 e). Five virtually complete and four fragmentary examples fall within this category.

Size ranges for virtually complete examples are: length 22.6 mm to 57.7 mm, width of shank 2.9 mm to 4.9 mm, and thickness of shank 2.9 mm to 4.5 mm. Head measurements are: length 4.8 mm to 7.3 mm, width 3.9 mm to 5.6 mm, and thickness 1.1 mm to 2.1 mm. Shaft measurements within the fragmentary group are: width 3.5 mm to 5.4 mm and thickness 3.0 mm to 4.1 mm. Heads are 5.6 mm to 9.1 mm by 3.5 mm to 6.6 mm by 1.0 mm to 2.8 mm. All virtually complete examples are essentially straight, although one may have been bent and broken slightly near the tip.

Group 2 (Figure 45 f). A total of eight virtually complete examples and 10 fragmentary examples is included in this category. Ranges of size within the complete group are: length 24.1 mm to 75.4 mm, width of shaft 2.6 mm to 5.2 mm, and thickness of shaft 2.1 mm to 3.4 mm. Head measurements are: length 5.6 mm to 8.0 mm, width 4.0 mm to 7.6 mm, and thickness 1.1 mm to 2.5 mm. Shaft measurements of fragments are: width 3.3 mm to 6.0 mm and thickness 2.6 mm to 4.0 mm. Head measurements are: 5.9 mm to 8.4 mm by 4.4 mm to 7.7 mm by 1.4 mm to 2.5 mm.

Modification of the shanks of nails is apparent in several cases. One example shows a slight and one a considerable (ca. 45 degree) curvature throughout the length, possibly the result of drawing. Three have approximately 20 degree bends slightly on the tip side of centre. Two additional examples show similar slight bends about two-thirds to three-quarters the distance from head to tip. This bend is fairly abrupt and might be the result of clinching and then drawing the nails.

Group 3 (Figure 45 g). Three nails were provisionally placed in this category, all essentially complete, although one shaft is split. Size ranges are: length 38.9 mm to 63.4 mm, width of shank 2.4 mm to 4.5 mm, and thickness of shank 2.3 mm to 3.8 mm. Head length is 6.1 mm to 7.2 mm, width 5.4 mm to 6.4 mm, and thickness 0.9 mm to 2.4 mm.

Modifications of these nails includes two cases of curving to about 20 degrees, perhaps owing to drawing or to deflection during the driving. The third example has been sharply bent just below the head, and the shaft has split along a clearly defined plane. This plane would be parallel to the plane of the metal sheet from which the nail was cut, suggesting that this sheet may have been laminated from two thinner sections.

Cut Nail with Reinforced Head (Figure 45 h). A single example is unusually large and has a head generally square in outline with slightly rounded sides. A circle fitting within this square appears in stamped relief on the crown of the nail. This may be a provision for reinforcing the nail, a procedure sometimes followed in making heavy-duty nails, for example some of those used in fencing. Below this head, the shaft is clearly bevelled, as it is on some of the cut nails previously described. Length of the nail is 88.3 mm, width of shaft 7.1 mm, and thickness of shaft 5.0 mm. Head length is 10.2 mm, width 9.4 mm, and thickness 3.5 mm.

Cut Nail Fragments with Pounded Ends (Figure 45 i). The heads of three small nails (tacks) have apparently been removed, and the shafts subsequently pounded into the wood, so that a portion of the thinned shaft has been bent over and flattened to form what appears to be a new head. One and possibly more of these nails may be forged rather than cut. Lengths are 19.8 mm to 21.8 mm, widths of shank all 2.0 mm, and thicknesses of shank 1.4 mm to 1.6 mm. "Head" measurements are probably of little significance. One example is slightly bent throughout, the others essentially straight.

Cut Nail Fragments (Figure 45 j). In addition to the fragmentary nails described within various of the above categories, nine were recovered that can only be classified as cut nails. Six of these are tip fragments and three are medial fragments. One of the former group is slightly curved and one has a ca. 30 degree bend that might be the result of a clinch. Shafts usually seem to fall within the range of complete or classifiable examples, and consequently no measurements are given.

Two additional unclassifiable objects might be a nail fragments, although one is rather thin.

Key

A single ward lock key for a door (Figure 45 k), made of ferrous metal, was recovered in Cabin 2. Overall length is 92.3 mm, and width at the ring or loop is 28.3 mm and at the bit 17.1 mm. The maximum thickness of the shaft is 9.6 mm. The shaft has three raised encircling bands near the ring end and an expansion and one raised band near the bit. The bit is single, but shaped three-dimensionally. No other evidence of locks was found in Cabin 2 or elsewhere in the Métis site. Closely comparable keys, however, were found at the Saskatchewan site of Fort Pelly 1, dating from 1824 to 1856 (Klimko 1983:242, Figure 95 a).

Iron Wire

One very small example seems to be a short section of very thin ferrous metal wire, 11.5 mm long and 1.2 mm in diameter. It is heavily rusted, so that the diameter may be exaggerated.

HOUSEHOLD, BUSINESS, AND PERSONAL MAINTENANCE

Earthenware

Again, the basic typology is adapted from the Chapter III description of Cabin 3 examples.

Plain White Glazed Earthenware.

One small rim fragment and one perhaps related body sherd were recovered (Figure 46 a). No decoration is indicated, and sherds are not large enough to suggest vessel form. Maximum thickness obtained is 4.4 mm. The rim is slightly thinned from the outside to an approximate thickness of 4.0 mm.

Monochrome Underglaze Transfer-Printed Ware

Earthenware with "Flowed" Blue Transfer-Printed Pattern (Figure 46 b, c). One rim sherd and one body sherd were recovered. The rim sherd suggests a rather large cup or small bowl, but the fragment is actually too small for meaningful reconstruction of diameter. Body thickness appears to range between about 3.5 mm and 5.5 mm, and thickness of the

slightly reduced, rounded, but apparently unflared rim is a maximum of 4.1 mm.

The rim fragment has a pattern on both outside and inside consisting of a series of parallel, alternating light and dark blue zig-zags. This pattern is contained by horizontal lines, the upper of which lies along the lip of the rim. The width of the band on the outside from the rim down is 10.4 mm. Below it, on the outside of the sherd, is a light blue band (actually the ground) about 2.0 mm wide, and again below this is a dark blue, solid narrow band about 1.0 mm. wide.

This rim may represent an unnamed pattern manufactured by W. T. Copeland and illustrated in the 1882 catalog. The earliest pattern number is B 772, and the ware may date between 1839 and after 1882 (Sussman 1979a:65, 66, Figures 65, 66).

Based on the probably similar body sherd, the pattern below the band apparently occurs on the inside of the vessel, and consists of a variety of stem, leaf, and flower designs in a dark cobalt blue, shading through a lighter blue into a very light blue background. The design is a "flowed" underglaze transfer-print, with color registering approximately 7.5PB 2/10.

Glassware

Light Green Glass Bottle Fragments (Figure 46 d). One rim and three joined body sherds of a nearly clear, very light green, non-leaded (non-florescing) glass were recovered. These fragments appear to have been burned or heavily weathered, but the rim sherd indicates a bottle or jar with reconstructed outside lip diameter of about 76.0 mm. The rim or finish appears to have been formed by folding out the lip of the glass and turning it down on the outside. The width of this rim is 5.0 mm and thickness 4.0 mm to 4.4 mm. Thickness throughout the body sherds ranges between 2.8 mm and 3.4 mm.

Window or Mirror Glass Fragments (Figure 46 e). Ten sherds are essentially flat, ranging between 9.9 mm and 44.8 mm in length, 8.5 mm and 27.1 mm in width, and 1.6 mm and 2.6 mm in maximum thickness. One fragment, however, has the remains of a right-angle bend on one edge, suggesting that it might have been part of a straight-sided bottle. No edges are clearly straight or cut. Many of these sherds could have been either window or mirror glass, but since no evidence of silvering remains (as it does on some examples recovered from early Alberta fur trade sites), the former is perhaps more likely. Color varies from light green to nearly yellow, but it is too light to be reliably classified.

Glass Fragments. Two tiny glass sherds are too small to be reliably placed in either of the above categories.

Sheet Metal Artifacts

Iron Strapping (Figure 46 f, g). Two iron bands are generally similar in form, and might have been straps for wooden boxes or trunks or

possibly hoops for small barrels or kegs. The first example (Figure 46 f) is very approximately 330.0 mm long, an average of 24.3 mm wide, and 0.9 mm thick. Three perforations and part of a fourth remain, all close to the edge of the band, and regularly separated by about 110.0 mm. The perforations themselves are a fairly regular 3.8 mm in diameter. The band is broken through a perforation at one end and cut, probably with some subsequent squaring, at the opposite end. Width is quite regular throughout the length. The perforations are quite round, and although they are probably punched, some of the raised edges on the undersurface may have been subsequently removed by filing. This band was found to the southeast of Cabin 2, and might be dissociated from that household.

The second example (Figure 46 g) is about 335.0 mm long, 21.8 mm wide, and 1.2 mm thick. The edges are more rounded, but slightly raised on the bottom. Five and one-half perforations occur, running down the approximate centre of the band, and separated fairly regularly by about 55.0 mm. The perforations themselves are about 4.0 mm to 5.0 mm in diameter, but somewhat less regular than those on the preceding example. One end of this band has been irregularly broken at the perforation; the other end has been bent and broken straight across.

Tin-Plate Box Rim Fragment (Figure 46 h). This object, apparently made of tin-plate, is generally rectangular in outline. It may be cut along the parallel side opposite the rim, and it appears to be broken on the ends. The rim itself is folded to the outside, about 2.4 mm to 2.6 mm wide, and 0.8 mm thick. Present length of the fragment is 38.1 mm, width is 16.4 mm, and thickness of the metal is 0.2 mm to 0.5 mm. This might be part of a tin box, similar to a modern biscuit box.

Tin-Plate Fragments. Four cuttings of what appears to be tin-plate were recovered. Some of these may also be parts of tin boxes.

Elongated, Parallel-Sided Metal Sheet (Figure 46 i). This metal sheet is approximately 160.0 mm. long, 54.8 mm. wide, and 0.3 mm to 0.5 mm thick. Narrow, irregular bands, apparently of solder, occur adjacent to each of the parallel long edges on both surfaces. Grinding after cutting seems to have taken place on these edges. One end appears to have been cut irregularly, perhaps with a chisel, the other end perhaps merely broken or torn. Function is uncertain, but this might be part of a metal box or container of some sort.

Sheet Copper Scraps? Three scraps of sheet metal are heavily corroded, but may be copper or copper alloy.

Lead Foil (Figure 46 j). Although identification and classification of this substance is tentative, it is placed in the domestic category on the assumption that it may have been used in the packaging of tea or a similar product (Elliott 1971:198, 229-230). Alternately, lead foil was sometimes used in containers for gunpowder, and examples from Cabin 5 (page 195) were apparently used on preserves such as chutney.

A total of five examples of foil or small associated fragments were recovered. All of these are crumpled or twisted, so that measurements are of little significance. However, present length range is 33.7 mm to 57.2 mm, width is 15.5 mm to 45.5 mm, and thickness of metal 0.2 mm to 0.3 mm.

Although one or two surfaces appeared to bear decipherable impressions of letters or the like when observed in the field, these could not be detected during subsequent laboratory examination.

Pencil Lead

A small fragment of graphite (Figure 46 k) was recovered, but it may be a recent introduction into the site. However, it is hexagonal in cross-section, and the pencils used by the field crew during excavations probably had round leads. The fragment is 8.8 mm long and about 2.0 mm in diameter, broken at one end and rounded, apparently by use, on the other.

Hard Rubber Comb Fragments

Four dark brown to black, thick, flexible prongs that resemble narrow collar studs are actually "louse" comb teeth (Figure 46 l). These are almost certainly made from "vulcanite," a hard rubber and sulphur compound used during the late nineteenth century. "Vulcanite" was first referred to in this sense about 1860, although it may have been manufactured earlier.

The material in the recovered sample is still flexible, although it will break when struck. Two combs or more probably two different size tooth rows are represented. Three teeth vary in length between 21.0 mm and 27.5 mm, the similarity suggesting that they were broken from the comb near their bases. Widths are 5.0 mm and thicknesses 0.7 mm to 0.8 mm. The edges of each tooth are rounded and smoothed, but transverse striations appear on the faces. Presumably the considerable width of the teeth was to give added strength to the comb. The fourth fragment is similar in form to the above but somewhat smaller: 14.4 mm long, 2.9 mm wide, and 0.8 mm thick.

A complete comb of this type was recovered from an internal storage pit in Cabin 4, and is described in Chapter VII, page 175. Elsewhere, bone and tortoise-shell examples of similar form are known.

TRANSPORTATION

Horseshoe Nail

Overall length of the present example (Figure 46 m) is 61.2 mm, shaft width 5.1 mm, and shaft thickness 2.8 mm. The head is 9.3 mm long, 6.7 mm wide, and 8.1 mm thick. The nail is bent at approximately a 45 degree angle about two thirds of the distance from head to tip.

DRESS AND ORNAMENTATION

Button

Group I, Type 1 Shell Button (Figure 46 n). A single shell button consists of a simple disc 10.9 mm in diameter and 1.8 mm thick. There is a rough recess around the edge on one surface, but this may be the mark of the turning tool or button-bit rather than an intentional feature. One hole approximately 1.4 mm in diameter is drilled at centre of the disc; a second similar hole to one side of the centre. From centre to centre, the holes are separated by approximately 2.0 mm. A sloping, apparently gouged channel leads from just inside the rim through the centre hole into the side hole. Presumably this was intended as a thread channel and was gouged from the side of the button in this fashion since too much pressure directed between the holes might have broken out the intervening space. Alternately, it might be part of the conformation of the original shell or a result of exfoliation. This shell is again probably a marine species, and the grey color suggests the possibility of the eastern quahog clam (Mercenaria mercenaria). Again, however, it might be an abalone (Haliotis sp.).

Beads

Small Drawn Tubular Beads

Small Blue Glass Beads (Figure 46 o). A series of 14 small blue glass beads range in length between 1.0 mm and 2.2 mm, and in diameter between 1.4 mm and 3.0 mm. Thus, although most are in the "seed" category, under 2.0 mm in diameter, they range into the "intermediate" category (Conn 1968, 1969). Perforation diameter, as nearly as it can be obtained with a perforation gauge, ranges between less than 0.9 mm and 1.2 mm, with only three examples over 1.0 mm. All of these beads are rounded at the ends. Color of the sample as a whole would appear to be about 2.5B 5/4.

Small Pink Glass Bead (Figure 46 p). One example is similar to the above, but very small, with length of 1.3 mm and diameter of 1.4 mm. Aperture is well below 1.0 mm. Color registers about 5RP 7/6.

NATIVE INDUSTRIES

Chipped Stone

A probable flake or core fragment of grey quartzite measures 58.0 mm by 38.8 mm by 17.8 mm. It may be unrelated to the Métis occupation. In addition, two chips of fine-grained quartzite or similar material (one of which may in fact be from a gunflint) were found.

THE ARTIFACTS FROM THE REFUSE PIT OF CABIN 2

HUNTING

Ignition Parts and Ammunition

Gunflint (Figure 47 a). A single gunflint is of the "English" and sectioned-blade type, with the working axis perpendicular to the line of striking the blade. The cross-section forms an off-centre prism. The heel is retouched, but there is relatively little flaking on the long, bevelled sparking edge. The flint is of medium size, perhaps for use in a northwest trade gun of about 60 calibre, and is of a light brown-grey color. Length is 26.4 mm, width 20.5 mm, and thickness 8.0 mm. Two additional small chips may be from gunflints.

Round Balls (Figure 47 b). Two lead "round" balls were recovered, both 14.45 mm in diameter and therefore of approximately 60 calibre. Weight of the balls is 16.44 grams and 16.79 grams or 254 grains and 259 grains. This is virtually the same calibre predominating also in the fur trade sites seventy years or more earlier than the Métis occupation.

Lead Shot (Figure 47 c). A total of 441 small shot was recovered from the Refuse Pit of Cabin 2. Presumably, at least some of these were introduced with bird or small mammal remains disposed of here.

Diameters of shot range between 2.70 mm and 4.80 mm, or from about size 6 to BBB (Montreal standards, Logan 1959:171). The distribution of sizes by 0.05 mm increments is given in Table 15, Appendix III, and by standard sizes in Table 16, Appendix III. Clearly, the greatest concentration is in the 3.00 mm to 3.30 mm range, or about size 5 to 4, with a slight secondary concentration in the 4.10 mm to 4.30 mm range, or about size 1 to B (Logan 1959:171; Greener 1910:612).

Sprue Fragments? (Figure 47 d). Six small, elongated lead pellets, rounded at the ends, may be pieces of sprue. Length ranges from 6.2 mm to 8.4 mm, and diameter from 2.6 mm to 3.3 mm. "Sprues" are the waste fillings of the pour-holes in bullet moulds, cut or broken away when the bullets are removed. However, the present examples show no clear signs of having been cut, and function is actually uncertain.

Lead Bullet (Figure 47 e). One spent bullet has an extensively flattened tip, with folds of lead in fact extending below the original base. Enough of this base remains, however, for measurement, and the original diameter appears to have been approximately 11.2 mm, or about 44 calibre. Present length is 10.7 mm and weight is 12.95 grams or 200 grains. This bullet might have been fired from a 44 Henry cartridge, one of which was in fact found between Cabin 1 and Cabin 2.

CONSTRUCTION, BLACKSMITHING, AND CRAFTS

File Tang

A generally pointed and curved iron object appears to be a file tang (Figure 47 f), perhaps scored with a cold chisel or blacksmith's hardy and broken from the file blade. The curve, towards the pointed end, describes nearly 90 degrees. Length of the fragment is 96.0 mm, width 15.0 mm, and thickness 5.5 mm.

Numerous similar sections of file tang, apparently discarded, were found at the blacksmith's shop locality of Fort George (North West Company, 1792 to 1800; Kidd 1970:39). Presumably, tools of some sort were being made from the removed file blades.

No monograms or marks appear on the present tang, although these were frequent on fur trade examples, and occur on some modern files. However, the tang is heavily rusted, and the rust may conceal such markings.

Forged Iron Nails

Nails from the Refuse Pit of Cabin 2 were not cleaned, and many had extensive adhesions of iron oxide and sand or of wood. Therefore classification is difficult, particularly within the machine-headed, cut nail category, and some of the assignments are consequently provisional.

Gable-Head Forged Nails (Figure 47 g). Classification as cut nails is questionable. One example is almost certainly gable-headed; a second is more questionable. Both are essentially complete and straight. Lengths are 70.8 mm and 73.6 mm, widths 5.2 mm and 5.9 mm, and thicknesses 4.0 mm and 4.3 mm. Heads are 6.8 mm and 7.8 mm long, 5.4 mm and 5.1 mm wide, and 3.5 mm and 4.3 mm thick.

Forged or Cut Iron Nails.

Nine examples (Figure 47 h, i), all essentially complete and all relatively small, are of undetermined manufacture. They may be either forged or cut. Heads tend to be flat and battered. Most examples are straight, but one is bent at approximate centre to about a 45 degree angle, and a second is bent at about the same angle three-quarters of the distance from base to tip.

Size ranges are: length 17.0 mm to 34.4 mm, width 2.3 mm to 4.0 mm, and thickness 2.1 mm to 3.5 mm. Because of extensive apparent modification, head sizes are probably of little significance, but length range is 6.0 mm to 9.6 mm, width 4.0 mm to 8.4 mm, and thickness 1.4 mm to 3.3 mm.

Machine-Cut Iron Nails

Gable-Head Cut Nails (Figure 48 a). Four essentially complete examples all tend to be large. All are apparently machine-made but have

hand-forged heads. One of these is clearly of the gable-head clasp-nail type. On the others, and the one fragment, the head is not as well defined, but is probably of the gable type.

The nails are essentially straight, with the exception of one example bent at approximate centre to about a 45 degree angle. The tip segment is then curved slightly in the opposite direction and slightly twisted. Lengths are 56.0 mm to 83.0 mm, widths 4.1 mm to 6.4 mm, and thicknesses 4.3 mm to 6.3 mm. The fragment is 4.6 mm wide and 3.9 mm thick. Heads are 6.5 mm to 11.5 mm long, 5.1 mm to 7.9 mm wide, and 3.0 mm to 4.7 mm thick.

Flat-Head Cut Nails. Sub-groups are particularly difficult to classify because of rusting and the adhesion of wood. Consequently, the following classifications might be modified after cleaning.

Group 1 (Figure 48 b). Five essentially complete examples range in length from 25.0 mm to 71.0 mm, in width from 3.1 mm to 5.5 mm, and in thickness from 1.8 mm to 5.0 mm. Heads are 6.0 mm to 9.6 mm long, 3.6 mm to 7.4 mm wide, and 2.0 mm to 3.5 mm thick. Five fragments have a width range of 4.3 mm to 5.7 mm and thickness of 3.4 mm to 5.0 mm. Heads are 7.1 mm to 9.7 mm long, 4.5 mm to 5.7 mm wide, and 2.5 mm to 3.0 mm thick.

The two longest complete nails show very slight bending; the others of both categories are essentially straight. At least two examples clearly show adhering wood fragments, presumably the remains of the wood into which they were driven. The grain of this wood runs perpendicular to the shank of the nails.

Group 2 (Figure 48 c, d). Thirteen essentially complete examples were recovered, of which seven are large and six small. Overall size range is: length 25.6 mm to 67.0 mm, width 2.8 mm to 5.5 mm, and thickness 2.8 mm to 5.0 mm. Head dimensions are: length 4.7 mm to 10.1 mm, width 4.5 mm to 8.3 mm, and thickness 1.6 mm to 3.0 mm.

Most nails are essentially straight, but one of the large examples has a slight bend about two-thirds of the distance from head to tip, and one of the small examples has a slight bend at about the middle of the shank. One large example has been split and separated, apparently along a lamination of the original metal sheet. The split runs through the head and for almost one-quarter the length of the shaft. Another small example (not enumerated above) has been completely split. It is 35.4 mm long, 5.9 mm wide, and the present thickness is 2.4 mm.

Four headed fragments were recovered. Width ranges from 4.8 mm to 6.8 mm and thickness from 2.9 mm to 4.3 mm. Heads are 6.5 mm to 8.3 mm long, 5.5 mm to 6.6 mm wide, and 1.9 mm to 4.0 mm thick. Again wood grain appears on several Group 2 nails.

Group 3 (Figure 48 e). Six essentially complete examples range in length from 24.3 mm to 66.0 mm, in width from 2.9 mm to 4.1 mm, and in thickness from 2.3 mm to 4.0 mm. Heads are 5.1 mm to 7.8 mm long, 4.6 mm to 7.1 mm wide, and 1.4 mm to 3.5 mm thick. One example is bent at about a 45 degree angle approximately three-quarters of the distance from head to tip; another is bent at about a 30 degree angle approximately

two-thirds of the distance from head to tip.

Five fragments were also recovered, 4.0 mm to 6.0 mm in width, 3.5 mm to 5.3 mm in thickness. Heads are 6.6 mm to 9.2 mm long, 5.0 mm to 8.2 mm wide, and 2.5 mm to 4.2 mm thick. One fragment is bent once a short distance below the head and again near the break.

Cut Nail Fragments (Figure 48 f). Nine fragments were recovered, ranging in width between 2.9 mm and 5.7 mm and in thickness between 2.7 mm and 5.2 mm. Two examples have heads remaining, but of quite indeterminate form. About three are medial fragments and four tip fragments. Two examples show slight bending towards the broken tip, and one example is curved throughout its remaining length.

Wire (Round) Nails.

Four essentially complete round nails (Figure 48 g) were recovered, ranging in length from 50.0 mm to 54.6 mm and in diameter from 2.6 mm to 3.3 mm. Heads are all flattened and rounded, approximately 6.7 mm to 8.1 mm in diameter and 2.2 mm to 2.5 mm thick. Two examples are slightly longer than the other two and essentially straight. Considerable wood adheres to two of these nails, with the grain perpendicular to the shank.

One example has a slight bend at about the middle. Another has about a 90 degree bend approximately one-third the distance from head to tip, and it appears to have been clenched.

These nails may be intrusive into the site, possibly derived recently from fencing. All were recovered relatively near surface. However, wood-grain on two examples appears very similar to that on the cut nails, suggesting that they may belong with the Métis occupation. Wire nails would theoretically not have been available at this time. (Nelson 1968)

Miscellaneous Hardware

Washer and Tack (Figure 48 h). A small washer and tack or rivet appear to be made of copper or copper alloy. The washer is bisected by a scratched line running from edge to edge near, but not quite at, the centre. On the opposite surface, where the tack shank protrudes, there is a concentric incision, separating the surface area into two approximately equal concentric rings or "doughnuts." The washer is 9.4 mm in diameter and 1.7 mm thick. The tack or rivet is 9.5 mm long and 2.5 mm in diameter. Function of this example is uncertain.

Screw (Figure 48 i). The single example is a conventional flat-headed, slotted wood screw, with head tapering fairly abruptly to the shank, and thread beginning about half way between the head and tip. Length is 25.4 mm, diameter of head 8.3 mm, and diameter at the thread 5.2 mm.

Iron Rivet Head? A piece of ferrous metal may have been pierced with a rivet or nail, but it is extensively rusted and the original form is uncertain. Diameter is 14.9 mm and present thickness 4.0 mm.

Washer or Finial Fragment? (Figure 48 j). This object may be half of an iron washer. However, although the outside curve is essentially regular for most of the remaining circumference, an enlargement near the break suggests that this may rather be part of a finial or "stemmed" object of some sort, possibly a small pot-lug. Present maximum diameter obtainable on the regular-shaped part is 23.8 mm, diameter of the perforation is 5.25 mm, and thickness of the metal is 1.8 mm.

Metal Clasp or Retainer (Figure 48 k). One probably tin-plated object may be some sort of clasp or retainer. A band of sheet metal has been bent around a rod with a presumed diameter of about 4.2 mm. Wings or leaves extend to both sides of the resulting semi-cylinder, and these wings have probably been broken at the ends. Width of the band is 16.3 mm.

HOUSEHOLD, BUSINESS, AND PERSONAL MAINTENANCE

Earthenware

Plain White Glazed Earthenware.

Two body sherds of plain glazed earthenware were recovered (Figure 49 a), comparable to examples described in previous sections. The sherds are thick and are slightly crazed on both surfaces. Lengths are 19.6 mm and 20.0 mm, widths 10.4 mm and 20.0 mm, and thicknessess 5.2 mm and 5.7 mm.

Monochrome Underglaze Transfer-Printed Ware

Copeland Earthenware with Blue "Grapevine" Pattern (Figure 49 b). One very small body sherd is comparable to examples recovered from Cabin 1. Thickness is 4.3 mm. The grapevine design appears on the inside, but not enough of the vessel remains to reconstruct its form. Color is 5PB 6/10. Sussman (1979a:237) dates this ware at later than 1847, but no official name or pattern number is known.

Copeland Earthenware with "Flower Vase" Pattern? (Figure 49 c). One rim sherd, 32.0 mm long, 29.0 mm wide, and 5.0 mm thick, is fairly dark "flowed" blue in color (5PB 6/10). Design appears only on the inside and is probably "Flower Vase," which was made from approximately 1828 to the twentieth century (Sussman 1979a:115, Figure 124).

Copeland Earthenware with B 700 Pattern? (Figure 49 d). A very small rim sherd, 3.0 mm thick, has a honeycomb design on the inside only, perhaps B 700, made from approximately 1838 to after 1847 (Sussman 1979a:64, Figure 64). Again there is no known pattern book name for this design. Color is 5PB 6/10.

One additional body sherd of the same general ware was recovered, but with very little color remaining, and no way of identifying the pattern.

Copeland Earthenware with Blue "Meander" Pattern (Figure 49 e). A single rim sherd, 47.0 mm long, 30.0 mm wide, and 6.4 mm thick, has a plain white glaze on the outside, and on the inside a long ribbon and flower design. A "grain"-like design runs just under the plain border. Vessel form is probably a fairly large bowl, with a reconstructed diameter of 154.0 mm. Color is 10PH 4/6 (or 7.5PH 4/6). This is the "Meander" pattern appearing in the W. T. Copeland and Sons 1882 catalogue (Sussman 1979a:148, Figure 158).

Glassware

Green Glass Bottle Fragment (Figure 49 f). A single fragment of medium-green glass is part of a bottle, with portions of the neck finish remaining. Length is 37.3 mm, width 18.0 mm, and thickness 5.8 mm. Color is approximately 7.5GY 7/6.

Mirror or Window Glass Fragments (Figure 49 g). Two fragments are similar to examples from Cabin 2, General. They may be mirror or window glass, but since no traces of silvering are apparent, the latter is perhaps more probable. Lengths of fragments are 17.6 mm and 20.0 mm, widths 15.2 mm and 23.0 mm, and thicknesses 1.6 mm and 1.7 mm. Color is too light to be accurately measured.

Sheet Metal Artifacts

Tin Can Lids (Figure 49 h). Two generally round, thin objects appear to be the tops of small cans, likely removed with openers. One is made of fairly heavy tin-plate (Figure 49 h), with a deep embossed ridge that runs concentrically about a third of the way from the edge to the centre. Something at the approximate centre of the can is possibly a solder seal. Tin-plate appears more clearly on the concave side of the ridge, but the lid is otherwise heavily corroded. No signs of stamping or other identifying marks appear. Diameter of the cut lid is 79.2 mm and thickness 3.7 mm.

The second example lacks this ridge and appears to have been flat. There is, however, a slight folded area near the edge that looks like the remains of lead solder. Diameter is 80.0 mm and thickness 2.0 mm.

Tin-Plate or Iron Fragments (Figure 49 i). Five fragments of sheet ferrous metal were recovered, and some appear to be tin-plate. These may be fragments of boxes or other containers. Two examples are narrow bands, one bent at about the middle. However, this bend may be fortuitous. A somewhat larger, thicker section may also be tin-plate, but it is heavily rusted. It is slightly bent along the short axis to form a sort of trough.

Metal Foil (Figure 49 j). Ten metal foil fragments, apparently lead, may again have been related to containers used for tea. Size ranges are: length 23.3 mm to 108.9 mm, width 11.7 mm to 56.5 mm, and thickness of metal 0.2 mm to 0.3 mm. Because of breaking and folding

throughout the sample, however, measurements are of little significance, although figures for thickness generally reflect the dimension of a single sheet of the foil.

Bone Shaving Brush Handle

This artifact (Figure 50 a) consists of a bell-shaped bone or antler cup with a raised rim on the outside of the mouth and threading on the inside. The walls of the cup are thin. This was apparently the bristle end of a shaving brush, the handle portion of which has been eroded or broken away.

Length of the remaining section is 18.0 mm, diameter also 18.0 mm, and thickness 2.0 mm. Fragments of an apparently similar brush were recovered from the 1835 to 1861 Hudson's Bay post at Rocky Mountain house (Steer, Rogers, and Lutick 1979:198, Figure 142 d, e).

Knife Inlay Fragment?

This fragment (Figure 50 b) is of uncertain function but may be the shell cover or inlay from a clasp knife or jacknife. The form is an elongated rectangle of mother-of-pearl shell that has been stepped down for about half its length to approximately two-thirds of its maximum width. Just to the wide side of centre is a single perforation 3.1 mm in diameter, perhaps for the rivet that went through the knife casing. The object is broken at the narrower end. Length is 22.7 mm, width 8.0 mm, and thickness 1.0 mm.

Hard Rubber Comb Fragments

Two "louse" comb teeth (Figure 50 c) are similar to examples described from Cabin 2 General, and are presumably also made from "vulcanite." Lengths are 21.5 mm and 26.1 mm, widths 3.0 mm and 4.9 mm, and thicknesses 0.8 mm and 0.6 mm. Again they would seems generally consistent with the virtually complete comb recovered from Cabin 4 (Chapter VII, page 175).

TRANSPORTATION

Leather Fragments

Five fragments of leather (Figure 50 d) are all of apparent strap form, enlongated and with various indications of perforations. Present incomplete length ranges between 33.7 mm and 146.6 mm, width between 16.3 mm and 21.1 mm, and thickness between 3.2 mm and 4.0 mm.

The longest example (Figure 50 d) has at least one perforation in about the centre longitudinally. Shorter examples have some evidence of serration or chewing at the ends, which may also indicate perforation, although the suggestion is actually of multiple perforations, which would seem odd. These leather fragments may be associated with harness, and therefore are provisionally placed in the transportation category.

DRESS AND ORNAMENTATION

Cloth Fragments

Two small fragments of tightly woven silk cloth were recovered (Figure 50 e, f). Schweger's analysis (Appendix I) indicates:

> . . . identical yarn and fabric structure. Warp and weft yarns can be positively identified due to the presence of selvage edges on one edge. . . .
>
> The fold lines indicate that the one inch wide fabric strip, ribbon, or seam binding was folded twice so as to be a 4-layered 1/4 " wide fabric strip. It was folded on the length-wise grain, that is, in the direction of the warp yarns. The fabric was knotted after it was folded. The knots that remain are of particular interest since the knots are the means of holding the fabric in the thick, four-layered narrow strip. That each of the two specimens contains these knots leads one to suggest that these fragments originally came from one textile object that was placed in the refuse pile. Since only one selvage can be located, it can not be definitely stated as to whether the 1" fabric strip is actually a ribbon or tape or if it is a fabric strip ripped an inch from a selvage edge.
>
> The warp yarns are 2-ply brown (at least at present) yarn made up of 10-12 silk fibers, 5 to 6 fibers making up each singles yarn. This silk warp yarn may be equivalent to the silk yarns today called organzin. It is a silk yarn, manufactured for use as warp, which is made up of two or more threads of silk that have been lightly twisted together . . . . The weft yarns are green and of larger diameter. They appear to be single ply. While one could speculate that the weft is of "tram" (a common silk weft yarn that unites two or more singles but is very loosely spun), this is not the case if the weft yarn is only single ply. Further investigation could demonstrate whether the weft is what is called "thrown silk" or grege, two terms which are applied when two or more filaments of raw silk are reeled together and given a slight twist.
>
> The fabrics are plain, unbalanced weaves with 65-68 threads per cm in the warp and 34 threads per cm in the weft. This evidence could aid future researchers in determining whether these two fabric artifacts represent a commercial type of narrow tape or braid that was available for use at Buffalo Lake.

Present over-all size of one fragment is 43.1 mm by 9.8 mm by 4.9 mm, but these measurements are clearly of little significance.

Buttons

Group I Glass Button

Type 4, Glass Button (Figure 50 g). This is a small sew-through button made of milk glass. Four holes appear in a deep well on one surface. This side as a whole is shaped as a truncated cone. The opposite side is slightly convex, but again with a much shallower depression in the centre. The convex side of the button is an iridescent white overall; the conical side is dark in color except within the "well" itself. Diameter is 11.4 mm and thickness 4.8 mm. The deeper "well" is about 6.0 mm in diameter, and the holes are about 1.5 mm in diameter. This is presumably a shirt or blouse button.

Group II, Shell Buttons

Type 5, Shell Button (Figure 50 h). One sew-through button is made of shell with the iridescent mother-of-pearl appearing on one surface, a dull finish on the other. Two holes are well centred and set in a small circular depression or "well" in the middle of the button, defined by an incised ring. Sculpturing is much more apparent than on other shell examples from Cabin 1 and Cabin 2. Diameter is 13.3 mm, thickness 3.3 mm, and the diameter of the well is 7.0 mm. Holes are approximately 1.2 mm in diameter. Although this button resembles Type 1 or 2 from Cabin 3 in some respects, it is sufficiently different to be distinguished by a separate type number.

Type 6, Shell Button (Figure 50 i). A second plain white shell example, again comparable to but distinct from Type 1 or 2 examples from Cabin 3, is extremely small and flat. It has two reasonably well-centred holes but no sculpturing. Diameter is 8.3 mm and thickness 1.6 mm. Holes are less than 1.0 mm in diameter. Both these shell buttons were presumably worn on blouses or shirts.

Group III, Bone Buttons

Type 1, Bone Buttons (Figure 50 j, k). One sew-through bone button (Figure 50 j) has four holes and symmetrical machine sculpturing. This turning has formed a rounded rim, set off by means of a fairly deep incised concentric ring from a relatively deep, regular depression or "well" containing the perforations. At the centre of this well is a slight irregular depression, probably the mark of the turning tool. The back of the button is slightly convex. Diameter is 19.2 mm, thickness 2.4 mm, and diameter of the depression 13.2 mm. Holes are approximately 2.0 mm in diameter.

A second four-hole bone button (Figure 50 k) is slightly smaller than the above, but otherwise very similar. Diameter is 17.0 mm, thickness is 2.2 mm, and the diameter of the well is 11.8 mm. The holes are again about 2.0 mm in diameter. Color is a dark walnut brown.

Type 5, Bone Button (Figure 50 l). A third example is similar in some respects, intermediate in size between the previous two. Again it has four holes about 1.7 mm in diameter, but the rim and the depression or well are not defined by an incised ring as on the previous examples. Diameter is 18.0 mm and thickness 2.0 mm. A small mark from the turning tool again appears at the centre of the concave side. This button is given a separate type number than those found in Cabin 3.

Group IV, Metal Button

Type 4a, "Birdcage" Button (Figure 50 m). This heavily corroded iron button has four holes in a central depression or well. The back of the button opposite this concave well is reciprocally convex. Diameter is 12.8 mm, thickness 1.2 mm, and diameter of the depression about 7.6 mm. The holes are approximately 1.5 mm in diameter. This button is similar to Type 4a examples from Cabin 3, but smaller.

Beads

Small Drawn Tubular Beads

Cornaline d'Aleppo Beads (Figure 51 a). Cornaline d'Aleppo beads have an exterior and core of different colors. In four examples from the Cabin 2 Refuse Pit, the exterior is a dark brick red and the core a fairly opaque-looking white. This may be a generally later variety in this area, since comparable examples from early fur trade sites (ca. 1790s to early 1800s) have a dark green translucent core. These beads were probably made from drawn tubes, but ones in which both colors of glass had been juxtaposed, using one of at least two known methods, prior to drawing and cutting.

These beads are of generally "intermediate" size, smaller than "pony" (Conn 1968, 1969), with diameter ranging from 2.7 mm to 3.1 mm and length from 1.5 mm to 2.6 mm. Apertures are less than 1.0 mm in diameter. The color of the exterior red appears to be 5R 4/6 or 5R 3/6.

Small Blue Glass Beads (Figure 51 b). Forty-six examples are mostly very small "seeds" beads, ranging, however, into the so-called "intermediate" group (2.0 mm to 3.0 mm; Conn 1968, 1969). Diameter ranges from 1.8 mm to 2.8 mm and length from 0.9 mm to 2.2 mm. The apertures were not determined individually, but most are presumably less than 1.0 mm. Color varies somewhat through the sample from dark blue (35 examples) to blue-grey (11 examples), but in part this may be owing to chemical action in the earth. An approximate value of 10B 3/6 on the dark blue and 10B 7/2 on the light blue examples was obtained.

Small Green Glass Bead (Figure 51 c). One "seed" bead is essentially the same as the blue beads above, but of a green color. Diameter is 1.6 mm and length 1.0 mm. Aperture was not precisely determined, but it is less than 1.0 mm. Color is approximately 10GY 4/4.

Large Glass Beads

Dark Blue Glass Spherical Bead (Figure 51 d). This bead, probably wound, is a very dark blue, with some discoloration or iridescence, however. It is generally round, but with some flattening of the aperture ends. Diameter is 9.4 mm and length 7.5 mm. The aperture measures 2.2 mm. The color is too dark to be accurately classified.

Blue Glass Spherical Bead Fragment (Figure 51 e). A single fragmentary round bead, apparently wound, is somewhat darker than robin's egg blue. It is in the smaller size range of the larger beads. The diameter is 7.4 mm and the length 6.0 mm. The aperture is approximately 1.4 mm, and color registers 7.5B 4/8.

Robin's Egg Blue Glass Spherical Bead (Figure 51 f). This example is smaller than those preceding and unfacetted, although it has what appears to be a slight equatorial rim. Manufacturing method is uncertain, but it may be wound. The glass is a slightly white-clouded robin's egg blue, registering 5BG 6/2. Diameter is 5.8 mm and length 5.0 mm. The aperture is 1.6 mm at one end, tapering down to the other.

Blue-Green Glass Spherical Bead Fragments. Two fragments, possibly from a single example, are probably comparable to the above, but have largely disintegrated.

Blue Glass Facetted Bead (Figure 51 g). A single bead is of the variety sometimes inaccurately called "Russian" blue or "Hudson's Bay." It is relatively large and multiply facetted, of a generally short rectanguloid or tubular form. Length is 5.6 mm and diameter 5.7 mm. Perforation as determined with calipers is 3.1 mm.

Presumably this bead was manufactured by sectioning blown tubing and subsequently grinding the facets. Color is 7.5PB 2/8.

Green Glass Facetted Bead Fragment (Figure 51 h). This fairly large bead is medium to light green in color, oval in form, and rather roughly facetted. It has been split down the middle. Diameter is 10.0 mm and length 14.0 mm. The aperture is slightly more than 1.0 mm in diameter. Color appears to be 5G 6/10. Probably this bead was pressed or moulded, although this is not entirely clear from the cross-section.

Clear Glass Facetted Bead (Figure 51 i). One medium-sized, generally round example is a somewhat irregularly facetted bead of clear glass. A slight equatorial rim is apparent where the facets converge. Diameter is 8.4 mm and length 7.4 mm. The perforation is relatively large at one end, 2.6 mm by calipers, tapering down, however, to the other end. This bead was probably pressed or moulded.

Ring Stone

A single large round cabochon or unfacetted stone was recovered (Figure 51 j). It is made of clear glass with no other distinguishing

marks, such as the impressions that appear on some comparable examples from earlier sites. Diameter is 14.5 mm and thickness 6.4 mm. The stone is flat on the base, with rounded edges and a domed centre, the height of which is a little less than half the diameter. This was presumably a stone for a fairly massive ring, perhaps a cuff-link, or possibly a button.

NATIVE INDUSTRIES

Chipped Stone

Projectile Points (Figure 51 k, l). One positive example was recovered (Figure 51 k), a small side-notched point made of a reddish chalcedony resembling "Knife River flint." The point has a short blade and is fairly roughly chipped. Length is 16.5 mm, width 12.3 mm, and thickness 3.7 mm.

A second example (Figure 51 l) may be the tip of a small triangular point, even more roughly made of a reddish microcrystalline stone. Length of the fragment is 15.5 mm, width 13.7 mm, and thickness 4.4 mm. This might be merely a worked flake.

Stone Fragments. Five stone chips were recovered, although one of these may be a tiny fragment of gunflint. Quartz, quartzite, and chert are represented. A small brown quartzite flake, not clearly retouched, is 18.0 mm long, 17.0 mm wide, and 4.5 mm thick. A second example, of quartz, might be classified as a core. It is 67.7 mm long, 44.6 mm wide, and 26.4 mm thick.

FAUNAL MATERIALS FROM CABIN 2

As in Cabin 1, the general area of Cabin 2 contained a number of large mammal bone fragments, many of which were probably bison (Bison bison). (Table 14, Appendix III, enumerates the identifiable and unidentifiable bone and indicates its distribution).

Identified mammal bone consisted of possible snowshoe hare (Lepus americanus). Birds were Snow Goose (Chen caerolescens) and a member of the Order Passeriformes, Family Icteridae, about the size of a Yellow Headed Blackbird. One wood frog bone was also recovered.

Specific to the Refuse Pit of Cabin 2 were bison (Bison bison), snowshoe hare (Lepus americanus, two individuals minimum), and muskrat (Ondatra zibethicus, two individuals minimum). Additional medium-sized or small mammal bones were recovered including examples of approximately deer size and approximately dog size.

Birds consisted of Canada Goose (Branta canadensis), possible Sharp-Tailed Grouse (Pedioceter phasianellos), and additional unidentified species. Undentified fish was also recovered.

DISTRIBUTIONS IN CABIN 2

Distribution of artifacts and faunal materials is represented in Tables 13 and 14, Appendix III. This distribution was plotted on the ground plan of Cabin 2. The cabin as a whole and its immediate environs were divided into six sub-areas, the boundaries of which, as in Cabin 1, were assigned fairly arbitrarily and by grid directions. These areas were designated: Cabin 2 General, Cabin 2 West, Feature 1, The Fireplace, Feature 2, The Refuse Pit, Cabin 2 East, and (large) Depression.

Grid locations are again represented as for Cabin 1. References to "Cuts" in the Feature 2, Refuse Pit, area are given according to the somewhat different excavation procedure employed here, but are probably of limited significance, since the Refuse Pit appears to have constituted a homogeneous unit.

Because of the uncertainties of features and wall-lines, distributions within Cabin 2 may lack even the qualified significance of distributions in Cabin 1. The exception is Feature 2, The Refuse Pit, where a fairly clearly discrete assemblage was recovered. Provisionally, however, materials obtained from horizontally and vertically near this pit fill during the 1970-71 excavations are listed under Cabin 2 West rather than Refuse Pit.

As in Cabin 1, artifacts and bone were much more fully represented in the western portion of the hypothetical structure, and in particular in and in proximity to the Refuse Pit. Again, this may to some extent reflect the concentration of the excavations.

Again, a clearly identified fireplace existed in this western segment, but in the boundary area and possibly just to the east of a division. The terrain, however, was sloping, and although a rock pile occurred on the east lip of the large (cellar?) depression, the structural specifics of this area were very unclear.

Again, clearly significant distributions of specific artifacts were not discerned. The heavy concentration of lead shot and beads in the Refuse Pit may be in part an "artifact" of the excavation methods employed.

All clearly forged nails were found in Cabin 2 West and related features, as well as all doubtful examples. Twelve of the 96 cut nails, however, were found in Cabin 2 East, where only 13 artifacts altogether occurred. The significance is questionable.

Earthenware occurred only in the western section, divided about equally between Cabin 2 West and the Refuse Pit. Glass, however, was concentrated outside the pit. Buttons, and, as previously indicated, beads, were heavily concentrated in the Refuse Pit. The likelihood that discovery in this pit represents purposeful disposal rather than loss may give these data some significance.

Although the Refuse Pit may represent a "primary" disposal during occupation of the cabin, it is also possible that it was a storage pit converted to "secondary" disposal after the structure as a whole, or that part of it, was abandoned (Schiffer 1977:19). This probably cannot be determined at the present time. Nor is there evidence in Cabin 2 for "de-facto" refuse directly reflecting abandonment behavior (Schiffer 1977:24).

Examination of distributions within Cabin 2 West or its immediate environs revealed a few suggestive concentrations. Flat glass was concentrated outside the hypothetical south and north walls of the structure, suggesting the use of windows (rather than skin or parchment coverings as D'Artigue suggested). Furthermore, the two concentrations were more or less opposite one another near the western extremity.

Metal foil appeared to be concentrated in the Refuse Pit and between this pit and the north wall of the building. Beads were concentrated in and between the Refuse Pit and the south wall of the building. In the latter area, however, a meticulous excavator was at work, and this may account for the distribution.

Bone was heavily concentrated in the Refuse Pit, where most identifiable specimens were found, including all clearly identified bison (9 pieces) and snowshoe hare (28 pieces). Otherwise bone showed no particular concentration, except that it appeared as prevalent, or more so, inside the cabin as immediately outside. Again, we may presume that "secondary" disposal of the large bones would have taken place outside the excavated area.

The two nearly neighboring cabins, Cabin 1 and 2, might be compared on the basis of (1) functional categories, (2) specific artifact groups, and (3) styles or types.

Altogether, 763 artifacts were recovered from Cabin 2 and only 163 from Cabin 1, but much of the difference is made up by lead shot. As a consequence, Hunting is heavily represented in Cabin 2, but clearly this is a result of the Refuse Pit concentration of shot, in combination with different excavation and recovery techniques.

Construction and Domestic categories are reasonably close at the two locations. Clothing and Ornament, however, is heavily weighted at Cabin 2, again in part because of the Refuse Pit concentration of beads. Native Industries are much more prevalent at Cabin 2.

For comparative purposes, and as a possible index to the importance of activities on the site, functional categories are ranked in Table 17, Appendix III, individually for each cabin and for the two cabins combined.

Comparison of specific artifact groups produced few discrepancies that cannot be accounted for through differing excavation techniques. Forged nails are much more numerous in Cabin 1, however, and cut nails with hand-made heads are slightly more numerous, suggesting the possibility of greater age or differing function. These forged nails, along with spun-back buttons, give a somewhat archaic flavor to the Cabin 1 assemblage.

Earthenware is also predominant in Cabin 1 by more than three times. Categories such as metal foil and louse comb teeth appear only in Cabin 2, but may represent only one or two initial artifacts.

Style of earthenware varies between the two cabins, but no more than would be expected given personal preferences, the large range of available patterns at the time, and the apparently large and diverse number of traders to draw on for supplies.

In short, no demonstrable and statistically significant artifact differences can be pointed to that distinguish the two cabins in terms of time or function. This is borne out by Kooyman's analysis of the faunal materials (Appendix II).

How does the ranking indicated square with the documentary data and with a general conception of Métis life?

The first four categories in the combined Cabin 1 and Cabin 2 ranking would seem reasonable in terms of basic and less basic subsistence strategies. Transportation, however, primarily the horse, is surprisingly under-represented in terms of its clear historic importance in the bison hunt and in reaching and supplying the seasonal settlements. Transportation goods such as horse-harness were more prevalent at the Kajewski site in the Cypress Hills (Elliott 1971:182-183). Possibly, as in some fur trade contexts, horses were kept at considerable distance from the main residential settlement, or from this part of it.

Secondly, Native Industry, primarily chipped stone, is perhaps surprising in being present at all. Occurrence at several cabins at both Buffalo Lake and the Kajewski site (Elliott 1971:178-182. 212-219; Bonnichsen 1967:3-4) suggests that this category is not invariably fortuitous, occasioned, for example, by mixing of prehistoric material in recent fill. In some cases, however, such as in Cabin 4 (Chapter VII), it may not be associated with the Métis occupations.

CABIN 2, DISCUSSION

Much of what has been said about Cabin 1 applies also to Cabin 2. Despite some differences in geographical situation, some quantitative differences in artifact groups, and differences in ranking of artifact classes, there is no clear indication of functional specialization. Again a residence is presumed, at least for Cabin 2 West, and this assumption is supported to a degree by the suggestion of glass windows on either side of the room. Dimensions of this residence were not as clearly defined as those of Cabin 1, but there is some suggestion that the sizes of at least the west units were almost identical.

Based on estimated width and hypothetical length of the west unit, a floor area of approximately 200 square feet (18.58 m^2) is estimated for this part of the structure, half the total estimate for Cabin 1. Again the distribution of artifacts and bone within the wall lines would suggest an earth floor. However, it is probable that the Refuse Pit was covered with flooring or a lid, although no clear evidence persists.

Again as in Cabin 1, the identity and specific form of the eastern section is in doubt. Lack of artifacts and the presence of a very large depression, however, might suggest a storeroom with a cellar. An in-house meat storage area is again a possibility, perhaps supported by the large depression. Again, however, there is some suggestion of a fireplace.

A major distinction between Cabin 1 and Cabin 2 was the occurrence of pits in the latter, two of which would appear to have been inside the structure. Possibly the somewhat higher ground at Cabin 2 would have encouraged the digging of cellars, which might have been more readily flooded in the Cabin 1 locality.

The Cabin 2 pattern is generally congruent with that of other Métis cabins excavated: one or two interior pits complemented by exterior depressions. At the Kajewski site in the Cypress Hills, Elliott (1971:25) reports that each cabin area consisted of the structure proper, along with at least three exterior pits located at least six feet from the cabins. Although the evidence is not clear at Cabin 2, either type of pit may have been initially dug for clay borrow, later used for storage or as a cellar, and ultimately used for refuse disposal.

Again no evidence of duration or season of residence is available for Cabin 2, but again the best potential indicator, the fireplace, was even less thoroughly explored than the similar feature at Cabin 1. Such exploration in the future might provide some evidence for seasonal rejuventation, such as was found elsewhere at this and at the Cypress Hills Métis Site.

CHAPTER VII

THE ARCHAEOLOGICAL DATA, CABIN 4

The location of Cabin 4 (Figure 4) was discovered by Doll in 1974 while conducting a general survey of the Métis site in order to produce a map. It was noted that the buried portion of the cabin had suffered extensive damage from cultivation. Remaining identifiable features consisted of a small mound and a few small depressions, out of which grew a thick clump of willows.

According to the landowners, this cluster of features had been identified as historically significant and the ground around it had been cultivated without much further disturbance for over half a century.

More than 80 cabin locations had been identified, many of which had much greater potential to yield architectural information. During the 1982 field season, however, an emergency situation arose that made it necessary to salvage what remained of Cabin 4 before it was destroyed by brush-clearing and breaking operations. Consequently, an intensive systematic survey of the specific area was immediately undertaken. No other cabin was found.

With the decision to salvage Cabin 4, plans that had been made for the excavation of Cabin 5 were postponed.

EXCAVATIONS AT CABIN 4

Excavation of Cabin 4 was initiated under Research Permit, Project 82-27. In addition, because the excavations were taking place on private land, permission to proceed was obtained from Mr. Ron Rider. Approximately 58 1/2 person-days were spent in June and July of 1982, surveying, clearing, excavating, and mapping Cabin 4.

Cabin 4 (Figures 4, 52) was approximately 420 feet (128.02 metres) east and 1,609 feet (490.42 metres) north of the site datum located at the northeast corner of LSD 14, Section 11, Township 41, Range 20 west of the Fourth Meridian. Cabin 4 was located approximately 1,834 feet (559.00 metres) to the north and 500 feet (152.40 metres) to the east of Cabin 3.

A grid consisting of two-metre square units was established, oriented to true north, 23° 24' east of magnetic north (Figure 53). Stakes were designated according to distance and direction from an arbitrary point 0, and excavation units were named according to the designation of the stake in their northwest corner. This grid extended 16 metres north-south and 14 metres east-west.

Excavations were conducted generally with the use of trowel and dustpan, but other methods, such as shovel-shaving, were employed in particular circumstances. The fill was screened through one-quarter inch mesh, with finer mesh employed to recover beads, microfossils, and seeds. Fill was removed by strata of deposition, but in addition, a

series of arbitrary 10 centimetre levels were maintained when deep cultural deposits, such as cellars, were encountered.

THE FEATURES OF CABIN 4

Seven cultural features were designated (Figure 53).

Feature 1, Large Pit.

Feature 1 (Figures 53, 54) was a large exterior depression or pit, with a depth of approximately 49 inches (124.5 cm). Few artifacts were found in this feature other than a few machine-cut nails. The bottom portion of the pit cut through pockets of clay, and it appears to have been a borrow-pit to obtain clay to plaster the adjacent north wall and fireplace of the cabin. It may subsequently have been used as a storage pit.

Feature 2, The Fireplace.

Feature 2 was a mound, which, when excavated, turned out to be the remains of a fireplace (Figure 53). Although all the cobbles had been removed in the 1920's, portions of the firebox and apron remained. As in the more nearly complete fireplace excavated in Cabin 3 (Chapter IV), the firebox in Cabin 4 was stratified. Four layers of ash, separated by layers of clay, were found. Since historical records show that some mud chimneys were replastered seasonally (see Coues 1897; Elliott 1971:27), there is a strong suggestion of four winters of occupation at this cabin.

Feature 3, Storage Pit.

Feature 3 was an exterior pit, approximately 3.80 feet (1.16 m) deep, located adjacent to the proposed door of the cabin, along the south wall (Figures 53, 55 a, b). This pit appears to have been used for "clean" storage, as it was cribbed and lined with bark (Figure 55 a, b). Again, few artifacts were recovered. Owing to the lack of concentrated clay deposits, it is doubtful that this was ever a borrow-pit for clay plaster. Rather it may have been intended solely as a storage pit, possibly an ice-house for food storage.

Feature 4, Wall Line.

Feature 4 was a clay ridge covering bits of burned and rotted log. This feature represented what little was left of the north wall of the cabin, preserved and delineated by clay mud-plaster from the fireplace and from the walls. The fireplace appears to have been located half way along this north wall. The northwest corner of the structure was located approximately 10 feet (3.05 m) west of the centre point of the fireplace, suggesting an east-west width of 20 feet (6.1 m) for the cabin.

Feature 5, Pit.

Feature 5 was an interior depression which appears to have served first as a borrow-pit for mud-plaster and second as a storage pit (Figure 53). Third, it appears to have been used as a refuse pit. Many of the small number of artifacts excavated from Cabin 4 were found in this feature.

Feature 6, Pit.

Feature 6 was another exterior depression (Figure 53), located west of, and adjacent to, Feature 1. It also appears to have been a borrow-pit that subsequently slumped after partial filling as a refuse pit. The depth of this pit was 3.94 feet (1.20 m), which was below the 1982 water-table.

Feature 7, Ash Dump.

Feature 7 was a small ash dump, approximately 16 inches (40.64 cm) in diameter. It was located approximately 30 feet (9.14 m) south of the fireplace and 15 feet (4.57 m) south of the proposed back door on the south wall of the structure.

Although cultivation had destroyed the remaining corners of the cabin, a portion of the south wall was found immediately opposite the fireplace. Part of the interior floor of the cabin was also found, consisting of a thin layer of very hard-packed clay. There was no evidence of a plank floor. The distance between the north and south walls was 26 feet (7.92 m). There was no evidence for interior partitions or for additions to the structure.

After the area to the south of the cabin was bulldozed, the major refuse deposit of Cabin 4 was discovered. Artifacts and faunal remains were scattered and shallowly buried, most occurring on top of sand immediately below leaf litter.

THE ARTIFACTS OF CABIN 4

HUNTING

No artifacts in the hunting category were recovered from the excavated portion of Cabin 4. However, this may be owing in part to the extensive disturbance by agriculture. As noted later, artifacts in this category were surface-collected from the bulldozer-disturbed dump that was associated with this cabin.

CONSTRUCTION, BLACKSMITHING, AND CRAFTS

This category is represented by three machine-cut common nails of three inch (76.2 mm), two and one-quarter inch (57.15 mm), and one and

five-eighths inch (41.28 mm) sizes (Figure 56 a); two machine-cut "T-Head" brads (Figure 56 b); and one machine-cut sprig. In addition, three possible machine-cut incomplete shanks, one with head attached, were found. All appear to be fragments of common nails.

HOUSEHOLD, BUSINESS, AND PERSONAL MAINTENANCE

Earthenware

Monochrome Underglaze Transfer-Printed Ware

Vessel 1, Saucer or Shallow Bowl (Figure 56 c). This vessel is represented by two rim sherds and a small chip. The blue design is found only on the interior surface of the vessel and is colored 7.5PB 2/8. The border decoration incorporates the designs used in two patterns manufactured by Copeland: "Pagoda" and "Macaw" (Sussman 1979a:146, 155).

Vessel 2, Small Bowl (Figure 56 d). Five sherds from a small bowl with projected diameter of 205 mm were recovered from Cabin 4. They fit several other sherds recovered from the refuse area located outside but adjacent to this cabin. The blue underglaze transfer-print (7.5PB 2/8) is applied to the interior surface, forming the pattern known as "Pagoda" (Sussman 1979a:146, 155).

Glassware

Transparent Bottle Glass (Figure 56 e). A single sherd of transparent glass from the side panel of a rectangular bottle was recovered from the base of the firebox in Feature 2. It is covered with an iridescent patina and measures 39.82 mm by 36.70 mm by 4.14 mm. It may be part of a patent medicine bottle.

Facetted Glass Pendant (Figure 56 f). A single transparent, facetted, tear-drop-shaped glass pendant was recovered from Feature 6. The proximal end is broken, but the remainder is 26.48 mm in length, with a maximum diameter of 18.08 mm. This may have served as a decoration suspended from the border of an oil-lamp shade of the type in common domestic use during the last half of the nineteenth century.

Metal Handle

A heavily oxidized ferrous metal handle (Figure 56 g) from an eating utensil, or possibly a knife bolster, was recovered from Feature 3. A small round hole for an attachment pin is located in the middle of the dorsal surface. The specimen measures 89.06 mm by 24.68 mm by 1.38 mm.

Metal Strap Fragments

Three ferrous metal strap fragments (Figure 56 h) were recovered from Cabin 4. They measure 30.62 mm by 18.86 mm by 2.90 mm, 13.26 mm by

10.08 mm by 3.54 mm, and 159.28 mm by 29.18 mm by 1.66 mm. One was found in Feature 3 and two in Feature 5. The specimen from Feature 3 has one hole punched along the broken distal end. These straps may have served as reinforcements for a crate or chest. However, all three vary in size and may have been used on three separate articles.

DRESS AND ORNAMENTATION

Buttons

Group II, Type 1, Shell Button (Figure 56 i). A Group II, Type 1 shell button, 9.34 mm in diameter and 1.19 mm thick, was recovered from Feature 5. This style and size of button was common on ladies' blouses and men's shirts.

Group III, Type 1, Bone Button (Figure 56 j). Similar to those from Cabin 3, this button was also recovered from Feature 5. It is 14.04 mm in diameter and 3.77 mm thick.

Group IV, Type 5, Metal Button (Figure 56 k). A metal button of Variety 2, from the same feature, has a face of ferrous metal rather than brass. It is 16.66 mm in diameter and 3.45 mm thick. Due to heavy oxidation, the inscription on the back of the button cannot be deciphered.

Hard Rubber Comb

A complete black hard-rubber composition louse comb (Figure 56 l) was excavated from Feature 5. It measures 76.80 mm in length, 42.00 mm in width, and 2.06 mm in thickness.

Clasp Fragment

A possible clasp fragment (Figure 56 m), pressed from thin sheet brass was recovered from Feature 3. It is in the shape of a horse's head enclosed by a horse shoe. The specimen, which may have been associated with an item of clothing, measures 26.28 mm by 17.02 mm by 5.56 mm.

MISCELLANEOUS UNIDENTIFIED OBJECTS

Miscellaneous Clay Object. A piece of partially fired clay with two round, symmetrical perforations was recovered from Feature 3. The function of the object, which measures 23.67 mm by 15.84 mm by 4.42 mm, is uncertain.

NATIVE INDUSTRIES

Chipped Stone

Although stone artifacts were recovered during the excavation of

Cabin 4, they cannot be shown to be contemporaneous with the historic occupation. In fact, much of the sample was found clearly associated with the undisturbed Ah soil horizon upon which Cabin 4 was built. Since debitage of the same type of stone was mixed with historic material, much of it as a consequence of recent cultivation, it is suggested that all stone tools and debitage at this cabin are prehistoric.

The primary activity indicated by the lithic sample appears to have been biface production. Two biface fragments of burned shale were found, as well as 41 thinning flakes of the same meterial.

A single unburned grey shale biface fragment and five thinning flakes were found. One core of grey and red partially burned shale was recovered.

Red quartzite was also used as a raw material in biface production, represented by one biface fragment and nine flakes.

A number of additional flakes did not have any corresponding tools or tool fragments. Included were seven dark grey quartzite flakes, five quartzite flakes in a many colors, and two quartz flakes. No stone artifacts found at this cabin gave any indication as to age or cultural affiliation.

THE ARTIFACTS FROM THE REFUSE AREA ADJACENT TO CABIN 4

When a bulldozer began clearing brush adjacent to Cabin 4 (Figure 4), a number of artifacts, faunal remains, and ash concentrations were uncovered. Most material appeared just below the decomposed leaf layer overlying the A soil horizon. All visible cultural material was collected, and deposits in areas of artifact concentration were screened.

Most materials were discovered within an area approximately 30 feet (9.14 m) west and 15 feet (4.57 m) south of Cabin 4. In addition, a number of artifacts were recovered from the cultivated areas adjacent to the north wall of the structure.

Since some artifacts, such as ceramic sherds, were identical in pattern, or fit those recovered from the cabin, and since surveys suggested that no other structure was located within 100 metres, the artifact sample from this bulldozed area is assumed to have originated in Cabin 4.

HUNTING

Ignition Parts and Ammunition

Gunflint (Figure 57 a). A heavily used, burned gunflint measures 31.02 mm in length, 23.60 mm in width, and 9.52 mm in thickness. Large flints such as this one could have been used in the larger-sized flint locks common in many Northwest trade guns, many of which continued to be furnished with flint ignition systems well into the 1880's. These larger flints could also have been used with steels for fire making.

Rimfire Cartridge Case (Figure 57 b). A spent copper rimfire cartridge case was found. The head has a raised "H" stamped within a

circle, and the rim bears two opposed indentations made by a gunbolt with a double firing pin. This case is a .44 calibre Henry flat for use in the Henry lever-action rifle and the model 1866 brass-framed Winchester rifle and carbine.

Lead Bullet (Figure 57 c). An expended lead bullet with an impact-modified distal end was recovered. The base is closer to unfired condition, except that it bears the reverse impression of the bands and grooves of the firearm that discharged it. This base measures .4375 calibre and the bullet weighs 202 grains (13.07 grams). Two cartridges that used bullets of similar dimensions and weights during the mid-1870's were the .44 calibre Henry flat mentioned above and the .44-40 Winchester centrefire for use in the model 1873 Winchester rifle and the Colt Frontier revolver (Logan 1959:68, 137)

CONSTRUCTION, BLACKSMITHING, AND CRAFTS

File Tang

A steel file tang (Figure 57 d) was recovered from the refuse area. No manufacturer's stamp is present.

Forged Iron Nail

Rose-Head Forged Nail Fragment (Figure 57 e). A single hand-forged rose-head nail with an incomplete shank was found. It measures 36.30 mm in length with shank 4.82 mm in width and 4.44 mm in thickness.

Machine-Cut Iron Nails

Flat-Head Cut Nail Fragments (Figure 57 f). Five incomplete machine-cut common nails were found, including three with flat heads, one shank with missing head, and one mid-section.

Cut Sprig (Figure 57 g). A single L-head sprig was recovered from the refuse area. This specimen appears to have been burned, most likely in the cabin fireplace, and subsequently discarded with the ashes.

Miscellaneous Hardware

Staples (Figure 57 h). Five metal staples were found, all apparently cut from sheet metal and probably used to hold together a wooden crate. All examples were burned, suggesting the object to which they were attached was used as fuel.

Rivet (Figure 57 i). A single copper male rivet was found. It appears unmodified and probably was not used. It may represent an artifact that was lost rather than discarded purposely.

HOUSEHOLD, BUSINESS, AND PERSONAL MAINTENANCE

Earthenware

Monochrome Underglaze Transfer-Printed Ware

Vessel 1, Bowl (Figure 58 a). This vessel is represented by 30 sherds, five from the interior of Cabin 4 (Vessel 2, page 171) and 25 from the refuse area. The projected diameter of the bowl is 205.00 mm with a height of approximately 44.65 mm.

The reconstructed portion of the bowl is decorated on the inner surface with a blue (7.5PB 2/8) underglaze transfer-print design of the "Pagoda" pattern (Sussman 1979b:155). A sherd from the bottom of the bowl has the letters "COPEL . . ." pressed into it. This represents the British manufacturer, Copeland.

Vessel 2, Bowl (Figure 58 b). This vessel is represented by 64 tiny sherds. It has a diameter of approximately 200.00 mm and is decorated on the inside surface only with the Copeland pattern "B 700" (Sussman 1979b:64). On the bottom of one sherd painted in green letters is the inscription "COPEL . . ." and the number "15" in blue. Color of the print is 7.5PB 2/4.

Vessel 3, Cup (Figure 58 c). This vessel is represented by 30 sherds. The cup has a diameter of approximately 100 mm, but, due to fragmentation, the height cannot be measured. Decoration is found on both the interior and exterior surfaces and consists of the pattern known as "Ivy," made by W. T. Copeland (Sussman 1979b: 135-136).

Glassware

Glass Bottle Fragments

Bottle 1 (Figure 58 d). A series of 14 subsequently reconstructed glass sherds, most of which have been melted, were associated with an ash concentration. Most of the recovered portion of the neck and sides of the bottle are melted, but portions of the base are still identifiable. This base, made from light green transparent glass, has a pontil mark and appears to have been free-blown.

Bottle 2 (Figure 58 e). A partial rim from a wide-mouthed bottle was reconstructed from five sherds. The vessel was made from transparent sunburst amethyst glass. The projected diameter of the mouth is 41.12 mm, but neither the size nor the shape of the bottle can be determined.

Bottle 3 (Figure 58 f). One moulded neck sherd and one thick body sherd of pale green transparent glass were found. They may represent a segment of a small patent medicine bottle.

Bottle 4 (Figure 58 g). A shoulder and neck sherd of a partially melted dark olive-colored glass were recovered. The bottle which they represent was either a wine or a beer bottle of the type made between 1820 and 1920 (Steer 1977:186).

Tumbler (Figure 58 h). This drinking vessel is represented by one outside bevelled rim sherd and 13 curved body sherds. The tumbler was made from clear, transparent glass with a slightly iridescent patina. The projected diameter is approximately 80 mm.

Lamp Chimney Fragment (Figure 58 i). A very thin, curved transparent glass sherd from a lamp chimney was found. Coupled with the pendant (page 174), it supports the supposition that commercially made oil lamps were used at the Buffalo Lake Métis site.

Metal Strapping

Six fragments with nail holes (Figure 59 a) appear to have served as wood-crate reinforcing. Their average width is 18.5 mm. One specimen (Figure 59 b), however, is not only wider than the previous six (22.80 mm), but thicker as well. The dorsal edge has been battered, suggesting use as a hoop on a small keg or barrel. The strap also exhibits two countersunk perforations that appear to have accomodated rivets rather than nails. Rivetting would also be characteristic of a barrel hoop. In addition, a thin ferrous metal strapping fragment was found.

Iron Container Fragment

A fragment of thin ferrous metal (Figure 59 c) was recovered from the refuse area. Traces of solder are present on one surface in a pattern suggestive of an iron can.

Fork

A complete though slightly bent three-tined ferrous metal dinner fork (Figure 59 d) was recovered. The tines and ridged shoulder are curved. The stem is round and expands slightly forward from the junction with the handle, then tapers toward the shoulder and tines. The handle is mounted with half-round pieces of incised antler attached with two ferrous metal rivets. The pommel is capped by a thin round disc of ferrous metal.

The incised design on the fork handle consists of a series of lines paralleling the long axis, separated by a series of cross-hatches.

Identical specimens were recovered at Rocky Mountain House (Steer et al. 1979:Vol. 1, 164; Vol. 2, 443, Figure 128A), excavated from the Hudson's Bay Company post occupied between 1835 and 1861. The Hudson's Bay Company's Victoria Post also yielded flatware with similarly incised handles (Forsman 1985:93, Figure 41, c-d; Losey et al. 1977b:51, Figure 36-2, 36-3).

TRANSPORTATION

Horseshoe Nails

Two hand-forged horseshoe nails (Figure 59 e) are approximately 60 mm in length.

DRESS AND ORNAMENTATION

Leather Heel Fragment

A small preserved fragment of commercially tanned leather (Figure 59 f) is possibly from the heel of a boot or shoe.

Buttons

Group I, Type 5a, Glass Buttons (Figure 59 g). Two Group I, Type 5a buttons were recovered, measuring 11.39 mm in diameter and 3.39 mm in thickness. This type of button is found on men's shirts and women's blouses. Sometimes it is covered in cloth and used on bodices of women's dresses, as observed on examples in the University of Alberta's historic costume collection

Bead Fragments

Three fragments of a single bead were found. The glass has crystallized into a translucent sugar-like consistency, in fact, deteriorated to the point where the method of manufacture cannot be determined. The original bead was probably substantial is size, as the largest of the fragments measures more than 5.60 mm in diameter. All of the larger-sized beads from the Buffalo Lake site were either wound or pressed.

RECREATION AND SMOKING

Smoking Pipe Fragment

The base of a clay smoking pipe (Figure 59 h) consisting of the stem and part of the bowl was found. The specimen was burned and partially melted, presumably in the fireplace of Cabin 4, with the result that the color was modified to a deep brick reddish-brown. The stem retains some flash from the mould in which it was formed, and at the proximal end there is a raised, encircling ring. The stem is complete, though quite short. It would have been practical to use a wood or horn mouthpiece in conjunction with this pipe.

NATIVE INDUSTRIES

Chipped Stone

During the collection of historic artifacts in the wake of the bulldozer, a few lithic artifacts, most likely of prehistoric age, were found in the refuse area. Included were a chert core, two red quartzite flakes, a light grey quartzite flake, and a translucent greenish-brown chalcedony flake exhibiting some use-modification.

DISCUSSION

In part because of the salvage exigency, information on construction methods and the dimensions and internal organization of Cabin 4 is limited. However, it was probably a one-room structure without internal partitions, approximately 26 feet long (8.00 m) and 20 feet wide (6.09 m). An interior stone fireplace was located approximately in the centre of the north wall (Figure 53). There were three external borrow-cum-storage pits, one of which was lined with bark and partly cribbed, and one internal pit which was subsequently used for trash disposal. In addition, ashes and refuse were disposed of on the surface of the ground in three more small areas within 30 feet (10 m) of the cabin itself.

Cabin 4 was located on a small, flat terrace overlooking a slough, which, during periods of slightly higher precipitation, was joined to Lynn Lake (Figures 3, 4). During the 1890's and the early twentieth century, the cabin was probably under water, as were several others located at the Boss Hill wintering site about a mile to the south (Figure 4).

The method of constructing Cabin 4 has not been determined, although there is no evidence to support the post-in-ground technique. Post-on-sill could have been used, but no indications remain. Both dovetail and saddle-notch construction were in use at this period, but again there is no structural evidence for either in Cabin 4. From the few written accounts of the time, it would appear to the writer that in all likelihood saddle-notch was used, given that wintering cabins were erected in a day or two. The size of the trees in the immediate vicinity would also govern to some extent the technique used. Cabin 4 does not seem to have had a wooden floor, but rather one of packed clay. Too little of the structure is preserved, however, for this to be certain.

Certainly, in the more permanent settlements of Lac Ste. Anne and St Albert, dovetailed corners and post-on-sill construction were common. Many of the citizens were skilled wood-workers having participated in the construction of Hudson's Bay Company buildings, and, later, buildings for both Roman Catholic and Methodist missions. At Buffalo Lake, this more sophisticated style of building may have been evident in structures occupied by some of the leading traders and perhaps the Roman Catholic Priest.

The artifact sample from Cabin 4 is also exceedingly sparse. For a structure supposedly occupied by a group of people involved in hunting, it is surprising that no artifacts related to this activity were found. Outside the structure, however, there is evidence for the use of the Henry rifle and perhaps a flintlock firearm.

Because of the expedient building methods involved, however, it is not surprising that very few artifacts relating to construction were recovered. There is evidence for use of hand-forged nails as well as machine-cut varieties, although the latter type predominates. Rather than in the construction of the cabin itself, however, many of these nails appear to have been used in carts or other wooden objects that were dismantled and burned in the fireplace, with the ashes dumped outside, or that were burned in small fires outside the cabin structure in the first place. Some of the ash concentrations outside the cabin may in fact be from fires used for such purposes as smoke-tanning, preparation or preservation of food, or insect control.

Copeland ceramics make up the entire sample from Cabin 4, from both the interior and the refuse area. Vessel types and patterns are consistent with those from Cabins 1, 2, and 3.

Glass artifacts were better represented than metal artifacts, with evidence for the use of oil lamps, drinking glasses, and flatware. The suggestion is that the occupants had brought with them most of the objects that would normally be associated with a more permanent home, for example, at Lac Ste. Anne or St. Albert. Certainly many of the breakable objects would not have travelled well unless carefully packed, and at the same time would perhaps have been too bulky to carry out on the Plains during the summer hunt.

As would be expected, all artifacts associated with transportation were found outside the house structure. This class of artifacts was restricted to horseshoe nails.

Clothing was represented by a few buttons of generally similar types to those recovered from other cabins at the site. With the exception of two found in the refuse area, all buttons were recovered from the internal pits in Cabin 4. Thus a certain pattern for the disposal of worn clothing emerges. There is also some evidence to suggest the use of manufactured leather footwear.

More artifacts related to food storage would have been expected, for example tin cans (only one fragment found) or lead foil from tea containers. The absense of the latter is surprising, since foil was common in all the other cabins.

Also, as in the other cabins, stone artifacts were found in Cabin 4. There is, however, clear evidence for prehistoric provenience, opposed to the more convincing association with historic artifacts in the other Métis cabins.

General identification of faunal material from the Cabin 4 area was not made. However, Kooyman's specific analysis is included in Appendix II.

It is interesting to note that many faunal elements, probably those of large mammals such as bison, were disposed of outside the cabin structure and were scattered on the surface rather than placed in the depressions. Teeth marks, possibly from dogs, appear on many examples.

It would appear, based on the little physical evidence that survives, that Cabin 4 was occupied at the same time as Cabins 1, 2, and 3, probably by the same group of people Likely they had the same source of supply for many possessions, such as firearms, clothing, and household goods.

CHAPTER VIII

THE ARCHAEOLOGICAL DATA, CABIN 5

The cluster of surface features consisting of mounds and depressions designated Cabin 5 is located approximately 529.30 feet (161.33 m) south of Cabin 4 and 1,101.30 feet (335.68 m) south of the north boundary of the southeast quarter of Section 14, Township 41, Range 20 west of the Fourth Meridian (Figures 4, 60 a). Thus it is located somewhat away from the main concentration of features and from the excavated Cabins 1, 2, and 3.

EXCAVATIONS AT CABIN 5

Specific Objectives

Within the framework of general objectives outlined in Chapter I, the Cabin 5 area was selected for excavation in an effort to satisfy the following specific objectives:

(1) To demonstrate or disprove cultural and temporal continuity with the previously excavated cabins at the Buffalo Lake Métis site.

(2) To reinforce hypotheses on fireplace orientation with respect to a pattern tentatively discerned in Cabins 1, 3, and 4.

(3) To support additional inferences regarding the internal organization of Buffalo Lake Métis cabins.

(4) To test hypotheses of annual or seasonal rejuvenation of fireplaces (with implications for re-occupation of cabins) on features where this had not hitherto been clearly ascertained.

(5) To further test the hypothesis of seasonal or annual re-excavation in new localities of borrow-storage-refuse pits.

(6) To further investigate patterning in refuse disposal with an eye to generating hypotheses of sociocultural differentiation (Carillo 1977; South 1977a; 1977b; Schiffer 1977).

(7) Possibly to link sequential use of fireplaces with sequential use of refuse pits, for example through the recovery and identification of conjoinable artifacts or faunal remains.

(8) To further discriminate primary and secondary refuse disposal, particularly with regard to interior refuse pits, and to further investigate the fireplace as a refuse disposal receptacle.

(9) To increase comparability of house units within or without the Buffalo Lake Métis site through focussed comparison of the above selected sub-units. Possibly to suggest relative homogeneity or variation, with implications for ethnic or household-organization variability.

(10) Through additional recovery of artifacts, to further discriminate a Late Nineteenth Century Métis Artifact Pattern, distinguished, for example, from an Early Fur Trade Artifact Pattern (Nicks 1970; Forsman and Gallo 1979).

Excavation Methods

Unlike the previous four Métis cabin localities, Cabin 5 appeared to be relatively undisturbed by agricultural activity or by pothunters. Much credit for this is due to the landowner, Ron Rider, who actively protected this portion of the site for several years. The position of Cabin 5, located away from the main concentration of buildings, may also have served to protect it.

After clearing the area of underbrush, it was possible to recognize 15 features, consisting of a series of mounds, depressions, and linear ridges. These were designated according to their visibility prior to excavation.

Excavation techniques were similar to those described for Cabin 4. After establishing a metric grid over the designated area, three two-metre by four-metre excavation units were investigated. The units were designated by the coordinates of their northwest corners: units ON,4W; ON,2E; and 6S,OW.

The first unit encompassed Feature 7, a clay ridge, and was established to reveal the northwest corner of the structure, to determine the method of construction, and to investigate the cabin interior for wooden flooring. The unit also included a small portion of Feature 2, a large depression along the north (actually more nearly northwest) wall and exterior to the main structure, and half of Feature 11, a small exterior depression.

Although a portion of Feature 7 was exposed in 1982, little information was gained from the small amount of excavation in Features 2 and 11. Wood preservation was too poor to determine beyond a reasonable doubt what construction method was used. There was no evidence for the presence of wood flooring, although this, too, is not necessarily conclusive.

The second unit was established in order to locate the east wall of the cabin, to test for wooden flooring, and to establish the function and dimensions of Feature 6, a large depression.

The third excavation unit was established to isolate Feature 10, the southwest corner of the cabin, and to determine the method of construction.

Application to complete the investigation of Cabin 5 and its environs during the 1983 field season was not approved by the Archaeological Survey of Alberta.

THE FEATURES OF CABIN 5

The Wall Lines

In contrast to many other cabin remains throughout the site, the general outline of Cabin 5 was quite pronounced. This was probably owing in part to the large amount of clay used to plaster the walls. Eventually, this clay was deposited as a series of ridges forming a square encompassing approximately the area occupied by the original structure. Inside this square, and located half way between the northeast and northwest corners, was a large mound. Based on these outlines and this mound, the various visible surface features were designated as follows (Figure 60 b) (All readings are relative to stake 4N, 0W, taken as 0 elevation, since it was one of the few stakes from which all features were visible.)

Feature 1, Large Mound

This mound was approximately 10 feet (3.05 m) in diameter and 1.79 feet (55.00 cm) high. Because of its size and form, the granitic cobbles seen eroding from it, and its location adjacent to and within apparent wall lines, it was assumed to have been a fireplace.

Feature 2, Large Depression

This feature was located to the northwest and adjacent to Feature 1. It measured approximately 11.04 feet (3.37 m) by 8.73 feet (2.66 m) and was 2.60 feet (79.3 cm) deep.

Feature 3, Depression, and Feature 3A, Mound

The depression measured 12.24 feet (3.73 m) by 8.17 feet (2.49 m) and was 3.35 feet (1.02 m) deep. It was bordered by a mound of clay (Feature 3A), 15.52 feet (4.73 m) from northwest to southeast by 12.29 feet (3.75 m) from northeast to southwest. This feature perhaps represented a separate cabin or perhaps a large cellar associated with Cabin 5.

Feature 4, Small Depression

This feature measured 4.57 feet (1.39 m) by 4.51 feet (1.38 m) and is 1.24 feet (37.8 cm) deep. Because of its apparent location, it was thought to represent an external borrow-cum-refuse pit.

Feature 5, Small Depression

This depression was similar to Feature 4, but located slightly farther away from the larger features thought to be associated with the main cabin structure. It measured 3.65 feet (1.11 m) by 3.57 feet (1.09 m) by 1.17 feet (35.66 cm) deep, and was thought to be the remains of a privy.

Feature 6, Large Depression

This feature (Figure 60 b) was located within what was thought to be the main cabin structure. It measured 6.86 feet (2.09 m) by 5.86 feet (1.79 m) and was 1.50 feet (45.72 cm) deep. On the basis of data from previously excavated cabins, it was hypothesized that Feature 6 functioned sequentially as a borrow pit, storage pit, and waste disposal unit.

Excavation revealed a very deep interior pit (Figures 61, 62 a) initially dug to obtain clay for construction of the fireplace and perhaps chinking of the cabin. The upper portion of this feature was excavated through sand; however, the lower portion intersected a very thick and pure lens of clay (Figure 61).

This pit appears to have been used for a time as an interior storage cellar, based on the assumption that certain artifacts recovered from the bottom, such as the unfired 44-40 cartridges, were probably not intentionally discarded. At this time the pit appears to have been covered by a large wooden trap door joined with nails. Bits of rotted wood and rusted nails were recovered from the refuse in the pit and may have come from this trap door. More substantial pieces of rotted wood with no associated nails (Figure 61) probably represent segments of collapsed roof or wall.

Subsequent to its use as a storage cellar, Feature 6 ultimately served for refuse disposal, particularly evidenced in the upper 40 centimetres of deposition (Figure 61). The reasons a storage cellar would become a refuse pit have not been determined. In the present case, water table and soil permeability are important factors to consider. The bottom of Feature 6 was excavated into relatively impermeable clay, but the upper deposits were in very permeable sands. Possibly, then, following the spring abandonment after the first winter of occupation, the bottom of the cellar filled with water. There is also evidence that the sandy deposits above slumped, filling part of the original excavation. Both the inundation and the slumping would have made safe, dry storage impossible, but would make trash disposal feasible.

Features 7, 8, 9, and 10, Clay Ridges

Clay ridges appeared to represent the four corners and the four walls of the main Cabin 5 structure, forming a square approximately 25 feet (7.62 m) to a side. Elevations taken from stake ON, 4W to the four corners ranged between .33 feet (10.06 cm) above to .32 feet (9.75 cm) below.

At Feature 10, almost no wood from the corner was preserved. However, the earth exhibited differential water-absorption characteristics, and the original corner of the building showed as a dark stain after the excavation unit was soaked with water and allowed to dry slowly (Figure 62 b). As in the other two excavation units, there was no evidence of planking or other type of wooden floor.

Feature 11, Small Depression

This feature may have served as a stairwell or access to Feature 2. It was 2.54 feet (77.42 cm) in diameter and less than two feet (60.96 cm) deep.

A number of other features were noted during the initial mapping of the site. These features include the following (Figure 60 b):

Feature 12, Depression

This feature, apparently associated with a separate structure, appeared to be square, measuring 4.32 feet (1.32 m) to a side.

Feature 13, Ridge

This feature appeared to be a slightly raised mud-plaster line outlining a structure 15.06 feet (4.59 m) by 12.62 feet (3.85 m) .

Feature 14, Ridge

This feature was a slightly raised mud-plaster wall line that appeared to outline an addition to Cabin 5. The addition was approximately 4.51 feet (1.38 m) shorter along its east wall than was the corresponding west wall of Cabin 5, which it shared. This addition measured approximately 21.62 feet (6.59 m) by 15.12 feet (4.61 m) and did not appear to contain either a fireplace or a storage-refuse pit.

Feature 15, Ridge

This isolated ridge, associated with Features 2 and 11, perhaps represented the remains of a wall line. It formed a line parallel to the north wall of Cabin 5, 13.75 feet (4.19 m) long and 12.92 feet (3.94 m) to the north. It lined up with Feature 7, the northwest corner of Cabin 5 and appeared to envelope Features 2 and 11. It also ran parallel to the south wall of the mound, Feature 3A.

Discussion

Largely from surface indications, the 15 associated features arbitrarily designated Cabin 5 appear to represent a series of joined or separate structures much more complex in architecture and presumed function than other hivernant structures investigated by archaeologists to date. Six such structures may be represented:

(1) A main cabin, 25 feet (7.62 m) square, was enclosed by Features 7, 8, 9, and 10, and contained a large fireplace (Feature 1) approximately centred on an interior wall (typical of French log cabin construction techniques). Within this main cabin a large storage/refuse pit (Feature 6) was located.

(2, 3) Two additional rooms appear to have been joined to the main cabin. The first, located along the west wall (Feature 14), measured 22 feet (6.71 m) by 15 feet (4.57 m). There was no surface indication of function. The second addition was located along the north wall, measured approximately 14 feet (4.27 m) by 13 feet (3.96 m), and encompassed Features 2, 11, and 15. On the basis of the large depression, this addition may have served as a large storage room, accessible either from the main cabin or from outside. Thus, three of the hypothetical six structures appear to have been attached.

(4) The fourth structure, represented by Features 3 and 3A, may have been a separate cabin measuring 16 feet (4.88 m) by 12 feet (3.66 m), with a fireplace and a large interior depression. Alternately, it may have been a large detached storage building. Without excavation, it has not been determined whether the mound was from a fireplace or was simply backfill from the depression.

(5) The fifth structure was also detached. It was represented by Features 12 and 13 and measured approximately 12.5 feet (3.81 m) by 15 feet (4.57 m). It may have served either as a living structure or a storage building.

(6) The sixth structure, represented by Feature 5, may have been a privy.

Several types of structures for which there is as yet no archaeological evidence were probably located on the site. These might include: stables (possibly a function of Feature 14); stages for storage of meat, dog harness, carrioles or other equipment; drying racks; and perhaps saw pits.

THE ARTIFACTS OF CABIN 5

Excavation of Cabin 5 yielded a sample of 1,726 artifacts. Hopefully they reflect those activities associated with the main structure, though not necessarily those pertaining to the detached features. The majority of the artifacts were recovered from Feature 6.

HUNTING

Gun Parts

Trigger (Figure 63 a). A complete trigger from a black powder muzzle-loading firearm was recovered from Feature 6. It is identical to

the trigger from a Parker, Field, and Company flintlock trade musket with a lock plate dated 1867, located in the History Collection of the Provincial Museum of Alberta. However, similar triggers were used on firearms of much earlier manufacture.

The trigger was recovered from the organically stained earth overlying the cellar fill proper, and it was probably deposited or slumped into the depression from the adjacent floor or wall rather than being intentionally discarded. Such items as this may have been kept as spare parts for gun repairs.

Ignition Parts and Ammunition

Percussion Caps (Figure 63 b). Two copper percussion caps were recovered. A fired specimen was from the cabin floor, associated with Feature 10. An unfired specimen, probably representing accidental deposition, was recovered from the cellar fill of Feature 6. Both examples are similar in size to the number 11 percussion cap used with percussion shotguns and Plains-type rifles. Firearms such as the military and police Enfields and Springfields used the much larger "top hat" percussion cap.

Percussion Cap Box Lid (Figure 63 c). The lid of a percussion cap box, recovered from Feature 6, was manufactured by Ely Brothers in London, England, and is made from tin-plated ferrous metal. The lid is 40.85 mm in diameter and 6.18 mm high, and the metal is .71 mm thick. Comparative examples in the Provincial Museum of Alberta's History collection are sealed with a dark brown varnish. A medium-green paper label glued to their side indicates in black lettering that the box contained 100 percussion caps.

Lead Shot (Figure 63 d). Four lead shot were found, three from the southwest interior corner of the cabin and one from Feature 6. Two pellets are of "BB" and two of "B" size, and all were most likely fired from a muzzle-loading shotgun.

Rimfire Cartridge Case (Figure 63 e). A single copper rimfire cartridge case from a .44 calibre Henry flat cartridge was recovered from Feature 6. The head has a raised encircled letter "H," while the rim exhibits double firing-pin marks opposite each other. The head is bulged outward due to too much headspace in the Henry or Winchester rifle that fired it.

Centrefire Cartridges (Figure 63 f). A total of eight unfired .44-40 calibre centrefire cartridges were recovered from the bottom of Feature 6. They were found together wrapped in a piece of cloth identified as cotton (Barbara Schweger, personal communication). Such cartridges were manufactured for use interchangeably in the model 1873 Winchester lever-action repeating rifle and the Colt Single-Action Army revolver.

Because the cartridge cases still contained black powder, they are badly deteriorated, while the bullets are affected with advanced lead disease. No headstamp is in evidence.

These cartridges appear to have been stored in the bottom of the cellar rather than thrown away. They were subsequently covered by slumping sand from the upper deposits.

CONSTRUCTION, BLACKSMITHING, AND CRAFTS

Axe Head Fragment

A forged iron axe head (Figure 63 g) was recovered from Feature 6 just below the east wall sill log of Cabin 5. The head is split lengthwise and is missing the cutting edge. The poll is well battered. The axe head measures 107.30 mm in length, 62.68 mm in width, and 13.70 mm in thickness, and it weighs 237.13 g.

It is possible that this axe head broke during the construction phase of Cabin 5.

Half-Round File Fragment

A long mid-section of a half-round file was found (Figure 63 h). It measures 146.42 mm in length, 11.30 mm in width, and 6.98 mm in thickness. The cutting surface is very fine, though presently obscured by oxidation.

Possible Tool Handle

Three pieces of squared hardwood were recovered (Figure 63 i). They may have served as tool handles or parts of tools, but their state of preservation precludes positive identification.

Forged Iron Nail Fragments

Four wrought headless nail shanks (Figure 63 j) were recovered from Feature 6. All have bits of preserved wood adhering to their oxidized surfaces

Machine-Cut Iron Nails

Flat-Head Cut Nails (Figure 63 k). Of the 60 machine-cut nails found, almost all examples were flat-headed common nails. However, a variety of sizes was represented. A total of 10 nearly complete two and one-half inch (63.5 mm) nails was found. In addition, two two inch (50.8 mm), three one and three-quarters inch (44.3 mm), four one and one-half inch (38.1 mm), and fourteen one and one-eighth inch (28.6 mm) nails were found. Also included were 12 flat-head machine-cut common nails with broken shanks and 15 headless machine-cut shanks of various lengths.

Cut Sprigs (Figure 63 l). Two one inch (25.4 mm) sprigs were recovered.

Cut Tack (Figure 63 m). One tack, seven-sixteenths inch (11.3 mm) in length was found.

Wire Nail Fragment

One broken wire nail (spike) with a 7.0 mm diameter shank was found (Figure 63 n).

Miscellaneous Hardware

Staple Fragments (Figure 63 o). Seven fragments of stamped ferrous metal staples were recovered. They may have served to attach metal reinforcement strapping to wood crates.

Heavy Barrel Hoop Fragment (Figure 63 p). A long segment of heavy iron barrel hoop was recovered from the southeast cabin floor area encompassed in the excavation unit for Feature 6. One edge exhibits considerable battering, which might indicate how it was fitted tightly over a large tapered object such as a barrel. There are three perforations near one of the broken ends. One of these perforations still retains a portion of a wood screw.

The hoop measures 615.00 mm in length, 36.50 mm in width, and 3.80 mm in thickness. The screw is approximately 6.5 mm in diameter where it pierces the hoop.

HOUSEHOLD, BUSINESS, AND PERSONAL MAINTENANCE

Earthenware

Monochrome Underglaze Transfer-Printed Ware.

Vessel 1, Plate (Figure 64 a). Two fitted sherds form part of the bottom of a small (six inch?) plate. "COPEL . . ." is stamped on the bottom surface. A design is applied to the inner surface only, and consists of the Copeland pattern "Continental Views No. 526" (Sussman 1979b:98; Steer 1977). The color is 6.25PB 4/12.

Vessel 2, Plate? (Figure 64 b). This vessel is represented by a single small rim sherd with a plain white exterior and a decorated interior surface. The pattern is either "Continental Views" or "Louis Quatorze," both made by Copeland (Sussman 1979b:92, 145; Steer et al. 1979:362-363). The color is 7.5PB 3/8.

Vessel 3, Undetermined (Figure 64 c). A burned rim sherd with a design similar, though perhaps not identical, to that on the previously described rim sherd was recovered. Burning has destroyed the glaze, altered the color of the print, and obliterated much of the design. The decoration, perhaps a Copeland pattern, has been applied to the inner surface.

Vesssel 4, Undetermined (Figure 64 d). This vessel is represented by two small rim sherd chips. Although no portion of the decoration is present, a flowed blue color (5PB 5/6) from the transfer print appears under the glaze, and it is sufficiently different from the color of other vessels to warrant a separate designation

Polychrome Underglaze Sponge-Stamped Ware

Vessel 5, Saucer (Figure 64 e). This vessel is represented by over 100 tiny sherds, forming approximately 25 per cent of the saucer. The decoration is found on the rim of the inner surface and consists of a sponge-stamped row of purple flowers (7.5PB 4/6), bordered above and below by single hand-painted green lines (7.5G 3/6), that encircle the vessel interior. Vessel diameter is 150 mm and height is 23.41 mm. The design is similar to that on "Portneuf" ware (Finlayson 1972).

Vessel 6, Saucer (Figure 64 f). This vessel is represented by 14 sherds and chips. It is essentially the same as Vessel 5, except for the shade of color in the decoration and in the glaze. The standard flowers are 10PB 4/8, while the painted borders are 7.5G 3/4.

Vessel 7, Cup (Figure 64 g). This vessel is represented by six sherds, four of which fit together. The projected diameter is approximately 85.00 mm. Decoration consists of narrow hand-painted green border lines (7.5G 3/4) just below the rim on both the interior and exterior surfaces. Below this border on the exterior of the cup is a sponge-stamped purple-blue flower design (10PB 4/10), similar to that applied to Vessels 5 and 6. The vessel is insufficiently complete to determine if this floral pattern is repeated on the exterior of the cup.

Vessel 8, Undetermined (Figure 64 h). This vessel is represented by a single sherd with an applied Portneuf-type sponge-stamped pattern consisting of a yellowish-red flower on a white background. The color of the flower is 2.5YR 2/4.

Hard-Paste Earthenware or Stoneware

Vessel 9, Possible Cup (Figure 64 i). This vessel is represented by two handle fragments, possibly from a cup. The fragments are made from a very hard white paste with a partially vitrified surface. They are decorated with a hand-painted gold stripe applied over glaze.

Vessel 10, Possible Teapot (Figure 64 j). This vessel is represented by a small handle fragment of stoneware with a reddish-brown paste. The glaze is an iridescent copper color characteristic of lusterware.

Miscellaneous Soft-Paste Earthenware

Vessel 11, Undetermined (Figure 64 k). Four small sherds are from an earthenware vessel or object (possibly a pipe bowl?) with a soft red

paste. The inner surfaces are unglazed, while the outer surfaces appear burnished and finished by the application of a slip. The color of the unglazed surface is 5YR 7/6, while that of the exterior surface is more variable, between 5YR 6/8 and 7.5R 5/8.

Glassware

Clear Bottle Glass (Figure 65 a). Two melted clear glass sherds were found, apparently from a bottle or bottles of undetermined size and function that were melted in the fireplace.

Amber Bottle Glass (Figure 65 b). A single sherd of patinated amber glass was recovered. It appears to be from a small eight-sided bottle that may have contained patent medicine.

Pale Green Bottle Glass (Figure 65 c). A single sherd of clear glass has a pale green hue, an oxidized surface, and a thin iridescent patina. The sherd appears to have come from a small bottle.

Mirror Glass (Figure 65 d). A sherd from a round mirror with projected diameter of approximately 80.00 mm. was found. The silvered surface has eroded away, leaving the sherd transparent.

Sheet Metal Artifacts

Lead Foil (Figure 65 e). Approximately 68 fragments of lead foil were recovered. Of these, one large fragment has solder along one edge and two others are joined by solder. Similar foil was used to line tea containers until relatively recent times.

Two foil fragments of thicker gauge were also found. Such thicker foil was often used to package black powder, the empty containers usually being melted down and cast into bullets after the contents were used or transferred to the more convenient powder horn.

Food Container Seal (Figure 65 f). Two tin foil fragments, when fit together, form the major portion of a seal from an imported container of preserves or condiments. The stamped raised inscription on the joined fragments reads:

CROSSE & BLACKWEL-
PURVEYORS TO HER MAJE---
SOHO LON---
BETTS-?

(Dashes indicate the possible number of missing letters.)

Food Container Seal (Figure 65 g). A second tin foil seal, possibly from a food container, reads:

SUPERIOR C-?

This may represent Superior Chutney, a common nineteenth century condiment.

Wire Artifacts

Straight Pins (Figure 65 h). Four straight pins were recovered, two 28 mm in length and two 36 mm in length. All have been protected from oxidation by a plating of metal such as tin or nickle.

Sewing Needles (Figure 65 i). A complete large ferrous metal sewing needle was found, 62.66 mm in length. In addition, the mid-section of a fine sewing needle was recovered. Unlike straight pins, needles were not plated, and consequently these are heavily oxidized

TRANSPORTATION

Horseshoe Nail

A single horseshoe nail (Figure 65 j) was recovered from Cabin 5. The shank is half twisted just below the head.

DRESS AND ORNAMENTATION

Buttons

Group I, Glass Buttons

Type 3 (Figure 66 a). One broken Type 3 glass button was recovered from Cabin 5. (See Chapter IV for type descriptions.) It is 10.34 mm in diameter and 3.35 mm thick.

Type 5a (Figure 66 b). Six buttons of this type were found. Their diameter ranges from a minimum 10.65 mm to a maximum 11.11 mm, with an average of 10.83 mm. Thickness ranges from 2.69 mm to 3.44 mm, with an average of 3.08 mm.

Type 5b (Figure 66 c). Three buttons of this type were found, with average diameter of 11.60 mm and thickness of 3.81 mm.

Type 7 (Figure 66 d). Type 7 are white sew-through buttons with decoration consisting of cast-in ridges or ribs radiating from the central recess, which contains four holes. They are plano-convex in cross section. One button of this type was recovered from Cabin 5. It measures 11.21 mm in diameter and is 3.39 mm thick.

Type 8 (Figure 66 e, f). Type 8 are glass, high-domed buttons with cast-in wire shank.

(a) Plain White. These buttons have been observed on bodices of nineteenth century (1870s) women's dresses in the University of Alberta's historic costume collection. One example (Figure 66 e) was found, 11.69 mm in diameter and 8.22 mm in thickness.

(b) Inlaid Polychrome. One example (Figure 66 f) is made from black glass with black and white glass inlay. A central rosette consists of a floral motif with inlaid rose glass middle and with green glass background. The cast-in wire shank has been broken off. Besides serving on women's dresses, similar buttons have been found on gaiters and shoes (Schiff 1979:30, 32).

Group II, Shell Buttons

Type 2 (Figure 66 g). Two Type 2 shell buttons were recovered. The first is a smaller example, with diameter of 9.41 mm and thickness of 1.33 mm, but otherwise the same as the Cabin 3 specimens. The second is 11.61 mm in diameter and 1.74 mm in thickness. A layer of shell has chipped off the surface, leaving visible only a faint outline of the incised lines.

Type 3 (Figure 66 h). One example was found, measuring 9.50 mm in diameter and 1.41 mm in thickness.

Type 5 (Figure 66 i). These are relatively thick two-hole sew-through shell buttons with a pronounced central concavity and a convex back. The two examples recovered measure 11.23 mm and 11.35 mm in diameter and 2.86 mm and 2.34 mm in thickness.

Group III, Bone Buttons

Type 3 (Figure 66 j). These medium sized sew-through bone buttons with four holes are similar to Type 1, but smaller. They were probably used as vest and sleeve buttons rather than coat buttons like their larger counterparts. The one example from Cabin 5 is 14.50 mm in diameter and 31.6 mm in thickness.

Type 4 (Figure 66 k). These are the same general size as Type 3 bone buttons, but the central recess is bordered by a narrow raised circle and contains five holes. The single example is 14.47 mm in diameter and 2.20 mm in thickness. The back of the button is made up of cancellous tissue, which may account for its thinness. Similar buttons were used by the United States Military (Olsen and Campbell 1962:348-349).

Group IV, Metal Buttons

Type 2 (Figure 67 a). One specimen was found, 27.36 mm in diameter and 1.72 mm thick.

Type 4a (Figure 67 b). A single specimen is 17.30 mm in diameter and marked "DOUBLE RING EDGE."

Type 5b (Figure 67 c). The single example has a brass back coated with black enamel and a ferrous metal face. The ferrous metal attachment pin has been completely oxidized. Originally cloth covered, the button measures 16.75 mm in diameter and 2.15 mm in thickness. Laboratory analysis proved the cloth to be wool (Lillian Hill, personal communication).

Type 5c (Figure 67 d). This two-piece button with brass front and back has a double cross-pin in the central hole for attachment. The face is stamped with eight six-pointed stars, and the central hole is bordered by a small circle of raised reeds. The back is marked "JS & CO. PATENT." The single example found is 17.61 mm in diameter and 2.82 mm in thickness.

Type 5d (Figure 67 e). This button is the same as Type 5c except for size. The single example measures 13.92 mm in diameter and 2.59 mm in thickness. Both types appear to have originally been coated in black enamel which has nearly all worn off.

Type 8a (Figure 67 f). The single example is 13.65 mm in diameter and 3.85 mm thick. Impressions of woven fabric on the face, suggest that it was once covered with a worsted material.

Type 9 (Figure 67 g). This single one-piece sew-though black enamel button has two holes located in a central oval recess. The back is stamped "JN & CO. BIRMINGHAM." It measures 16.95 mm in diameter and 2.56 mm in thickness.

Type 10 (Figure 67 h). This is a two-piece gilded brass "Golden Age" button (Schiff 1979). The front has a raised floral design against a basket weave chequered background, while the back is stamped "EXTRA SUPERIOR QUALITY." Soldered to the back is a wire eye for attachment. The single example measures 22.24 mm in diameter and 5.74 mm in thickness. Such fancy gilded buttons were made to be worn on men's coats.

Miscellaneous (Figure 67 i). The back of a possible two-piece button was recovered. It is made of ferrous metal and has a brass and copper rivet-head attachment. The diameter of the base is 17.42 mm.

Cloth

Several small pieces of cloth were recovered, some preserved on buttons and some associated with the cache of cartridges. Analysis and identification of textiles from all cabins was conducted by Barbara Schweger and is detailed in Appendix I.

Although very little was preserved, a few samples of fabric that had lain in contact with copper, brass, or iron, or that had been carbonized by partial burning, survived at Buffalo Lake.

Leather

Leather Heel (Figure 68 a). A piece of commercially tanned leather boot or shoe heel was found. Although it is partially decomposed, there remains evidence of the stitching around the edges. The nail holes, as well as one fragment of a cobbler's nail, are also still evident.

Leather Fragment (Figure 68 b). A small nondescript fragment of commercially tanned leather was recovered. It may be originally from footwear or harness.

Miscellaneous Clothing Accessories

Hook-and-Eye Clothing Fasteners (Figure 68 c). Two wire fastening hooks and two corresponding eyes were recovered. One hook is made from brass, the other from ferrous metal. One eye is also made from ferrous metal, while the other eye fragment is made from brass plated with white metal.

Shoelace Eye (Figure 68 d). A single small shoe or boot lace eye was recovered, made from black-enamelled non-ferrous metal.

Hat Pin Fragment

The proximal end of a lady's ferrous metal hat pin (Figure 68 e) is mounted with a heavily oxidized ferrous metal ball.

Earring

A single two-piece drop-earring (Figure 68 f) with a shepherd's hook wire attachment for pierced ears was recovered from the depression (Feature 6) in Cabin 5. The main body is a single-piece stamping made from non-ferrous metal (probably brass) which has been plated with silver. The centre is mounted with a small red glass imitation ruby or garnet. Attached is a pendant of two-piece stamped plated brass, the lower portion of which has been broken off.

Beads

The most numerous artifacts recovered from Cabin 5 were beads. These have been classified according to method of manufacture, size, and color.

Drawn Tubular Beads

"Seed" Beads (Figure 68 g). By far the greatest quantity of beads recovered from Cabin 5 are drawn tubular glass beads. The most common is the "seed" bead, having an outside diameter of less than 2.0 mm (Conn 1968, 1969). In total, 1,357 drawn tubular seed beads were recovered, with colors represented as follows:

237 light blue opaque
218 brick red "Cornaline d'Aleppo"
206 pink opaque
184 light green opaque
155 dark green opaque
72 blue translucent
65 clear transparent
59 white opaque
57 red translucent
31 brown opaque
29 dark blue opaque
27 tan opaque
17 pale yellow translucent

"Intermediate" Beads (Figure 68 h). "Intermediate" beads, with an outside diameter between 2.0 mm and 3.0 mm, were rare on the site, with only one specimen found. It appears black in natural light, but cobalt blue through transmitted light.

"Pony" Beads (Figure 68 i). One similar "pony" bead (diameter of over 3.0 mm) was found.

Hexagonal Bead (Figure 68 j). One transparent hexagonal tubular bead was recovered from Cabin 5. It is 4.77 mm in length, 5.27 mm in width, and .93 mm in thickness. The diameter of the bore is 2.86 mm.

Wound Glass Beads

"Pony" Beads. (Figure 68 k, l). Two wound "pony" glass beads were recovered. The first (Figure 68 k) is irregular, rather elongated and bulbous at one end. It is made from transparent cobalt blue glass, now patinated. The second (Figure 68 l) is more regular in shape, made from translucent, sky-blue glass. The outer surface has been oxidized.

Pressed Glass Bead

One facetted pressed-glass bead (Figure 68 m) is made from pale yellow transparent glass. It measures 11.13 mm in length and 13.07 mm in diameter.

Metal Beads

Seventeen facetted non-ferrous metal seed beads (Figure 68 n) were recovered in excavation and subsequent laboratory screening.

A grand total of 1,379 beads of all types, sizes, and colors was recovered from Cabin 5.

MISCELLANEOUS UNIDENTIFIED OBJECTS

A complete specimen and the fragment of a ring of plastic-like material were recovered (Figure 68 o). The complete specimen is 13.10 mm

in diameter and 1.76 mm thick, with outside diameter of the central hole 8.48 mm. A slightly bevelled line is cut across the face of the ring, running more or less perpendicular to the edge, and the ring has broken through along this line.

A small, flat, tinned ferrous metal disc is perhaps a lid from a metal container.

Five scraps of oxidized ferrous metal of undetermined function were recovered.

NATIVE INDUSTRIES

Chipped Stone

Among the lithic artifacts recovered are a number of tool fragments. These include a broken tip of a biface of grey-green quartzite and a fragment of unifacially retouched quartzite cobble spall. The very smooth water-worn cortex is retained on the dorsal surface and forms the working edge of the spall. This sort of edge appears to have had functional advantages (Doll 1982:50-51).

A medium-sized unifacially worked scraper-plane is also made from quartzite, but the interior material rather than cortex forms the working edge (Doll 1982:51-53).

A bipolar split pebble is of black chert.

The remaining lithic artifacts consist of decortication flakes, biface-thinning flakes, and other detritus that may be lumped together. Included are 30 quartzite flakes, 13 quartz flakes, three chert flakes, and one petrified wood flake. All worked lithic materials could have been derived from local reworked glacial deposits in the Buffalo Lake Moraine (Doll 1982:9-13).

FAUNAL MATERIALS FROM CABIN 5

A detailed analysis of butchering by Bryan Kooyman is included in Appendix II.

In addition to reflecting similarity to the faunal samples from other excavated Métis cabins at Buffalo Lake, four new species can be added: white-tailed jack rabbit (Lepus townsendii), Nuttall's cottontail (Sylvilagus nuttallii), Canada Goose (Branta canadensis), and Red Head Duck (Aythya americana).

Other species identified from the faunal remains at the Métis site include bison (Bison bison), moose (Alces alces), beaver (Castor canadensis), muskrat (Ondatra zibethicus), snowshoe hare (Lepus americanus), pocket gopher (Thomomys talpoides), ground squirrel (Spermophilus sp.), deer mouse (Peromyscus maniculatus), shrew (Sorex sp.), meadow vole (Microtus pennsylvanicus), Snow Goose (Chen caerulescens), White-fronted Goose (Anser albifrons), Gadwall (Anas stretera), Ruddy Duck (Oxyura jamaicensis), Mallard (Anas platyrhynchos), and Sharptail Grouse (Pedioecetes phasianellus). In addition, the remains of toad (family Bufonidae), and a fish of undetermined species were found.

CHAPTER IX

THE ARCHAEOLOGICAL DATA,

SURFACE COLLECTED MATERIAL FROM CABINS 6 TO 12

INTRODUCTION

Since 1970, surface collections were made in those areas of the Buffalo Lake Métis site disturbed by agriculture or other processes. Of the 88 cabin localities recorded, cultural material was collected from the surface of seven, exclusive of the five excavated localities described (Figure 4).

CABIN 6

The location designated Cabin 6 (Figure 4), discovered during the first field season at Buffalo Lake, was situated on the south-facing end of a wooded copse, affording its occupants an unencumbered view to east, west, and south, and exposure to the winter sun.

Cabin 6 was located approximately 723.11 feet (220.40 m) south and 56.90 feet (17.34 m) west of the site datum, the northwest corner of LSD 14, Section 11, Township 41, Range 20 west of the Fourth Meridian.

A few artifacts were found eroding from the southern end of this copse, where subsurface deposits had been exposed by a trail leading to the boy-scout camp approximately 1,000 feet (305 m) to the west. In 1979, this area was chosen for a new dump to serve the nearby tourist campground on Buffalo Lake. All surface features were destroyed by bulldozer and a large trench was excavated through the middle of the cabin. This disturbance was reported, and those responsible were persuaded to secure a new location for the dump.

Fortunately, the locality had been mapped in 1970 and 1974, and based on these maps, it appears that Cabin 6 consisted of six features: a large rock pile thought to be a fireplace and rising approximately two feet (60.96 cm) above the surrounding land surface, and five adjacent depressions 0.45 feet (13.72 cm), 0.50 feet (15.24 cm), 0.80 feet (24.38 cm), 1.0 feet (30.48 cm), and 1.5 feet (45.72 cm) below the surrounding area (Doll and Kidd 1976:Figure 3).

CABIN 7

Cabin 7 was located 289.32 feet (88.19 m) west and 138.41 feet (42.19 m) south of the datum, adjacent to and just south of excavated Cabin 2. It was partially disturbed by a well-worn cow path that ran

through a portion of it. Features consisted of a rock pile (fireplace) 1.5 feet (45.72 cm) above the ground level ond one adjacent depression located to the southwest. At the time of mapping (1974) the depression was 0.50 feet (15.24 cm) deep. No cabin wall lines were visible on the surface.

CABIN 8

Cabin 8 was located 119.27 feet (36.35 m) south and 119.13 feet (36.31 m) east of the site datum. Surface features were not readily distinguishable owing to past agricultural activity and more recent use of the area by cattle. Some artifacts and faunal remains were recovered along cow paths.

CABINS 9. 10, 11, AND 12

The old Rider/Olsen farmstead (indicated by a black triangle on Figure 4) was located in the southeast corner of the southwest quarter of Section 14, Township 41, Range 20 west of the Fourth Meridian. In 1974 or 1975 it was bulldozed, since its dilapidated remains posed a hazard to cattle pastured there. At the same time, an adjacent forested area was cleared of brush (area outlined by broken lines in Figure 4). As a consequence, at least four former Métis cabin locations were exposed (Figure 4). Although agricultural activity had obliterated any above-ground features, the former locations of cabins were determined by plotting concentrations of those artifacts that were clearly similar to those associated with Métis cabins in excavated portions of the Buffalo Lake and other hivernant sites.

Cabin 9 was located approximately 1230.58 feet (375.08 m) west and 233.15 feet (71.06 m) north of the site datum. Cabin 10 was located approximately 623.86 feet (190.15 m) west and 161.62 feet (49.26 m) north. Cabin 11 was located approximately 1149.88 feet (350.48 m) west and 77.60 feet (23.65 m) north. Cabin 12 was located approximately 1236.94 feet (377.02 m) west and 377.26 feet (114.99 m) north.

Concentrations of "Métis artifacts" that marked the supposed location of cabins were often associated with burned chinking fragments, ash concentrations, and spirally fractured bison longbones or broken ribs with axe or knife marks rather than saw marks on them.

In the process of surface collecting, a large number of artifacts and faunal remains clearly associated with the twentieth century Rider/Olsen homestead were also obtained. Earthenware sherds, in particular, helped to distinguish between households occupied in the 1870s and those occupied in the early twentieth century. A similar collection was made from a former twentieth century homestead about four miles away.

It was found, particularly in the case of monochrome underglaze transfer-printed ware, that there was no overlap of patterns between the Métis and the later Euro-Canadian occupation. Thus, for example, these ceramics may serve as one useful characteristic in distinguishing Métis

sites peripheral to fur trade posts from other types of historic occupation.

Nondescript metal fragments and faunal remains proved more problematical. Many of the metal artifacts, especially, were virtually indistinguishable between Métis and Euro-Canadian occupations. Large mammal bones representing bison, horse, and domestic cow were found. Butchering marks on the cow bones generally included saw cuts and were clearly not representative of Métis practices at Buffalo Lake (Appendix II). Small mammal, waterfowl, and upland game bird bones were surface-collected. Many appeared of limited age on inspection and may have represented those hunted by the Rider and Olsen families in the twentieth century. Because of the problem of mixing, therefore, most metal artifacts and all faunal remains were excluded from the present analysis.

THE ARTIFACTS OF CABINS 6 TO 12

HUNTING

Gun Parts

Gun Barrel and Breech (Figure 69 a). A percussion muzzle-loading gun barrel and breech was collected from Cabin 12. It is approximately .72 calibre or 12 gauge, probably a single-barrel shotgun. The barrel is round until 60 mm from the breech, where it becomes octagonal. Total length of the barrel and breech plug is 925 mm, the barrel alone is 908 mm, and the tang is 24.22 mm. Diameter of the barrel at the breech is 32.08 mm and at the muzzle 22.62 mm. The bottom flat of the octagonal section in front of the breech plug is marked with an "X"; otherwise there are no marks, perhaps mainly owing to extensive corrosion of the metal. The breech plug is provided with a place for a nipple, but the latter has rusted away.

Beneath the barrel and attached by means of solder are two thin copper sheet ramrod thimbles, 27.40 mm and 28.57 mm in length. Neither the lock nor other parts of the gun were found.

CONSTRUCTION, BLACKSMITHING, AND CRAFTS

Spade Blade Fragment (Figure 69 b). Approximately one quarter of a spade blade was found at Cabin 6. Part of the lower outer edge, showing the blade outline, is still intact. The fragment is 148.73 mm in length, 121.97 mm in width, and 2.28 mm in thickness.

Forged Iron Hinge Fragment (Figure 69 c). A broken but very well-made hinge was found in Cabin 6. Although not heavily used, it is broken along the second of two countersunk perforations (5.81 mm in diameter). The hinge is of about the size used on shutters or perhaps a trap door, 101.30 mm in length, 26.83 mm in width, and 6.65 mm in thickness.

HOUSEHOLD, BUSINESS, AND PERSONAL MAINTENANCE

Earthenware

Plain White Glazed Earthenware.

Although several sherds of plain white-glazed earthenware were collected from the Cabins 9 through 12 area, they were not distinguishable from those of the Rider/Olsen homestead and are not described here. Cabins 6 to 8, however, did not exhibit a mixing of historical components.

Cup? A small fragment, possibly a rim sherd from a cup, was collected from Cabin 7.

Monochrome Underglazed Transfer-Printed Ware.

The majority of surface-collected artifacts fall into this category. Because they were small, and few of them fit together, no attempt was made to determine the type of vessel. Instead, effort was expended in identifying the manufacturer and the name or number of the pattern, since these data were most useful for comparative purposes. A total of 29 sherds were found, described below by cabin, and representing the following Copeland patterns (Sussman 1979a).

(1) Cabin 6. Pattern B 772, Grapevine, Honeysuckle, Pagoda, Pergola, Ruins (two vessels), Turco (Figure 70 a).

(2) Cabin 7. Continental Views, Meander (Figure 70 b).

(3) Cabin 9. Alhambra, British Flowers, Flower Vase, Ivy, Ruins (Figure 70 c).

(4) Cabin 9 and 10. From a mixed sample. Alhambra, B 700, Continental Views, Flower Vase, Grapeviine, Ivy, Osborne, Pagoda, Pergola (Figure 70 d).

(5) Cabin 11. Flower Vase, Pagoda (Figure 70 e).

(6) Cabin 12. Corinthian (Figure 70 f).

Polychrome Underglaze Sponge-Stamped Ware

Of the three distinct sponge-stamped patterns identified at Buffalo Lake, only one was represented in the surface-collected sample (Figure 71 a). It consists of reddish-brown flowers and green leaves, a pattern described for Cabins 1 and 5 and also found in Cabin 6.

Stoneware

Four sherds of stoneware (Figure 71 b) with a hard grey paste and dark reddish-brown interior glaze were found on the cowpath through Cabin 7, Together they make up part of a crock 91 mm by 63 mm, with a maximum thickness of 8.45 mm.

Glassware

Patent Medicine Bottles: Perry Davis Vegetable Pain Killer (Figure 71 c). Several medicine bottle sherds were found at Cabin 6: a front-panel body sherd with the raised letters "DAVI," three neck sherds, a partially melted sherd with the raised letters "EG," a partially melted sherd with the raised letters "PER," and one melted body(?) sherd. A side-panel sherd with the raised letter "L," also from a Perry Davis bottle, was recovered from Cabin 9.

Sheet Metal Artifacts

Iron Can Fragment (Figure 71 d). A tinned iron can side fragment was found in Cabin 6. It retains a lip of solder, irregularly applied to attach one of the can ends. The end was not recovered, however.

Rectangular Ferrous Metal Container Fragments (Figure 71 e). Seven pieces of a tin-plated ferrous metal dried food or biscuit tin were found in Cabin 6. The edges were joined by folding rather than by soldering.

DRESS AND ORNAMENTATION

Buttons

Group I, Type 3, Glass Button (Figure 71 f). A glass sew-through button with four holes was recovered from Cabin 6. It has a diameter of 11.29 mm and a thickness of 3.38 mm.

Group III, Type 3, Bone Button (Figure 71 g). A bone button, is slightly larger than previously recorded examples of this type. It measures 16.93 mm in diameter and 2.39 mm in thickness.

Beads

Drawn Tubular Beads.

Four drawn tubular beads were collected from Cabin 6. They include one dark blue translucent bead 3.11 mm in diameter, two opaque white beads 2.32 mm and 2.46 mm in diameter, and one Cornaline d'Aleppo bead 4.85 mm in diameter with brick-red exterior and opaque white core.

Wound Glass Bead

A large wound, translucent cobalt-blue (7.5PB 3/12) bead (Figure 71 h), with an iridescent patina, was found in Cabin 9. It is 12.04 mm in length with an outside diameter of 14.33 mm. The diameter of the perforation is 3.82 mm.

Brass Ornament?

A short piece of brass wire wound like a spring (Figure 71 i) was found in Cabin 6. It is 11.69 mm long and 6.93 mm in diameter. The brass wire stock is 1.66 mm in diameter.

NATIVE INDUSTRIES

Chipped Stone

Several lithic artifacts were collected from the surface, especially in the cultivated field where Cabins 9 to 12 are located. Some of these, for example projectile points, were clearly associated with prehistoric archaeological components, while others, such as end scrapers, retouched flakes, and debitage, could not be positively associated with historic features, although there is evidence for such association in some of the excavated cabins.

FAUNAL MATERIALS FROM CABINS 6 TO 12

Faunal remains were surface-collected from Cabin localities 6 to 12 only slightly less consistently than other representations of human activity. Only the sample recovered from Cabin 6 appears not to be mixed with remains of later occupations, and therefore they are included in Kooyman's analysis (Appendix II), while those from Cabins 7 to 12 are not.

DISCUSSION

With the exception of Cabin 7, the possible structures dealt with in this chapter retained only the barest of architectural information. Based upon the artifact inventory, however, these structures appeared to be contemporaneous with the five partially excavated cabins.

The total artifact inventory itself has been slightly enlarged quantitatively and, more important, qualitatively through these surface collections. The gun barrel and breech confirms hypotheses concerning types of firearms used. Until its recovery, only the ammunition indicated these firearm types. The spade blade is also an addition to the tools known from the site. In particular, it would have been important in excavating cellars and borrow pits during the construction phase.

The forged iron hinge suggests that either shutters or a trap door was used in Cabin 6, the latter being more probable. Tom Court (personal communication) has suggested that such a hinge would be much too light for use on a cabin door.

The work of Lynn Sussman (1979a, 1979b) was again invaluable in distinguishing between nineteenth century Métis ceramics and those used by early twentieth century Euro-Canadian homesteaders. Not only were Copeland patterns identified that were identical to those from the excavated cabins, but a few previously unrecorded nineteenth century patterns at Buffalo Lake were added to the list.

Two additional cabins (6 and 9) produced evidence of Perry Davis Vegetable Pain Killer, suggesting that it was in very common use in the community. Toothache may have been an increasingly common complaint, as there appears to have been a fairly high consumption of sugar and preserved foods, many conducive to dental caries and possibly gum disease. We may wonder if the use of patent medicines tended to replace ethno-pharmaceutical remedies.

Other artifacts collected from Cabins 6 to 12 complement those recovered during the systematic excavation of Cabins 1 to 5.

CHAPTER X

COMPARISONS

The Buffalo Lake Métis site, as it existed in the 1870's, was complex in terms of settlement patterns and community make-up. At least 88 known cabins were tentatively identified in the archaeological record and doubtless many more were destroyed or remain to be discovered. Indeed, if the total area adjacent to the undisturbed portion of the site is taken into account, an additional 37 to 72 cabins may yet be identified. This would give a total of between 125 and 160 cabins for the Buffalo Lake and Boss Hill wintering sites, a realistic total given the maximum population figures for the years 1875 and 1876 (see Chapter III). Thus, at best, Provincial Museum researchers have sampled little more than five per cent of the known structures and three per cent of the possible structures, excluding those from which small surface collections were made.

The remaining cabin locations appear to be organized in clusters, with the odd isolated structure as well. The historical record documents at least part of the make-up of this wintering community. Métis with varying degrees of commitment to the life of the hunt formed the core Many other Métis wintered here as free traders, whisky traders (in some cases synonymous), clerks and employees of the Hudson's Bay Company, and private entrepreneurs on freighting and supply contracts with the Catholic and Prostestant missions at St. Albert and Victoria. In addition, there were several native hunting bands wintering nearby that were closely associated with the community. White missionaries, notably the Oblates from St. Albert, Euro-American and Euro-Canadian free traders, and North West Mounted Policemen also wintered or conducted some of their affairs at the Buffalo Lake site.

Buffalo Lake appears to have been the largest wintering community in the Upper Saskatchewan, and probably in the Canadian Northwest. In order to begin establishing a basis from which to characterize the nature of hivernant sites, the data generated by our own small-scale excavations must be compared to data from other sites that existed within the same general time frame, or with which the residents of Buffalo Lake or other Métis had some form of contact. Therefore, given the make-up of the community at Buffalo Lake, three types of sites will be examined. First of all, other wintering sites will be on the first level of comparison. Secondly, free trader's sites of the same general period will be examined. Finally, the examination of a number of established posts of the Hudson's Bay Company will constitute the third level of comparison.

METIS WINTERING SITES

The Cypress Hills

Archaeological research at Métis wintering sites is still in its

infancy. Nevertheless, the interest in this type of research goes back at least to 1959, when Richard G. Forbis surveyed the Buffalo Lake area. Actual excavation was to take place later.

During the summer of 1966, Robson Bonnichsen and Norman Zierhut, graduate students from the University of Alberta, surveyed three Métis wintering sites in the Cypress Hills of southeastern Alberta and the adjacent portion of Saskatchewan. These sites or cabin clusters were defined by proximity, each cabin in a cluster being within 100 yards of another, while clusters themselves were more than 100 yards apart (Elliott 1971:34). At that time Bonnichsen selected one cabin to partially excavate on the site that was designated DjOo 120, at the "Head of the Mountain" (Figure 1), also commonly known as the Kajewski Cabin site after Lawrence Kajewski, the land owner and local informant.

In 1969, Jack Elliott returned to DjOo 120, surveyed five additional cabins, making a total of six, and designated them Cabins A to F. Elliott used data derived from excavation of two of the cabins (B and E) as a basis for his Master's thesis in the Department of Archaeology, University of Calgary. Of all research to date, Elliott's is the most comprehensive and most comparable to the Buffalo Lake data.

Ecological Comparisons, Elliott

There are notable ecological similarities between the sites in the Cypress Hills and at Buffalo Lake. Elliott (1971:11) suggested that the Cypress Hills fauna are more characteristic of the Aspen Parkland than the Plains. A comparison shows that 83 per cent of bird species are common to both sites (Elliott 1871:14-15; Doll 1982:196-204). Likewise, 78 per cent of the mammalian species are comparable (Elliott 1971:12-13; Doll 1982:194-195; Hugh Smith, personal communication). In addition, a comparison of reptiles and amphibians revealed 71 per cent of the observed species to be the same (Elliott 1971:16; Doll 1982:206; Hugh Smith, personal communication).

There is a similarity in mean yearly temperature, both areas averaging 36°F. Mean yearly precipitation is almost the same: the Cypress Hills averages 18.5 inches and Buffalo Lake averages 16 inches (Elliott 1971:17; Doll 1982:14). Soils are also similar (Elliott 1971: 17; Doll 1982:13), as is vegetation with respect to the aspen-dominated communities. In general, however, because of the role of elevation, there is more variety in communities in the Cypress Hills, ranging from grassland to climax spruce vegetation. Both areas have abundant permanent sources of water, dominated by lakes and marshes. In the past, bison wintered in both areas.

The general conclusion is that the Cypress Hills and Buffalo Lake are ecologically similar and that this general ecological situation formed part of the attraction of the two areas as wintering sites. Elliott (1971:24-25) addressed this issue, suggesting that the attractions of the Cypress Hills included easy access to water, firewood, building materials, and protection from winter blizzards. These, however, are not the only factors in selection of the wintering sites. Equally important were those many economic and other cultural considerations that have been discussed particularly in Chapters II and III.

Architectural Comparisons, Elliott

At the Buffalo Lake site, preservation of wood features was extremely poor. Similar problems existed in the Cypress Hills, although wood tended to be preserved a little better because the walls of both cabins studied by Elliott had been burned (Elliott 1971:27). Similar features defined the cabin units. Elliott (1971:24). noted that: ". . .the cabin walls are defined by low linear mounds of chinking, hemispherical clay chimney mounds in a corner or centred on one wall, and associated pit depressions." For the Cypress Hills site, Elliott defined three major units: the cabin structure itself, three or more outside pits at least six feet from the cabin, and the space between the cabin and the pits.

At Buffalo Lake, since none of the cabins was completely excavated, nor were the areas between the interior and exterior features, units were defined differently. These included the cabin walls, the fireplace, the internal depressions, and the external depressions. The number and nature of units would have increased if larger areas could have been excavated within the cabins, in their immediate invirons, and between cabins in a defined cluster. Based on the observed surface features at Cabin 5, architectural units and their patterning seem to have been more complex than at the other localities examined. Possibly these were the buildings of a trader.

In the Cypress Hills, Elliott (1971:25) demonstrated that local materials were used in cabin construction. Chimney forms and floor boards were made from spruce or pine, while spruce or pine and poplar were used interchangeably for the walls. He suggested that the corners of Cabin B were either notched and successively overlapped, or were joined by tongue-and-groove construction. There was, however, no archaeological evidence for the presence of one form over the other.

Likewise, at Buffalo Lake there was a lack of archaeological data to support either construction method. However, historical accounts of the construction of wintering villages or camps generally agree on a number of points: the cabins were made from local materials; they were built very rapidly within a day or two; they had mud or clay fireplaces located in the interior; and they were plastered inside and out with clay to form a snug, warm structure.

Buildings at fur trade posts took longer to erect, as suggested in Alexander Henry's account of Fort White Earth (Coues 1897:616):

> The men have finished the Indian house excepting the upper flooring, for which we have no plank. The house, 70 x 20 feet, has beeen exactly one month in building, since the wood was all upon the spot; five men were working continuously.

In the Cypress Hills, Elliott's two cabins were of different sizes and configurations. Cabin B comprised two rooms built at the same time, each measuring 15 feet by 14.5 feet. Cabin E was a single-roomed structure measuring 19.5 feet by 16.5 feet. A door sill was located in the centre of the wall opposite the fireplace in Cabin E and, presumably, two doors were similarly centred opposite the fireplaces in Cabin B.

A single clay hearth was centred on the northwest wall inside each of the three rooms in the two cabins. Fireplaces in each room were periodically cleaned of charcoal and charred material and plastered with white clay (Elliott 1971:27).

Fire pans or holes were also replastered at Buffalo Lake, presumably when the cabins were reoccupied in the fall, and with the purpose of repairing damage done by spring and summer rains. In some instances, charcoal, ash, and some artifacts, notably melted glass and nails, were left in the firebox to be plastered over. This resulted in stratified deposits that suggest the use of the cabins for at least three seasons.

In both sites, interior and exterior pits had been excavated vertically. The forms varied from conical to bell shaped. One of those at Buffalo Lake (Feature 6 in Cabin 5) was definitely rectangular in outline before the collapse of the upper walls resulted in the presently rounded outline. One pit in the Cypress Hills was excavated horizontally into a nearby stream bank.

The two interior pits in the south room of Cabin B in the Cypress Hills appeared to have stratified deposits. Unfortunately, there was a general lack of stratification in the cabin as a whole, so that it remains impossible to correlate the pit deposits with Elliott's proposed activity areas in the cabin interior. In addition, two outside pits were noted for Cabin B. One was a refuse pit. The other, containing loose fill that was dark and organic, was suggested to be a meat cache pit (Elliott 1971:36).

Similar exterior pits were present at Buffalo Lake with one "clean" bark-lined example at Cabin 4 interpreted as a meat-storage feature. Other exterior pits with loose, dark, organic fill perhaps served ultimately as refuse pits rather than meat cache pits as would be suggested by Elliott. More than likely, fresh frozen meat would have been stored inside sheds or ice houses, or on raised stages or platforms, to prevent its plunder by the numerous dogs that roamed the site.

Elliott (1971:85) notes that there were no stables or other outbuildings at the Cypress Hills site. However, the presence of meat cache pits might account for a few such non-residential structures. The Fort Benton weekly recording of 23 January 1880 describes a Métis cabin of two rooms including the ". . . indispensable meat house" contained under one roof (Elliott 1971:85). Elliott, however, found no archeological evidence for this type of feature. All the rooms of the two cabins were interpreted as being occupied by ". . . a small nomadic nuclear family with a sexual division of labour" (Elliott 1971:48). At Buffalo Lake, such a feature as an attached "meat house" may have been present in the, as yet, unexcavated complex associated with Cabin 5.

Artifactual Comparisons, Elliott

Through the kindness of Dr. R. G. Forbis, University of Calgary, M. Doll was able to examine the Cypress Hills assemblage in order to make comparisons with the one from Buffalo Lake. Architectural features, with some exceptions, in both Cypress Hills and Buffalo Lake sites are very similar. So, too, are the artifact samples recovered. Similar or identical artifact types in the Hunting category recovered from the

Cypress Hills include the seemingly ubiquitous .44 calibre Henry flat rimfire cartridge cases along with muzzle-loading gun parts, musket balls, lead shot, lead bullets, and knives.

In the Construction, Blacksmithing, and Crafts category, comparable artifacts include a triangular file, an axe, a bevelled-edge hide-scraping tool, wrought iron nails, machine-cut nails, and a hinge.

Household, Business, and Personal Maintenance category artifacts were very similar to those from Buffalo Lake, particularly plain white earthenware, monochrome transfer-printed earthenware with Copeland patterns (Table 18, Appendix III), polychrome sponge-stamped earthenware, lead foil from tea containers, and hard rubber combs. Medicine bottles, such as Perry Davis Vegetable Pain Killer, and liquor bottles were quite common. Window glass, suggesting the presence of glazed windows, was more common than at Buffalo Lake, while mirror glass was equally common. Besides lead foil, other similar metal artifacts included trunk or box strapping, food cans, metal box or biscuit tin fragments, perforated metal sheet, and a metal spoon handle. Food cans were appreciably more abundant in the Cypress Hills, perhaps indicating a longer occupation, a better supply of manufactured goods, or scarcer natural food resources.

At least one artifact recovered from a depression associated with Cabin B is indicative of the direction of commercial interchange. Here was found a United States silver quarter dollar, dated 1877, and bearing the Carson City, Nevada, mint mark. An earlier (1857) United States silver half-dime was recovered from a similar feature at Cabin 3, Buffalo Lake, also suggesting exchange with American traders.

Although there was no archaeological evidence in the Cypress Hill for the use of dogs in transportation, there was ample evidence for the use of horses, including several types of artifacts not recorded from Buffalo Lake. Similar artifacts include horseshoe nails, harness rings, and metal harness buckles.

If similar button types can be interpreted as representing similar clothing types, there is archaeological evidence suggesting that the occupants of both sites dressed similarly and that Euro-Canadian or Euro-American styles and products formed the dominant mode. Certainly, photographs of Métis taken in the Canadian Northwest in the 1870's document a dramatic shift in clothing styles over the three previous decades from more native to more Euro-Canadian. Paul Kane and other artists painting around the Fort Edmonton area provide good pre-photographic data for the earlier period.

Glass, shell, bone, and metal buttons of the same types occurred with relatively high frequency in all cabins at both Cypress Hills and Buffalo Lake sites. Glass beads, used both as jewelry and as adornment on clothing, were also recovered from both cabins in the Cypress Hills. The types, such as drawn tubular, wire-wound, and facetted, are more or less the same as those from Buffalo Lake, with seed beads (221 examples) dominating the Cypress Hills sample. At Buffalo Lake the total number of beads, and particularly of seed beads, exceeds the number from the Cypress Hills by a ratio of over 500 to 1. This disparity, however, may only reflect the discard of one or two heavily beaded artifacts at Buffalo Lake. In addition, special care was taken with the fill from refuse pits at Buffalo Lake in order to maximize recovery of microfauna,

botanical remains, and seed beads, and such meticulous laboratory techniques were probably not employed with the Cypress Hills sample.

Clay smoking pipe fragments, a brass tube made from a cut-off cartridge case, and a leather boot heel were recovered in the Cypress Hills. This last artifact suggests at least the partial adoption of Euro-Canadian footwear. Photographs of the period show men wearing either commercially tanned leather boots or native-tanned moccassins.

A most interesting similarity was the occurrence of stone artifacts at both sites. Similar tools included projectile points, end scrapers, retouched flakes, utilized flakes, bifaces, bipolar split pebbles, cores, and debitage. These were excavated from all three rooms of the two cabins in the Cypress Hills, within the various pits, and immediately outside the structures (Elliott 1971:43). Elliott realized the possibility that the cabins were constructed on the top of a prehistoric component, as is demonstrated in the case of Cabin 4 at Buffalo Lake, or that prehistoric stone artifacts may have been transported as curios into the various cabin areas. However, he preferred to interpret their presence as a valid part of the historic assemblage (Elliott 1971:50-51).

> . . . the abundance of flake detritus from the manufacture of flake stone tools and stone pipes, the stratigraphic relationship between the aboriginal and White artifacts in discrete activity areas -- appears to more strongly support the hypothesis of in situ manufacture and use of aboriginal tools by the Hivernants.

Faunal Comparsions, Elliott

The faunal materials from both sites are characterized by species variety. Though dominated by bison, several other species of mammals, birds, and fish were utilized as food. The analysis of the butchering patterns of large mammals at both sites was conducted by Kooyman (1981) and has, for the purposes of this monograph, been re-examined in light of more recent evidence (Appendix II) Not dealt with in any similar way were the remains of twenty different species of smaller mammals (non-ungulates), birds, and fish that were also consumed as food. With respect to these latter categories, Elliott (1971:46) concludes:

> I am left with the impression that every available faunal species was repeatedly utilized. In effect, sufficient ecological-dietary stress (such as the extermination of the buffalo herds) may have been partially responsible for a shift to other faunal food resources, and for maintaining a minimum social unit size of three persons among the Cypress Hills Hivernants.

Architectural Comparisons, Bonnichsen

The second comparable body of archaeological data from the Cypress Hills is Bonnichsen's initial work at Cabin A in 1966 and 1967. This was the first of the three to be excavated out of a wintering village of 19 cabins (Bonnichsen et al. 1973).

There is a high degree of conformity in construction and placement of features between Cabin A and Cabins B and E. Cabin A, measuring 33 feet by 16 feet (528 square feet), also had a wooden floor and was divided into two rooms. It was associated with three exterior pits. The cabin was occupied by at least a nuclear family on at least three stratigraphically distinguishable occasions. The nature and duration of occupation in the second room of the cabin could not be determined, as it was not excavated.

Bonnichsen suggested that clustering of artifacts did not reflect activity areas, but occurred in low spots on the cabin floor and was caused by erosion and other physical forces under the influence of gravity. In criticising Elliott's hypothetical activity areas for Cabins B and E, he stated:

> Furthermore, since three separate occupations had occurred and no stratigraphy was present except within some of the cache pits, any clustering which did occur could not be considered representative of activity areas in use during any one occupation . . . since Cabins B and E (Elliott 1971:28, 41) like Cabin A have no stratigraphy outside of the cache pits and appear to have had more than one occupation, we question that the resulting artifact clusters represent bona fide activity areas (Bonnichsen et al. 1973:26-27).

There are problems of stratigraphic correlation in all three cabins in the Cypress Hills. Nevertheless, at least three occupations are indicated. These are ill defined, and the dating, between 1840 and 1885, generally by means of historic artifacts, remains imprecise. The estimated terminal date of 1885 for Cabin A was based on the faunal remains at the top of the pits, where bison and domestic sheep were found together. This was the latest reasonable date for hunting bison when domestic sheep were already present in appreciable numbers (Bonnichsen et al. 1973:33-35).

In most respects, Cabin A is architecturally similar to Cabins B and E and, with a few notable exceptions, for example the presence of wooden flooring, is quite similar to cabins at Buffalo Lake.

Artifactual Comparisons, Bonnichsen

Thanks to the Cypress Hills Provincial Park Interpretive Center and the Department of Anthropology, University of Alberta, M. Doll was able to re-examine this assemblage. The comparison of artifact types reinforces the cultural and temporal contemporaneity of the Cypress Hills and Buffalo Lake sites. Artifacts from Cabin A in the Hunting category were comparable to those from Buffalo Lake. Again the ubiquitous .44 Henry flat rimfire cartridge cases were found, along with .44-40 centrefire cartridge cases for the 1873 Winchester, muzzle-loading gun parts, a percussion cap box lid, musket balls, lead shot, and brass-based shotgun shells made by Eley Brothers of London.

Machine-cut nails were common in Cabin A, slightly more plentiful than at Buffalo Lake because they were used in securing flooring. One wrought nail, some heavy wire stock, and a cast rather than forged axe head were also found.

Household, Business, and Personal Maintenance artifacts similar to those from Buffalo Lake included, plain, transfer-printed, sponge-stamped, and painted earthenwares (Table 18, Appendix III). Melted glass was recovered from the fireplace, while in other areas fragments of patent medicine bottles, transparent green bottle glass, cobalt blue glass, and mirror glass, were recovered. However, no window glass was found. Again, hard rubber comb teeth were present.

Similar metal household artifacts included a stamped iron spoon, tinned iron food cans, iron pot hooks, lead foil, a sewing needle, thin lead sheet, perhaps from black powder containers, and perforated metal sheet. Again, tinned iron food cans were more abundant here than at Buffalo Lake.

Artifacts related to Dress and Ornamentation comparable to those from Buffalo Lake were dominated by glass beads and buttons made from various materials. A total of 2,684 beads were recovered from Cabin A (Bonnichsen et al. 1973:77). Of these, 2,675 were made from drawn glass tubing, and 84 per cent of those were of seed bead size. As in the Buffalo Lake sample, Cornaline d'Aleppo beads made up part of the sample. Four hundred and fifty-six were found.

Several identical button types were recovered, including five types of glass buttons, one bone button type, and two types of metal buttons. The shell button types recovered were similar, but not identical, to those at Buffalo Lake.

Other artifacts related to clothing included metal hook and eye fasteners and a presumed piece of green fabric that appears rather like a moleskin. The fragments of textile from Buffalo Lake are not similar to this material (Appendix I).

One artifact related to religion was overlooked in the original analysis (Bonnichsen et al. 1973), but discovered by Doll upon re-examination of the assemblage. This was a rusted triangular medal section of a rosary, from the corners of which prayer beads were suspended. This artifact suggests the possibility that the occupants were of the Roman Catholic faith.

Stone tools were recovered from the cabin floor and from the cache pits of Cabin A. Because they had irregular outlines and cross-sections, Bonnichsen found them difficult to classify. However, he essentially agrees that stone artifacts were made and used by the Cypress Hills Métis (Bonnichsen et al. 1973:88):

> The flaking of the specimens is uneven and lacks symmetry, suggesting that the implements do not represent a stone flaking tradition surviving from the prehistoric period . . . the tools are undoubtedly a product of ad hoc technology.

Perhaps the only contentious issue between Eliott and Bonnichsen in the interpretation of lithic tools from the Cypress Hills is whether they

represent the survival of a prehistoric native tradition or were a technological expediency.

The Green Wintering Site.

The Green Wintering site (ElPg 2) is located approximately 50 miles (80 kilometres) south of the Buffalo Lake Métis site, situated above the normal high water line on the east bank of the Red Deer River between the present-day communities of Trochu and Rumsey, Alberta. The site was visited in 1968 by J. S. Nicks, then Historic Sites Officer at the Provincial Museum and Archives of Alberta, at which time a general map was drafted. Subsequently, the site was visited by Doll and J. A. Villa-Arcé, in company with Edgar Riep. Although the site was heavily overgrown, a number of surface features were still evident, particularly the outline of at least two buildings.

Architecture

Nick's 1968 map (on file, Provincial Museum of Alberta) shows the outline of two structures. One is approximately 22 feet by 18 feet (396 square feet), with a fireplace located half way along the east wall, the long axis of the cabin. A second mound, not indicated as a fireplace, is located in the northeast corner of the structure. The second structure, located about eight feet to the north, with its long axis parallel to the river, measures 24 feet by 18 feet (432 square feet). It has two corner fireplaces, one in the northwest and one in the southeast corners. In addition, there is a third cluster of features located on the same terrace, but about 200 feet downstream. This appears to represent a third building with a single fireplace or mound and two depressions. No wall lines are indicated.

Observations in Doll's field notes (on file, Provincial Museum of Alberta) concerning the second structure described above conform exactly with Nicks' map. However, the measurements of the first structure given in the notes are 30 feet by 18 feet (540 square feet). The clay and sandstone mounds appear to be two corner fireplaces, one in the northwest and one in the southwest corner. Doll's survey missed the features located by Nicks 200 feet to the south, but recorded a separate chimney pile north of the second structure and not shown on Nicks' map.

Judging strictly from surface evidence, there were up to four structures on the site, two of which may have been divided into two rooms, each with its own corner fireplace. These fireplaces appear to have been made from slabs of local sandstone with chimneys of mud plaster on a framework of poles. Disturbance of a fireplace feature by pothunters showed that the hearths or aprons as well were constructed from flat slabs of sandstone. No observations were made as to the preservation of wood.

M. Forsman (1980a:45) excavated eight square metres of the Green Wintering site in 1979. He did not mention the presence of any visible wall lines, stating only that ". . . cultural features at the site included several low mounds and depressions" (Forsman 1980b:4), later enumerated as three mounds and two depressions. Forsman (1980b:4)

described one fireplace, possibly the southeast corner fireplace of the first structure, as having a slightly expanding "U" shape and a sandstone slab front. Nothing other than ash was recovered in this feature.

A second fireplace excavated by Forsman, possibly the northwest corner fireplace of the second or more northern structure, was associated with a well-preserved wooden member (Forsman 1980b:7). However, preservation was not sufficiently good to determine whether logs were squared, nor what the corner joints were like (M. Forsman, personal communication), and there was no opportunity to continue the testing.

Artifacts

Artifacts possibly coming from this site observed by Doll in private collections include two blade-type toffey-colored gunflints and one iron projectile point. However, at least six tipi sites and their associated hearths were observed less than a quarter mile to the south and on the same flood plain as the Green Wintering site, and these, too, may have been a source of historic artifacts.

In Forsman's excavations, a percussion cap and a number of "square-cut" (machine-cut?) nails were recovered near the fireplace. Other artifacts reported from the site include several "hand-made square nails," a metal button, and a white bead.

Discussion

Nicks, Forsman, and Doll are in agreement that the Green Wintering site probably dates from the latter half of the nineteenth century. However, there is insufficient data to determine whether the cabins formed a Métis wintering complex or were possibly a free-trader's post. There is no historical record that it served either as a Hudson's Bay Company outpost or a North West Mounted Police post. Day makes the observation that no 1870's references to this site have been found to date. However, this does not exclude the possibility of a pre-smallpox occupation, when two families to a house would have been normal. Families with kinship ties to the Blackfeet, such as the Birds and the Munros, are possible contenders as pre-smallpox occupants of the Green Wintering site.

Lac La Biche

The historical record documents the importance of the Lac La Biche area to northern water transportation and to the fur trade from the late eighteenth century. French-Canadan families were also present from the earliest times. There is an equally long association with Métis families, a number of which also wintered at Buffalo Lake.

On the north shore of Lac La Biche (Figure 1), Tom Maccagno has frequently collected historic artifacts from a cultivated field and made them available to the Provincial Museum for comparative study. No structural elements were preserved on the site, but the artifacts compare closely with those from Buffalo Lake. In particular, there are at least

seven underglaze transfer-printed earthenware patterns, manufactured by Copeland (Table 18, Appendix III), that are identical. In addition, plain white earthenware, sponge-stamped ware, and painted earthenware are all comparable.

This location (Figure 1) may have been a wintering site, although there is yet no conclusive evidence. The artifact sample is consistent with that from other sites that date from the 1870s. The site itself was located away from the local mission, Hudson's Bay Company store, and free traders' posts. In addition, the land on which it is located has had a long tradition of Métis tenure (Tom Maccagno, personal communication).

Batoche

A survey in 1976 of the more permanent Métis community at Batoche, in the Lower Saskatchewan District (Figure 1) located a possible Métis hivernant camp as well (Donahue 1977:29; Putt 1977:55). Situated on a low terrace of the South Saskatchewan River, the surface features of site 21N37 included a large central depression surrounded by four smaller ones. The large depression yielded a few pieces of wood but no other artifacts. As on other Métis cabin sites, the wall lines were indicated by clay overlying black soil, and corners were apparent in the plan view (Donahue 1977:29).

A few artifacts, not described in the report, were recovered from ash lenses in two of the depressions. Although Donahue does not propose a date for this structure, Putt (1977:55) suggests that it was occupied prior to 1870. Putt (1977:55) also observes that: ". . . the structural remains and assemblage content . . . are comparable to those described for the Cypress Hills hivernant Métis."

La Petite Ville

Located on the west bank of the South Saskatchewan River near Batoche (Figure 1), this wintering site, believed to have been occupied between 1870 and 1874, was situated approximately 40 to 80 metres from the river (Donahue et al. 1978:75). Archaeological data were sparse. The site consisted of approximately 40 depressions, 15 of which were in linear clusters, others in groups of three to six, and still others isolated (Donahue et al. 1978:75). These depressions ranged from 0.5 metres to 3.0 metres in diameter and 0.25 metres to 1.5 metres in depth. Approximately half were greater than 1.5 metres in diameter. Field stones adjacent to two depressions may have served as hearth or log supports, although the latter use might be more typical of building levelling techniques in permanent communities rather than temporary wintering sites.

To date, full and reliable comparative data from known Métis wintering sites in Saskatchewan are not available. Some such sites are only now being surveyed and tested, with results from field work during the 1986 season still, as of this writing, in process of analysis (David Burley, personal communication).

FREE TRADER'S POSTS

The sites of free trader's posts contain a second level of comparative archaeological data that will enhance our understanding of the Buffalo Lake material. These sites and their assemblages can potentially provide data on a source of supply of trade goods alternative to Hudson's Bay Company posts. Secondly, data from these sites may possibly enable us to distinguish between free traders's houses and hunter's houses at Buffalo Lake. There appear to have been at least 26 free traders at Buffalo Lake in 1875 (André 1870-1884), in addition to the Hudson's Bay outpost established by Francis Whitford. Robert Hamilton (1875), a more reliable source than André, lists 30 individuals by name.

Two free trader's posts with occupations reliably dated to the 1870's were excavated in 1972 by Jack Elliott. Both are located in the Fort Walsh National Historic Park in the Cypress Hills of Saskatchewan (Figure 1). Solomon's and Farwell's posts were Euro-American whisky trading posts that also had the dubious distinction of marking the site of the Cypress Hills Massacre of June 1, 1873. Here a number of Canadian and American wolf hunters and traders massacred a number of Assiniboines who had been camped nearby.

Solomon's Post

Architecture

Solomon's Post consisted of a two-room cabin with cellar, an attached stockade area, and two outside refuse pits, perhaps abandoned cache pits (Elliott 1973:7). One room measured 17 feet by 13 feet and had a wooden floor and a cellar. The cellar, of undetermined diameter, was 1.7 feet deep. The second room measured 17 feet square and had a dirt floor.

Corners of the cabin were of saddle-notch construction, and the recovery of glass suggested that windows had been present. There was no evidence for stoves or fireplaces. However, there was evidence for a stockade, measuring 31 feet by 14 feet, or possibly for a raised room of the same dimensions supported on posts. The exterior refuse pits were 16 feet and 15 feet in diameter and 1.5 feet and 1.4 feet deep. Architecturally, this structure was markedly different from those cabins excavated either in the Cypress Hills or at Buffalo Lake. It is important, nevertheless, to know that the saddle-notch building style was present in the Canadian Northwest in the 1870's.

Artifacts

Solomon's Post, however, yielded several artifacts similar to those from Buffalo Lake (Elliott 1973:22-26). Several types of fixed ammunition were used, with .44 Henry flat rimfire and .44-40 centrefire common to both sites. Other artifacts in common include triangular

files, a steel spade, machine-cut nails, a copper rivet, table flatware (although the Solomon's Post examples are of a different pattern than those from Buffalo Lake), patent medicine bottles (including the most common, Perry Davis Vegetable Pain Killer), abundant glass, tin cans, barrel hoops, and harness rings. Also recovered at Solomon's Post was an object described as a brass tension spring identical to a piece of coiled brass wire from Cabin 6. Interestingly enough, stone tools were found, consisting of a utilized flake, a unifacial cobble chopper, and a split pebble tool.

Faunal remains from Solomon's Post consisted of fresh-water clam, horse, elk, and bison.

Farwell's Post

Architecture

Farwell's Post, located a short distance from Solomon's, consisted of a one-room cabin with wooden floor, two attached stockades measuring 14 feet by 11 feet, and exterior depressions, including three refuse pits, a cache pit, and three other empty pits.

The cabin itself measured 21 feet by 14 feet, with glass indicating the presence of windows. As at Solomon's Post, there was no evidence of a stove nor of a stone-and-clay fireplace and chimney. The cabin had a cellar used for whisky storage, evidenced by metal hoops and staves from large barrels (Elliott 1973:11). Livestock was apparently contained within the stockade.

Artifacts

Farwell's Post also yielded several artifacts similar to those from Buffalo Lake. Included are .44 Henry flat rimfire ammunition, machine-cut nails, medicine bottles, window glass, tin cans, barrel hoops, and a rubber comb (Elliott 1973:22-26).

Faunal Material

Faunal materials reflected the utilization of a greater variety of species than at Solomon's Post. Identified remains were those of grouse, white-tailed jack rabbit, ground squirrel, prairie dog, muskrat, beaver, coyote or domestic dog, wolf, deer, elk, and bison.

Based on the faunal material at both Solomon's and Farwell's posts, Elliott (1973:41) suggested that the sites were occupied during winter and spring. Lack of gnawing on the bones suggested that there were no domestic dogs on the post, unlike the situation at Buffalo Lake.

Elliott (1973:11) suggests that the diet at Farwell's Post included pemmican produced on the site, but that the majority of the food was provided by canned and packaged staples from Fort Benton, Montana.

The stratigraphy of both posts indicated a single occupation. Both appear to have been burned then abandoned the day after the Cypress Hills Massacre of June 1, 1873, or very shortly thereafter (Elliott 1973:16).

Documentary Material

A very useful body of data discovered by Elliott was Farwell's accounts with T. C. Powers & Bro. of Fort Benton, Montana. These accounts cover the period between 1869 and 1874 and record many of the goods that Farwell supposedly had for trade. Equally important, they provide insight into the types of goods that other free traders, white American or Métis, would have had available as far north as Buffalo Lake or even St. Albert.

The following list of goods supplied to Farwell is a condensation of an appendix in Elliott's report (1973:37-40), and it includes only those items for which there is archaeological evidence at Buffalo Lake. The goods include pants, shirts, men's and ladies' shoes and boots, infantry dress coats (possibly the origin of the U.S. Army button from Cabin 3 at Buffalo Lake), silk handkerchiefs, set jewelery, black combs, fine-tooth combs (louse combs?), wood mirrors (round mirrors?), plain cut mirrors, bottles of pain killer, hooks-and-eyes, black linen thread, papers of needles, bulk buttons, large flat buttons, large ball buttons, brass ball buttons, shirt buttons, vest buttons, brass wire, brass tacks, hawk bells, bundles of seed beads, chalk white seed beads, ruby seed beads, lemon seed beads, green seed beads, cornelia seed beads (Cornaline d'Aleppo beads?), assorted cut seed beads, Fine Gold cut seed beads, brass beads, Henry rifles, Henry rifles-old, revolvers, Henry cartridges [thousands], Winchester cartridges [thousands] (.44-40 centrefire?), kegs of powder, bags of B shot, sacks of trade balls, No. "E" gun caps, pistol caps, musket caps, black gunflints, 5 1/2 inch skinning and butcher knives, boxes of axes, bastard files, a three-hoop bucket, lamps and chimneys, shovels, door locks, padlocks, harness strap, strap hinges, boxes of window glass, brass kettles, pint tin cups, breakfast and dinner plates, bowls, common knives and forks, iron table spoons, bottled and canned foods including sardines, pickles, peaches, oysters, chicken, yeast, lard, condensed milk, lima beans, string beans, tomatoes, raisins, dried apples, soda crackers, and ginger snaps. In addition, there were chests of tea, whisky barrels, and various items in jugs and bottles. Goods similar to all of these would have found their way to Buffalo Lake through free traders and agents of the Hudson's Bay Company.

The list reflects in large measure the clients for whom the goods were intended. Many in this condensed version, as well as those not included (Elliott 1973:37-40, Appendix B), were used for the construction of the post, while others were consumed on site. However, a great number certainly appear to have been earmarked for the Métis trade, since many would have been useless to native bands at that time. Many goods appear to have been intended for people who lived in houses or cabins for at least part of the year.

Discussion

In summary, archaeological data from Solomon's and Farwell's posts reflect some very basic differences from the Buffalo Lake Métis site. Architecturally, these differences are characterized by the lack of clay and stone chimney and fireplace features, the incorporation of more

glazed windows, and the use of stockades to house livestock and perhaps for defensive purposes.

Many types of artifacts found at the posts bear close similarity to those from Buffalo Lake, but the most substantial differences, quantitative and qualitative, are evident in the Household, Business and Personal Maintenance and the Dress and Ornamentation categories. Although both sites yielded stone tools, the sample from the posts appears to have been clearly of prehistoric origin (Elliott 1973:12).

There are obvious differences in diet as well, with a much greater reliance at the free trader's posts on prepared pemmican and on tinned and commercially packaged staples.

Given the long list of goods purchased by Farwell, one would have expected more of them to appear in the archaeological record. Instead, one is left to conclude that the majority were passed on to others in the trade, with only a few consumed on the post itself, and that a large proportion of the items listed was intended for the Métis trade. The data also confirm that supposed whisky traders could not live by whisky alone!

HUDSON'S BAY COMPANY POSTS

The third level of comparable archaeological data comes from the main trading establishments of the Hudson's Bay Company, presumably the trading institution having the greatest contact with Métis of the Upper Saskatchewan District. Fort Edmonton was probably the largest supplier to the Buffalo Lake Métis. Although extensive lists of goods at Fort Edmonton exist, we have no contemporaneous archaeological data from this post, nor indeed from Fort Edmonton's outposts operated by Francis Whitford at Buffalo Lake and Tail Creek. For detailed artifact comparisons, we are therefore forced to rely on archaeological data from other posts that supplied (or may have supplied) the Métis hunters and free traders (Métis, native, and white) at Buffalo Lake.

Victoria Post

The Hudson's Bay Company's Victoria Post, located about 70 miles northeast of Edmonton (Figure 1) on the North Saskatchewan River, was built in 1864 and operated until 1897 or 1898 (Losey et al. 1977a:2; Forsman 1985:1). A number of buildings and features were excavated: the dairy, trader's shop, and southwest palisade (Losey et al. 1977a), the provisions store, men's house, blacksmith's forge complex, and palisade line (Losey et al. 1977b), and finally the clerk's house and associated kitchen extension, refuse areas, and two newly located refuse deposits associated with the men's house residential area (Forsman 1985).

Architectural Comparisons

At this point in the research, the architecture of Victoria Post and the Buffalo Lake Métis site do not appear very similar. However, one structure at the former site, the kitchen extension C of the clerk's

house, bears some resemblance to certain characteristics observed at Buffalo Lake. The interior fireplace base, located in the centre of the north wall, is composed of a single course of large river cobbles with clay used as mortar, and with a clay fireplace (Forsman 1985:51). Like similar fireplaces at Buffalo Lake, this feature ". . . showed considerable signs of burning and some accumulation of ash and discarded artifacts" (Forsman 1985:51). These artifacts included cartridge cases, forged and cut iron nails, earthenware sherds, and clay pipe fragments (Forsman 1985:53). Forsman's dates for this feature (late 1860's to 1883) overlap with the Métis occupation at Buffalo Lake.

Owing to poor wood preservation, Forsman could not determine the details of corner construction on this kitchen extension, nor whether the logs were left rounded or had been squared.

The construction of other buildings on the post, where evidence was preserved, varied considerably from the structures excavated at Buffalo Lake. Wooden floors laid over joists were common to residences. Cellars varied, but some had horizontally laid log walls and a wooden floor, while others were simple earthen depressions (Forsman 1985:76).

Where there was evidence of superstructure, buildings exhibited post-on-sill construction, using squared timbers joined by mortise-and-tenon uprights (Losey et al. 1977a; 1977b; Forsman 1985). A noticeable effort had been made to level the walls or corners of buildings through use of trenches or rocks. In short, considerable time and effort was allotted to construction, and techniques generally followed those in vogue at other Company posts, with post-on-sill construction using squared logs preferred for the more permanent buildings. Also noteworthy was the presence of a palisade, perhaps indicating a persistent concern for defense at this time.

Artifactual Comparisons

While there is a disconformity in architectural styles and features between Victoria Post and Buffalo Lake, there is a close similarity in the artifact samples. Artifacts related to Hunting include a ramrod thimble, percussion caps, gunflints, musket balls, lead shot, .44 Henry flat rimfire cartridges, .44-40 centrefire cartridges, Eley Brothers shotgun shells, and a metal projectile point. Those related to Construction, Blacksmithing, and Crafts include a strap hinge, hand-forged and machine-cut nails, and hooks used to suspend pots in the fireplace.

Several similar artifacts related to Household, Business, and Personal Maintenance activities were found. No fewer than 12 identified Copeland patterns of monochrome underglaze transfer-printed ware were represented (Table 18, Appendix III). Other ceramics included plain white earthenware, sponge-stamped ware, and salt-glazed stoneware. Perry Davis Vegetable Pain Killer bottles, as well as window and lamp chimney glass, were common.

Metal artifacts included identical pattern flatware with incised bone or antler handles (Losey et al. 1977b:51). Such a pattern was common to Hudson's Bay Company posts from as far away as Fort Garry (Losey et al. 1977b:107). In addition, strike-a-lights, straight pins, needles, a

slate pencil fragment, and a number of Canadian coins were recovered , although the use of coins in the Upper Saskatchewan area would have been uncommon in the 1870s.

Artifacts related to Transportation included horseshoe nails, and those related to Recreation and Smoking included both ceramic and clay pipe fragments. Similar artifacts relating to Dress and Ornamentation included numerous buttons, of which six glass types, four shell types, three bone types, and seven metal types were found.

Glass beads were also recovered at Victoria Post, although greater quantities would have been expected, given the number of years the site was used. Losey et al. (1977a; 1977b) recorded only 111 beads during two seasons of excavation, and Forsman (1985:120-121) also recovered only a small numbers, but from all contexts. As at Buffalo Lake, seed beads predominated.

Other comparable artifacts recovered include an earring with a stone, a mother-of-pearl pendant (Losey et al. 1977b:97) that appears rather like a scale from a straight razor, a metal hook and eye, clothing fastener, and two types of combs. No comparable lithic artifacts were reported.

Discussion

In summary, archaeological data from Victoria Post suggest, with few exceptions, a general dissimilarity of building styles to those at Buffalo Lake. Artifact types, on the other hand, are quite similar, not surprisingly, since many of the Buffalo Lake Métis outfitted at Victoria. Certain items, notably Copeland-manufactured earthenwares, were not only stocked for the trade, but were used on the post by occupants of the clerk's house. Artifacts related to clothing also served both purposes. Finally, occupants of Victoria Post, many of whom were Métis, did not appear to share the use of stone tools with occupants of the Buffalo Lake site.

Rocky Mountain House

The Hudson's Bay Company post of Rocky Mountain House was located on the North Saskatchewan River approximately 94 miles (151 kilometres) west of the Buffalo Lake Métis site. Site 15R (Steer et al. 1979) was in operation between 1835 and 1861. Although the site is architecturally different from the Buffalo Lake site, and was abandoned before the establishment of the latter as a wintering community, the similarity in the artifact sample invites comparison. Site 15R yielded percussion caps, gunflints, musket balls, and shot. The terminal date for this site precluded the finding of fixed ammunition such as the ubiquitous .44 Henry flat rimfire and .44-40 centrefire cartridges.

Presence of other comparable artifacts at site 15R establishes their availability before the entry of free traders from the Fort Benton area. Examples include: iron projectile points, axe heads, files, strap hinges, wrought and machine-cut iron nails, glass bottles, round and square mirror glass, window glass, strike-a-lights, iron cups, pins, needles, a three-tined fork with incised antler handle (Steer et al. 1979:443)

identical to a Buffalo Lake example, a bone shaving brush handle, wire pot hooks, strapping, barrel hoops, clay smoking pipes, beads, earrings, and a brass spring-like object.

Artifacts related to clothing are very similar. At least thirteen different types of buttons were common to both Rocky Mountain House and Buffalo Lake, evidence for an earlier trend towards Euro-Canadian styles, perhaps at the expense of the country style that used native-tanned materials. Both sites yielded metal hook-and-eye fasteners, commonly used in Victorian-period ladies' clothing.

Ceramics were particularly comparable, with plain white earthenware and especially Copeland pattern transfer-printed ware (Table 18, Appendix III). Conspicuously absent was the sponge-stamped ware found at the Buffalo Lake Métis site, the Cypress Hills Métis sites, Lac La Biche, and fur trade posts dating from the 1870's. This ware may stand as a horizon-marker for post-1870 historic occupation, together with examples of early Henry and Winchester fixed ammunition. It appears that the ware was introduced to the market of the Upper Saskatchewan after 1861, and sometime before or during the occupation of Buffalo Lake, between approximately 1872 and 1878.

Fort Pitt, Battleford, Fort Carlton, Last Mountain House, Upper and Lower Fort Garry

Hunters, freighters, and free traders wintering on Buffalo Lake frequented posts outside present-day Alberta. A string of such posts lay along the North Saskatchewan River, beginning at Fort Pitt near the Alberta-Saskatchewan border, proceeding to Battleford and Fort Carlton, and then overland to include Last Mountain House and Fort Garry. These posts served as the main sources of supply for many essential goods, although by the middle to late 1870's they were being challenged by merchants from Winnipeg to Edmonton who were to form part of the new wealthy class of western Canada.

Many of the Buffalo Lake free traders outfitted at Red River, where supplies could be obtained more cheaply and credit arranged. They were responsible for their own freighting, but the amount saved could be added to their profit once they returned to Buffalo Lake the following season. Other posts between Red River and Edmonton were used as well.

The most easily recognized and best preserved artifacts from these posts are the ceramics. Transfer-printed earthenware manufactured by Copeland can now be easily identified as to pattern in the field, thanks to Lynn Sussman's (1972 and 1979) invaluable illustrated reference works. At the Buffalo Lake Métis site, eighteen Copeland patterns were identified in the assemblage. Using these as a base, comparisons were made with Copeland wares from other historic sites. Data were obtained from several sources, including personal examination of excavated and surface-collected samples. Sussman's (1979:12-19) charts were also relied on heavily in constructing Table 18, Appendix III. Although other sites recorded many more patterns than Buffalo Lake, for example Fort Garry with 48 patterns (Sussman 1979:12-19), it was hoped the use of the Buffalo Lake sample as a base would suggest probable sources of supply.

The Hudson's Bay Company post with the highest correlation of patterns was Fort Carlton. Here 15 of the 18 patterns matched Buffalo Lake, for an 83 per cent correlation. Fort Pitt followed with 78 per cent, Lower Fort Garry with 72 per cent, Victoria Post with 67 per cent, Upper Fort Garry with 44 per cent, Battleford, Last Mountain House (Olga Klimko, personal communication), and Rocky Mountain House III with 33 per cent each, Elliott's Cypress Hills sample and Rocky Mountain House II with 28 per cent each, and the Bonnichsen et al. Cypress Hills sample with 17 per cent (Table 18, Appendix III).

It is premature to draw firm conclusions from these comparisons. More data are required from other wintering sites such as Tail Creek, Grande Pointe, and the Green Wintering site; from the contemporary Métis settlements of St. Albert and Lac Ste. Anne; and from the most logical source of supply of Copeland ceramics, Fort Edmonton itself. It is interesting to note, however, the relatively high correlation with Fort Carlton and the relatively low correlation with Rocky Mountain House, although the latter post was much nearer.

Copeland wares were probably supplied by the Hudson's Bay Company to the Buffalo Lake winterers, either directly or indirectly through the outfits of free traders. Of the 18 patterns identified and compared, four emerge as the most popular: "Flower Vase," "B 772," "Continental Views," and "Ivy."

SUMMARY DISCUSSION

The Buffalo Lake Métis site has been compared to other Métis wintering sites, to free trader's posts, and to established Hudson's Bay Company posts. The closest correspondence was between the Buffalo Lake and Cypress Hills Métis sites. They are comparable ecologically, and their architecture, with the exception of wooden flooring, is similar. Artifact samples also corresponded very closely, but with evidence for a higher reliance on tinned foods in the Cypress Hills.

There are similarities between Buffalo Lake and other wintering sites, but archaeological data for these are presently insubstantial. Settlement patterns appear at least superficially similar to those at La Petite Ville and Cypress Hills. However, data are insufficient from any of the wintering sites to draw conclusions regarding the specific organization and placement of structures.

A review of archaeological data from two contemporaneous free trader's posts revealed lesser degrees of similarity. Construction techniques appear to have been similar in general, but different in detail. An example was the construction and employment of stockades for defensive purposes and to house livestock. The free trader's posts also lacked interior fireplaces or any other evidence for heating, although this may be a result of post-occupational disturbance.

Artifacts from the posts were similar to those from Buffalo Lake, but with much less emphasis on types of ceramics, beads, and buttons that would be indicative of household activities or a variety of clothing. A higher incidence of tinned iron cans, coupled with a smaller sample of faunal remains, suggested a much higher reliance on preserved food supplies than was evident at Buffalo Lake.

Documentation of supplies purchased by one of the free traders for his business was revealing. When compared to the archaeological record, it suggested that many of the goods were not consumed at the post. It also indicated that a variety of goods similar to those found at Buffalo Lake was available from an American source as an alternative to the Hudson's Bay Company.

Posts built and operated by the Hudson's Bay Company were architecturally the least similar to the structures at Buffalo Lake excavated to date. However, the archaeological artifact inventory was more similar to that of Buffalo Lake than was the archaeological inventory of free-trader's posts in the Cypress Hills of Saskatchewan. More goods that formed part of the trading inventory were consumed on the Hudson's Bay Company posts themselves, notably household items, including Copeland-pattern earthenware, and items related to clothing and ornament. This perhaps suggests more female activities at the Hudson's Bay Company posts and the wintering sites.

Where archaeological data were available, all three groups of sites in the comparison (with the exception of one site) had three specific types of artifacts in common: .44 Henry rimfire cartridge cases, .44-40 Winchester centrefire cartridge cases, and sponge-stamped earthenware. These three types, therefore, might be adopted as horizon-markers to distinguish late nineteenth century sites occupied after 1870. The single exception in this comparison was the sample from site 15R, Rocky Mountain House, which, however, was abandoned in 1861, before these three types of artifacts were either manufactured or in common use in the Upper Saskatchewan District.

CHAPTER XI

CONCLUSIONS

Archaeological research at the Buffalo Lake Métis site began in 1970 and continued until 1983. During that time, considerable changes took place in the paradigms under which historical archaeology was accomplished, and also in the historical perception of the western Métis.

Initially, the Buffalo Lake project was seen primarily in chronological terms: as an attempt to fill "gaps" in the history of western Canadian peoples subsequent to the fur trade period. The Métis were selected partly owing to the fact that fur trade sites in the period between 1821 and 1870 were not easy to isolate archaeologically. The several protracted occupations that followed the amalgamation of the Hudson's Bay and North West Companies did not promise the same relatively short, "tight" components that the more mobile "early" fur trade period had provided.

A second problem that motivated the early phases of historic archaeology in Alberta was the identification of sites, along with the determination of their boundaries and the distribution of habitations. In particular, this problem was related to ongoing concerns for potential site marking and reconstructive development, public education, and tourism.

These problems, although comparatively simple, are significant, and in fact their essential resolution represents a notable success of the Buffalo Lake project. The boundaries, size, and length of occupation of the Buffalo Lake Métis site are now relatively well known, setting in perspective one group of myths (for example, the often presumed superior size and importance of an early Tail Creek Métis site).

To these considerations, however, others have been added. Notably, as archaeological work progressed in the area north of Stettler, the Métis occupation was seen increasingly in terms of the general ecology of the Buffalo Lake region and an emerging chronology that now goes back some 8,000 years. Undoubtedly, some of the considerations that led to the Métis settlement in the late 1800's were operative over this much larger time-span as well, and clearly the expanded spatial and temporal picture would illuminate the smaller and vice-versa.

Admittedly, even the chronological interpretations at Buffalo Lake are derived more from the historic data than the archaeological, although the former are generally supported by the latter. There is as yet insufficient archaeological information related to social structure, status, community organization, and the like, and for this, too, we must presently draw on the historic record, particularly the voluminous archives of the Oblate fathers.

In the interpretation of these historical data, however, there are some differences of opinion. Among the present authors, for example, Day emphasizes an <u>earlier</u> settlement in the Buffalo Lake area than Doll would infer. In part, this is perhaps a difference of specificity. Clearly,

activity took place in the neighbourhood of northeastern Buffalo Lake long before 1872. However, as Day further suggests, it is frequently very difficult to focus on precise land locations at this time, since the records often refer only to broad geographical areas such as the Battle River system.

The newer archaeological methodologies or paradigms mentioned have only touched on these problems in the present case, but perhaps have considerable potential in addressing them through the archaeological as distinct from the historical data. Stanley South's system of "pattern recognition" has already been applied to the early fur trade period in Alberta, with at least some success. The outcome of studies by Forsman and Gallo (1979) is an "Early Fur Trade Pattern" that can be used in direct comparisons from site to site or can be combined with a sort of "chi square" analysis to derive chronological inferences. This method is suggested for future consideration, but has not been applied here for several reasons. The Métis occupation at Buffalo Lake is relatively remote in time from any of the components compared by South (1977a) or Forsman and Gallo (1979). It may be difficult to obtain quantified artifact data on enough other Métis or contemporaneous sites in western Canada to bear this analysis. Finally, we are somewhat doubtful of the ultimate logic of some categories set up by South, for example his residual "Activities" category that would seem to overlap with several we would identify.

Secondly, we have made some forays into the taxonomy of primary, secondary, de facto, and other sorts of refuse disposal (Schiffer 1977), and to the whole matter of defining activity areas. Certainly, Kooyman has made intriguing suggestions with regards to Métis ethnicity and relationship to the hunt based on the faunal contents of specific Buffalo Lake cabins. On the whole, however, for optimum advantage, the methodology would perhaps require a greater exposure or larger sampling of the site, notably of areas between or separated from known structures. Certainly the richness of the resource is hinted at in the present study, and this activity area approach would presumably be encouraged by the relatively good chronological control and the spatial constraints (the virtually insular location) of the Buffalo Lake site.

A definition of the Buffalo Lake Métis community has been addressed by Day, who emphasizes the <u>difference</u> between this site and other wintering settlements of the period. He suggests that Buffalo Lake approached typicality only as time went on, but that initially it was a commercial centre rather than a wintering site in the usual sense of the word. Doll, on the other hand, argues that both the architectural data that can be obtained (largely lacking on superstructure, except for historical records from <u>other</u> sites), and the archaeological inventory of portable artifacts are essentially consistent within as well as between sites, and can be considered typical of the <u>hiverement</u> (wintering) occupations of the 1870's. Because of the complexity of the community at Buffalo Lake, as indicated by the historical record and suggested by part of the archaeological record, we are inevitably forced to expand our definition of <u>hivernement</u> and its implications for the various people who formed the community. Surely this task has just begun.

Again, such differences in historical interpretion may reflect primarily a society itself somewhat ambivalent, in terms of the various strong impinging forces discussed in Chapters II, III, and below. Although sites like Buffalo Lake or the Cypress Hills are perhaps best viewed as primarily commercial operations, yet they still retain a good deal of the "cultural baggage" that would be more typical of settlelments such as St. Albert or Lac Ste. Anne. Furthermore, in spite of their relative isolation and the differences in political and other self-identification from Red River, as emphasized by Day, they nevertheless manifest some orientation to a larger sphere that may be generalized as a Métis "nation" or "experience."

This orientation to the broader sphere, though clearly not identical to the Red River experience under Louis Riel, is reflected in Day's emphasis on the sophistication of Upper Saskatchewan society, the evidence for substantial scale, coherence, organization, role-differentiation, and concern for social welfare within the mobile community that constituted the Métis hunt. This sophistication is also reflected in the Métis technology. Doll suggests, on the basis of archaeological recovery of a variety of ammunition and ignition components, that hivernant society had the most highly developed firearms technology in the Canadian northwest at this time. This further evidence of sophistication was of course supported by the highly developed, mobile commercial supply system, the many traders who converged on the Buffalo Lake site from various directions. As well as independents, these traders represented major companies. In addition, there is some archaeological evidence to suggest that a cash economy existed here at least a decade before it became established in settlements such as Edmonton, where it appeared in 1885 accompanying a contingent of troops from Quebec (Daoust 1982:101).

Again, in the matter of architecture, interpretations of the historical data and of its relationship to the archaeological record differ somewhat. Notably, Day's research suggests larger structural units and the presence of flooring, not reflected up to this time in the archaeological excavations. Again much of this historical interpetation is drawn from localities separated from Buffalo Lake, and on the other hand, the archaeological sample may not yet reflect the once-existing diversity of styles. Certainly variations, for example from south to north, are historically documented, and Buffalo Lake seems to some extent to have constituted a meeting ground for people of diverse origins. There is agreement by Doll, however, that more sophisticated architecture should exist at Buffalo Lake, given the rather complex nature of the community that occupied the site and the styles documented by Day in the general area. Architectural complexity is surely exhibited in the archaeological remains of Cabin 5. Field work was discontinued, however, before sufficient excavation would allow any accurate interpretation of these remains. Surely this must be one question to be resolved by future work at Buffalo Lake.

Archaeological evidence is again silent in the matter of household size and composition, but historical data suggest the adoption of an essentially nuclear family residence after the smallpox epidemic of 1870. This is contradictory to some previous assumptions.

Considerable attention has focused on the abandonment of the Buffalo Lake site. Doll suggests it took place in 1878, although Day argues for a slightly later date, and again there is some difference of opinion as to cause. It seems likely, at any rate, that the cause was not singular and that in fact a number of elements may have been variously involved. Certainly the rapid decline of the bison and even earlier demise of the buffalo robe trade were prime factors, particularly in consideration of Buffalo Lake's early and significant commercial focus. It is suggested, however, that the hunt was actually prolonged by climatic factors that delayed the shift into a primary agricultural economy, or abandonment might have taken place even earlier. Other likely factors were flooding, the growing importance of nearby communities, and perhaps (despite Day's doubts) a growing shortage of firewood, small game, and forage.

As has been recently observed by various scholars, a great deal of "mythology" attaches to the study of the southern and western Métis. In this context, the Red River "paradigm" has been dominant. As suggested above, there are unquestionably shared ethnic attributes, but there are also important differences relating to origins, technology, associations, political structures, and self-identification.

The Buffalo Lake site provides an excellent case-study of culture change, the study of a social structure impinged upon by a variety of crises identified in the historical record. These include the attack of a disease of unprecedented severity, the disappearance of the major subsistence resource (as well as a major "trade" item), severe climatic fluctuations, and broad governmental and societal changes.

In the older "mythologies," the southern and western Métis were too frequently perceived either as a leftover from the fur trade or as a satellite of Red River. Through continuing problem-oriented historical and archaeological studies, a better understanding of these varying "mythologies" will emerge. The combined study of the Buffalo Lake archaeological site and of the relevant documents will focus on the western Métis as a discrete community with a particular ecological and economic base, and a material record of sophisticated adaptations.

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Item 315, W. J. Christie to Hardisty, Fort Garry, March 21, 1873.

Item 352, William McKay to Hardisty, Fort Pitt, July 1, 1873.

Item 362, John Sinclair to Hardisty, Buffalo Lake, February 18, 1873.

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FIGURES

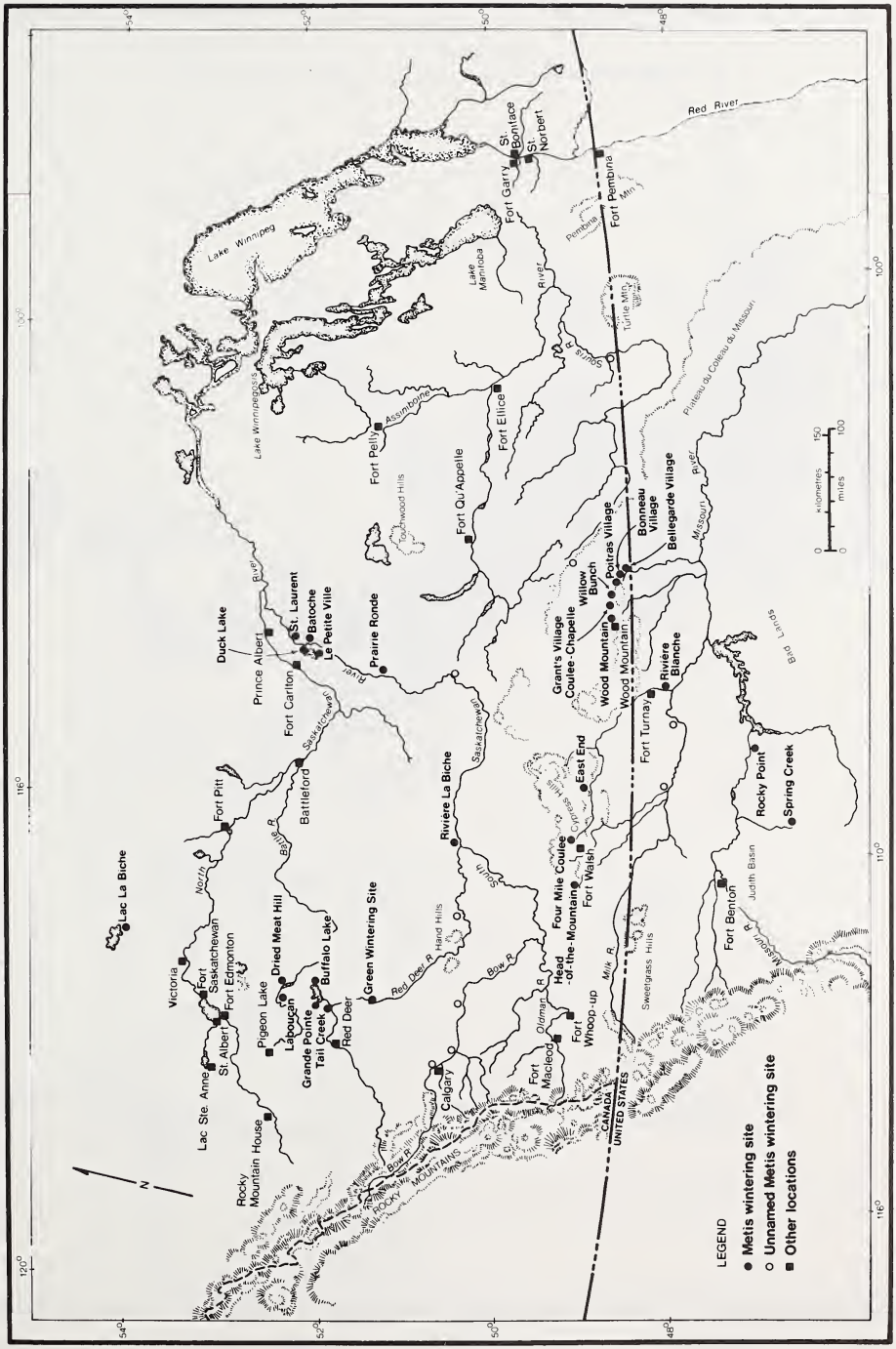


Figure 1. Map of Western Canada, showing Métis wintering sites and related locations.

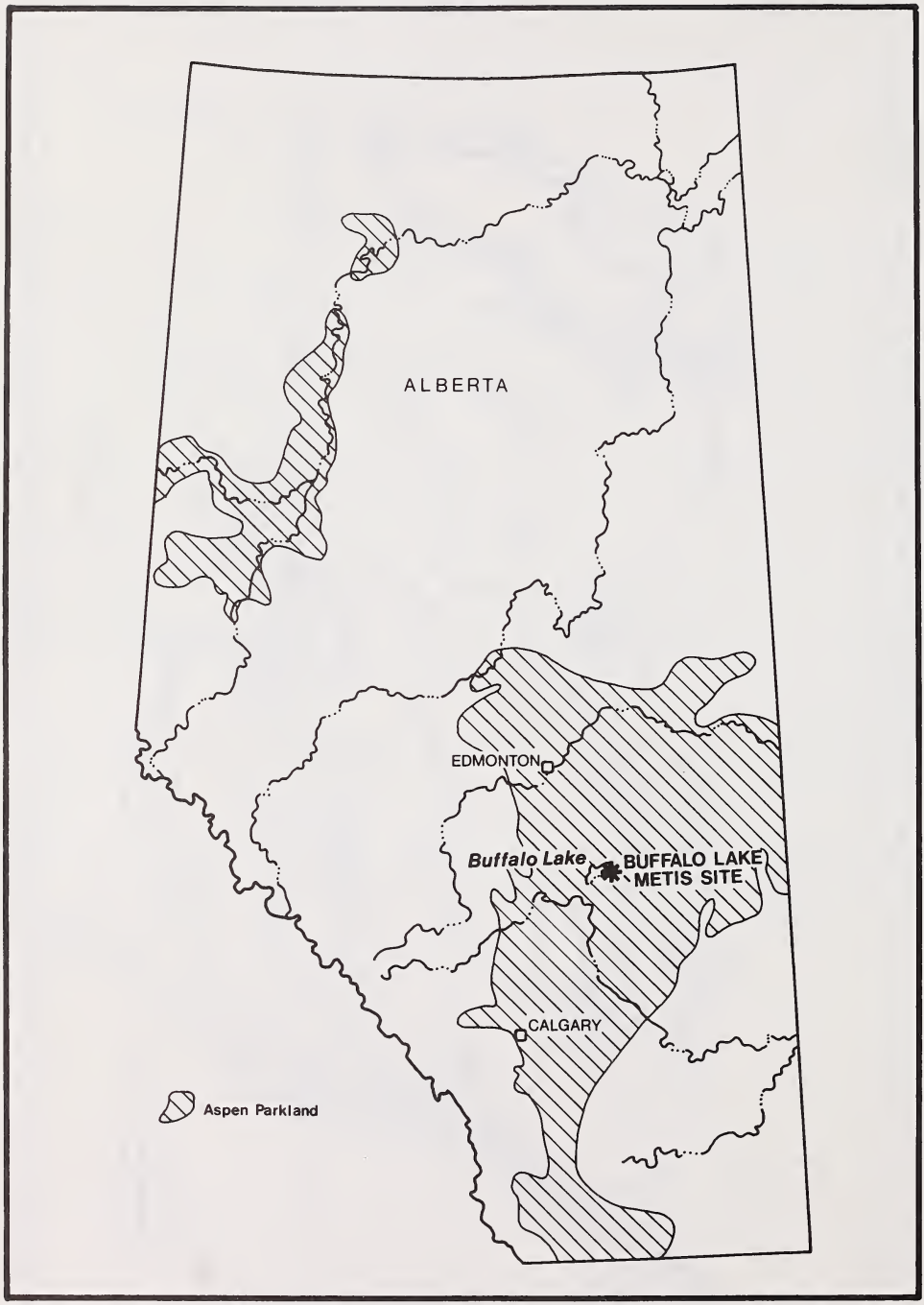


Figure 2. Present extent of Aspen Parkland and the location of the Buffalo Lake Métis site, Alberta.

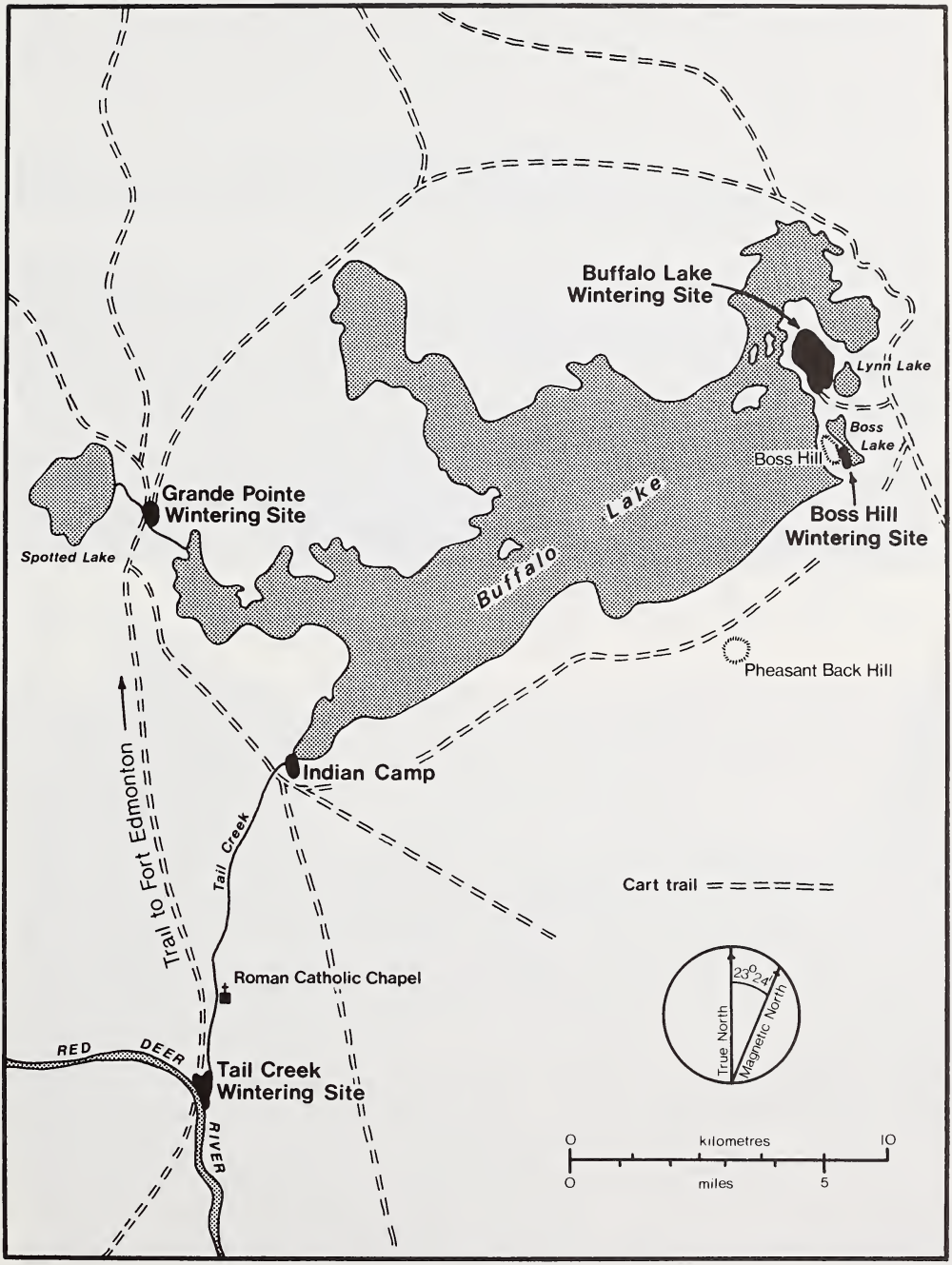


Figure 3. Map of Buffalo Lake, showing the locations of wintering sites and related settlements.

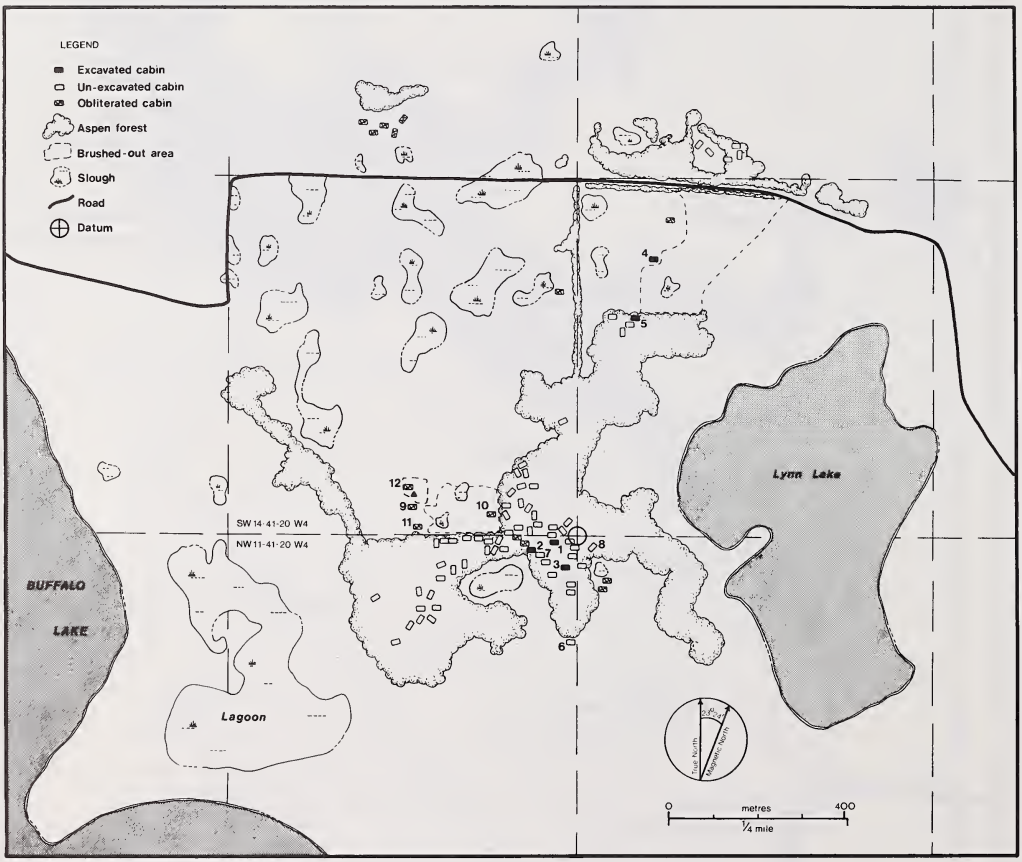


Figure 4. Map of Buffalo Lake Métis site, showing locations of excavated and unexcavated cabins.

Figure 5a. Buffalo Lake Métis Site. View of Boss Hill, to the southeast. The Métis site is in the extreme left and runs out of the picture. Buffalo Lake is in the foreground.

Figure 5b. Buffalo Lake Métis site to the east. The wooded ridge in the background contains many of the cabin locations.

Figure 6a. "Half-breed" house, Wood Mountain Settlement, Saskatchewan. This is a typical house used in areas occupied by the peoples of the Lower Saskatchewan south of the fertile belt. Successive extensions, forming a multiple-dwelling unit, are known to have been employed at St. Albert prior to the smallpox of 1870. St. Albert houses, however, used post-on-sill construction with logs squared by broad-axe. National Archives of Canada, C-81781, 1975-122 (G. M. Dawson, Case 42, No. 169, Album 2, p. 45).

Figure 6b. Dawson City, June 1898. Permanent buildings erected in 1896 or earlier are interspersed with uncompleted buildings and tents. This is a good example of the typical development of a very rapidly growing settlement within geographical constraints similar to those at Buffalo Lake. National Archives of Canada, C-16872, 1948-98 (Mines and Resources).

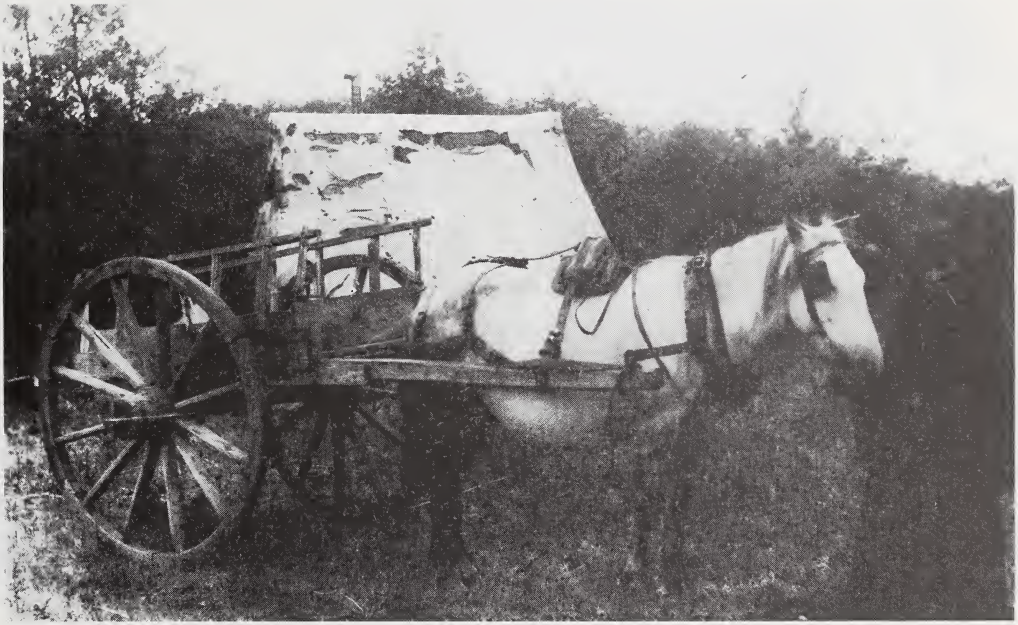


Figure 7a. Mrs. Michel Vivier, resident of Buffalo Lake, 1873-1878, with cayuse, tent, and Red River cart. Provincial Archives of Alberta, B.1042, E. Brown Collection.

Figure 7b. School-chapel of ca. 1876, showing a style of construction perhaps comparable to that at Buffalo Lake. Provincial Archives of Alberta, Ob.2004, Oblate Collection.

Figure 8a. Original home of the Brelands, built ca. 1874, from Battle River Country: The History of Duhamel and Area. Photograph courtesy of the Duhamel Historical Society.

Figure 8b. The Jérome Laboucane House, identified as being built around 1860 (actually about 1875). The picture was taken about 1909. From Battle River Country: the History of Duhamel and Area. Photograph courtesy of the Duhamel Historical Society.

Figure 9a. Buffalo Lake Métis Site to the north, showing vegetation on the ridge in the vicinity of cabins.

Figure 9b. Buffalo Lake Métis Site, excavations at Cabin 3, to northwest.

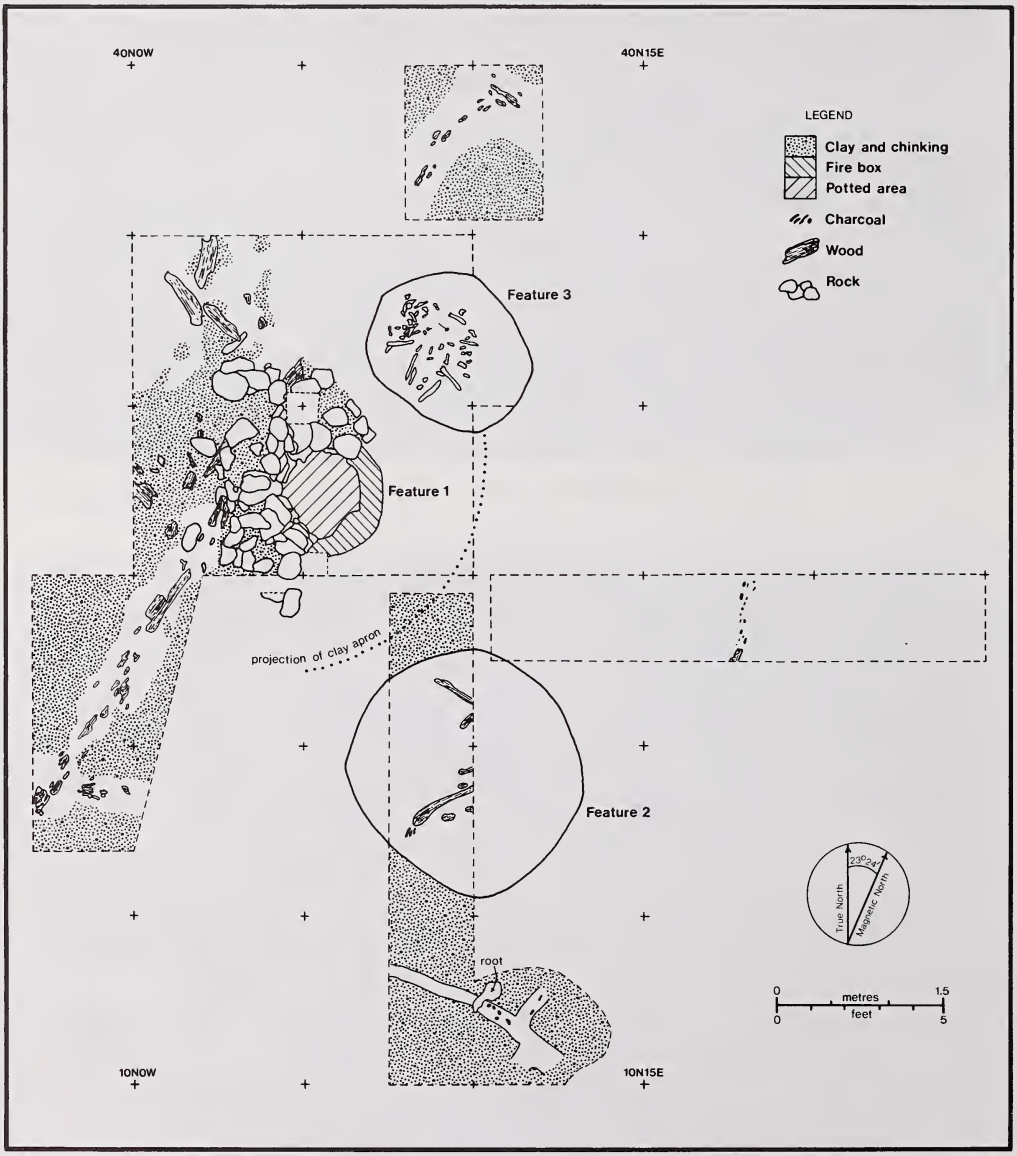


Figure 10. Buffalo Lake Métis Site. Cabin 3, plan view.

Figure 11a. Cabin 3. Fireplace (Feature 1), to southwest, showing the firebox and profile of the south wall.

Figure 11b. Fireplace, from above.

Figure 12a. Cabin 3. Fireplace (Feature 1), to west-northwest, showing the uppermost ash layer.

Figure 12b. Fireplace, to west, showing the second ash layer.

Figure 13a. Cabin 3. Fireplace (Feature 1), to west, showing the second ash layer and contiguous occupation level.

Figure 13b. Fireplace, to southeast, showing detail of the second ash layer and contiguous occupation level.

Figure 14a. Cabin 3. Fireplace (Feature 1), to south, showing profile of clay apron and ash layers.

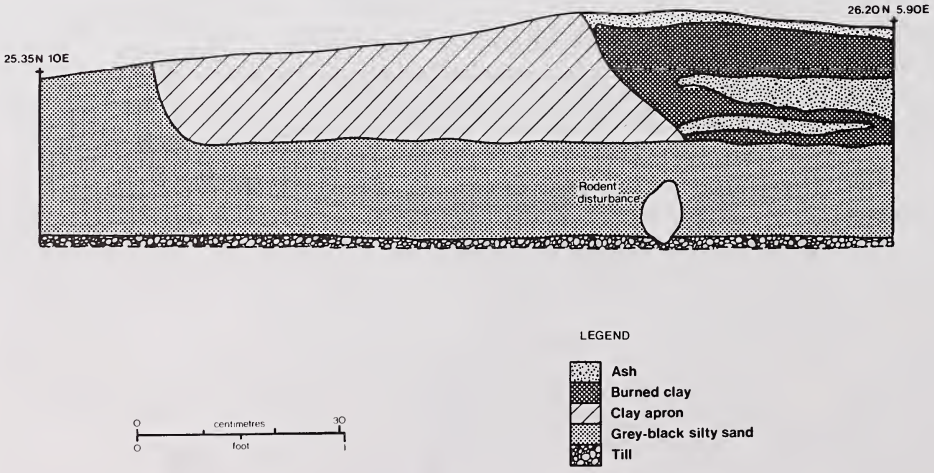


Figure 14b. Fireplace. Profile of south wall, showing clay apron and ash layers.

Figure 15. Chimney formerly located in Chimney Coulee, northwest of Eastend, Saskatchewan. The site was occupied in approximately 1880-1890. This chimney may generally resemble those built at Buffalo Lake. Photos (ca. 1910-1913) courtesy of Eric A. Holmes.

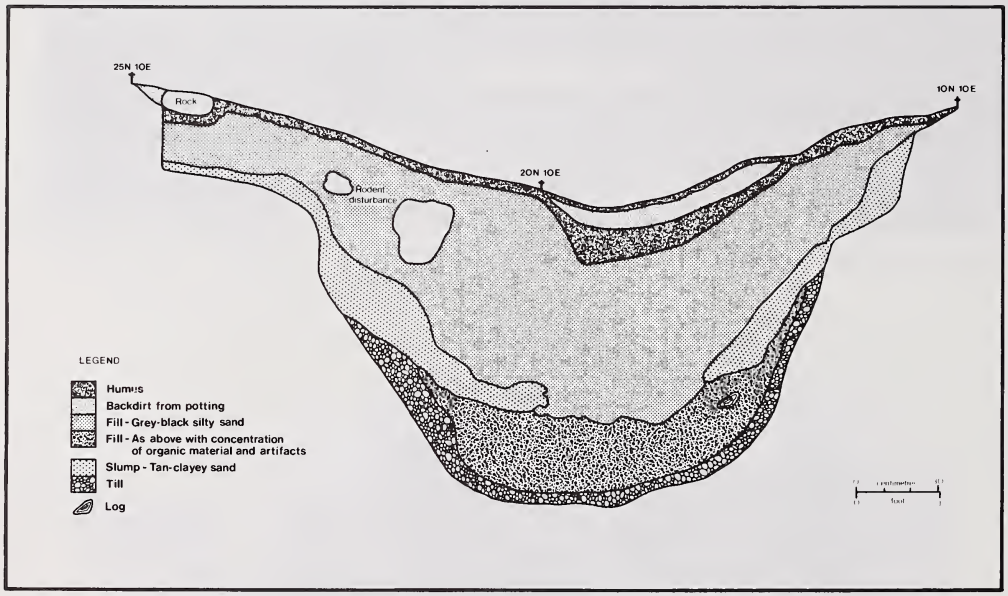


Figure 16. Cabin 3. Interior Storage and Refuse Pit (Feature 2), profile of east wall.

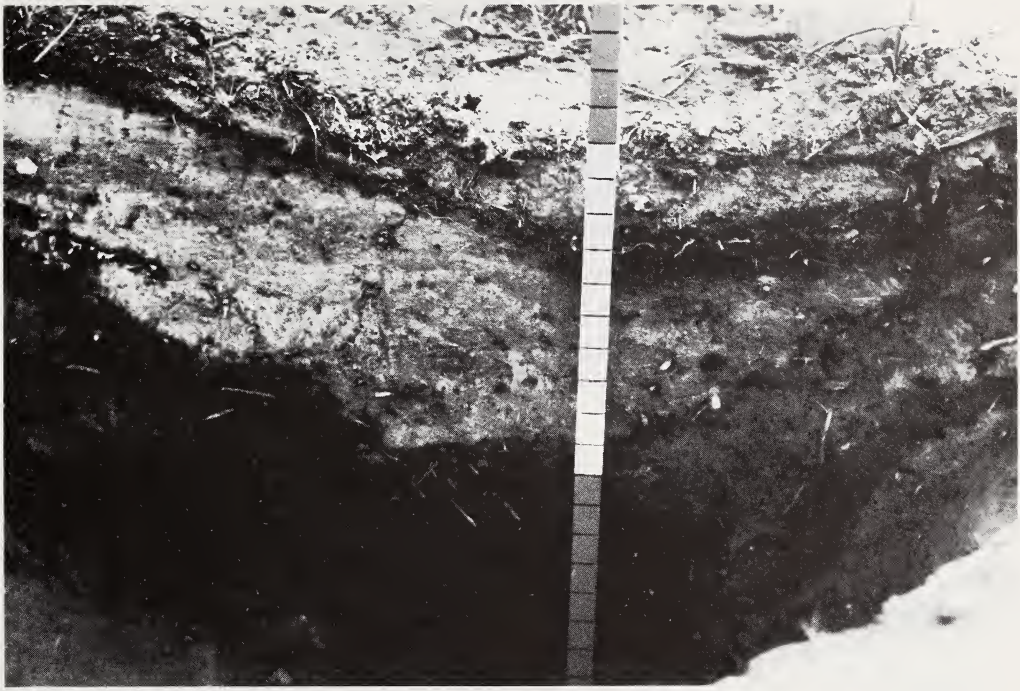


Figure 17a. Cabin 3. Interior Refuse Pit (Feature 3), to east.

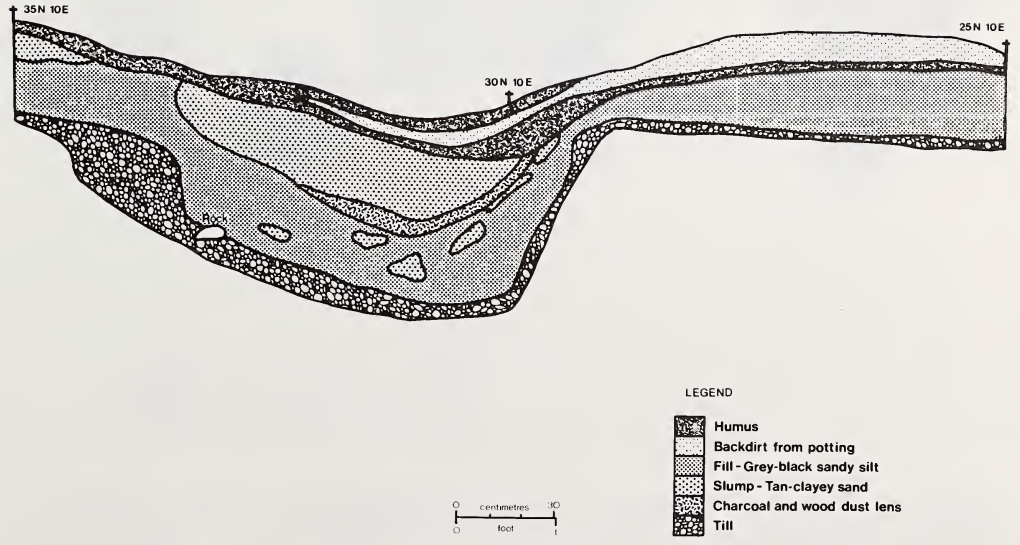


Figure 17b. Cabin 3. Interior Refuse Pit, east wall profile.

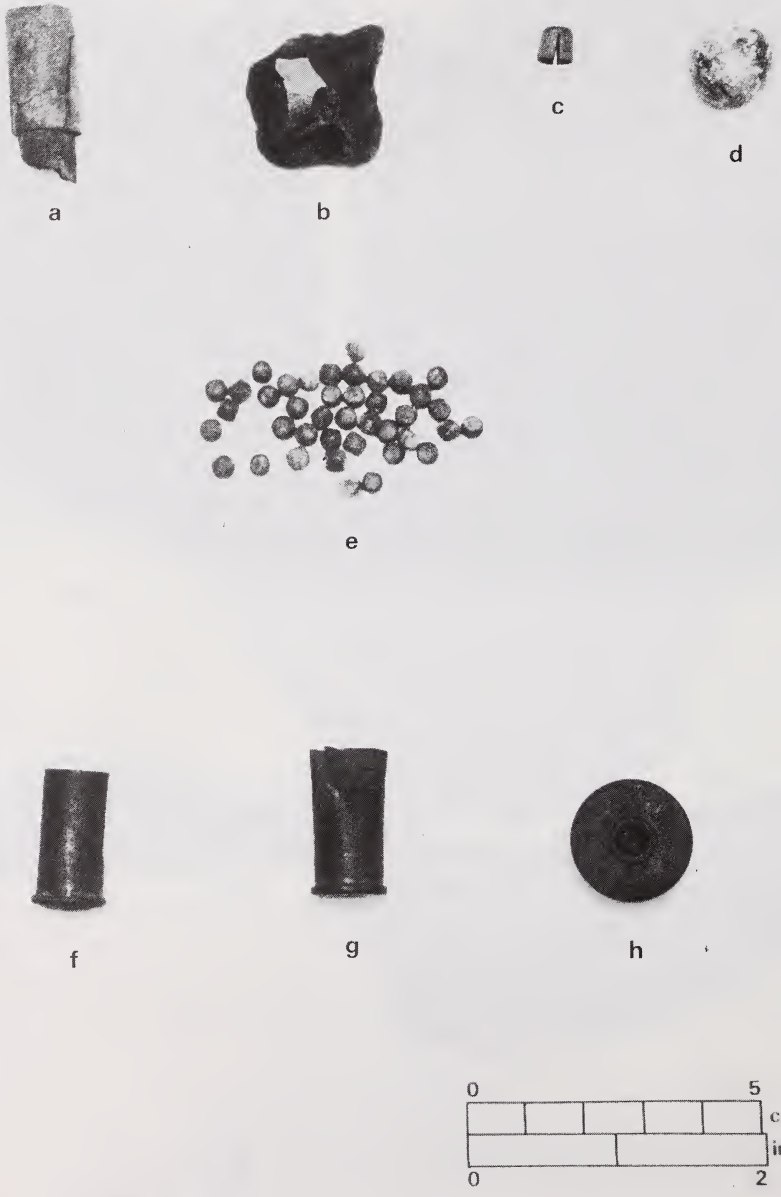
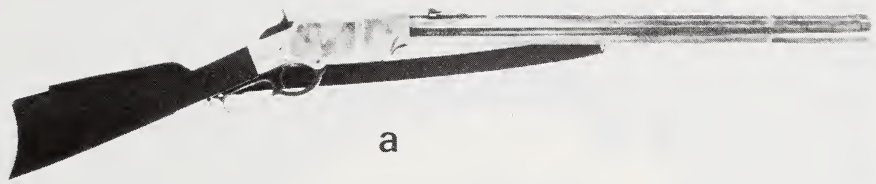
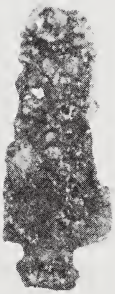


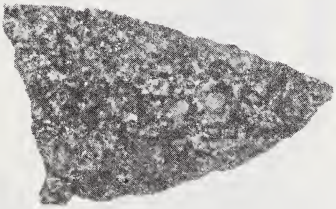
Figure 18. Cabin 3. Artifacts related to Hunting. a, brass ramrod ferrule; b, gunflint; c, percussion cap; d, round ball; e, lead shot; f, rimfire cartridge case; g, centrefire cartridge case; h, centrefire shot shell.



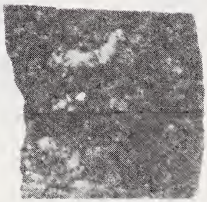
a



b



c



d

Figure 19. Cabin 3. Artifacts related to Hunting. a, Henry repeating rifle (not to included scale), Glenbow Collection; photograph courtesy of Glenbow Museum; b, iron projectile point; c, knife blade tip; d, modified knife blade fragment.

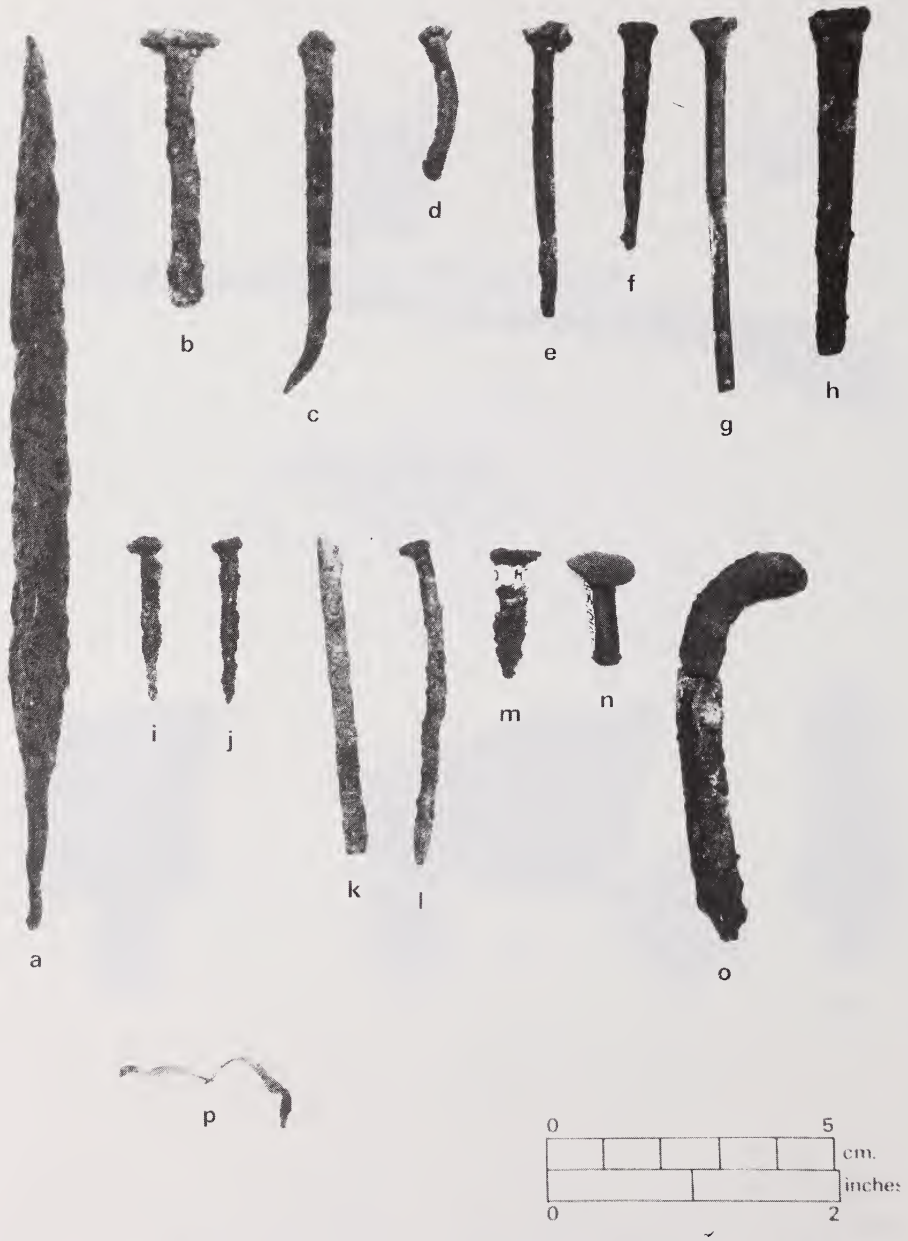


Figure 20. Cabin 3. Artifacts related to Construction, Blacksmithing, and Crafts. a, triangular file; b, rose-head forged nail fragment; c, gable-head forged nail fragment; d, gable-head cut nail fragment; e, f, flat-head cut nails, Group 1; g, h flat-head cut nails, Group 2; i, j, flat-head cut nails, Group 3; k cut nail shank fragment; l, wire nail; m, iron wood screw; n, copper rivet; o, iron pintle or hook fragment; p, iron sheet staple.

Figure 21. Cabin 3. Artifacts related to Household, Business, and Personal Maintenance. Ceramics. a, plain white glazed earthenware, possible bowl sherd; b, cup or small bowl sherd; c, dinner plate sherd; d, bowl sherd; e dinner plate bottom; f, creamware cup sherd.

Figure 22. Cabin 3. Artifacts related to Household, Business, and Personal Maintenance. Ceramics. a, monochrome underglaze transfer-printed ware cup sherds; b, possible cup or bowl sherd; c, shallow bowl or saucer sherd; d, possible cup or bowl sherds; e bowl sherd; f, shallow bowl or saucer sherd; g, cup or small bowl sherd.

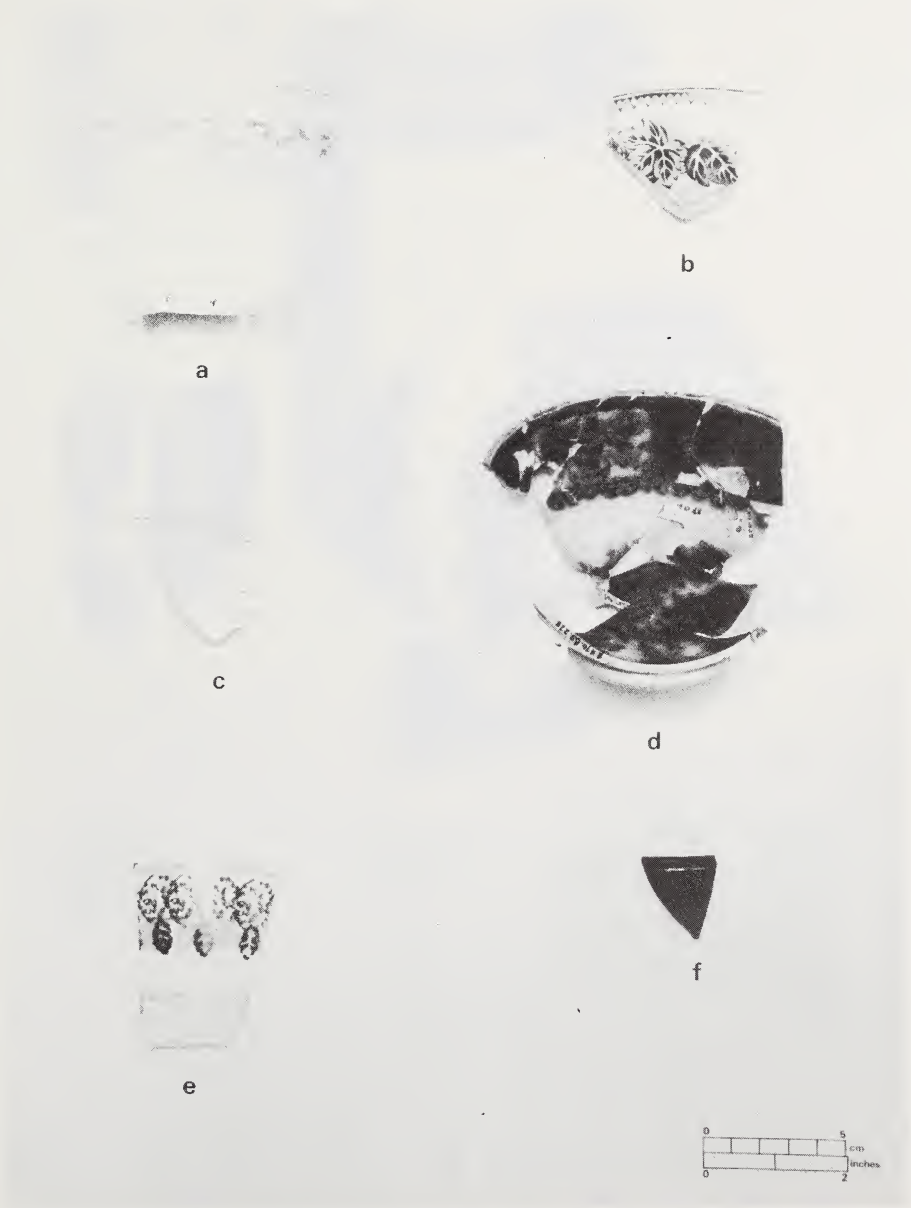


Figure 23. Cabin 3. Artifacts related to Household, Business, and Personal Maintenance. a, monochrome underglaze transfer-printed ware, small bowl sherd; b, saucer or shallow bowl sherd; c, bowl sherd; d, bowl sherd; e, polychrome underglaze sponge-stamped ware, cup sherd; f, red stoneware, cup sherd.

Figure 24. Cabin 3. Artifacts related to Household, Business, and Personal Maintenance. Glassware. a, transparent bottle glass sherds; b, Perry Davis Vegetable Pain Killer bottle sherds; c, medicine or druggist's bottle sherds; d, scotch-style whisky bottle sherds; e, multiple dose medicine bottle sherds; f, mirror glass; g, window glass.

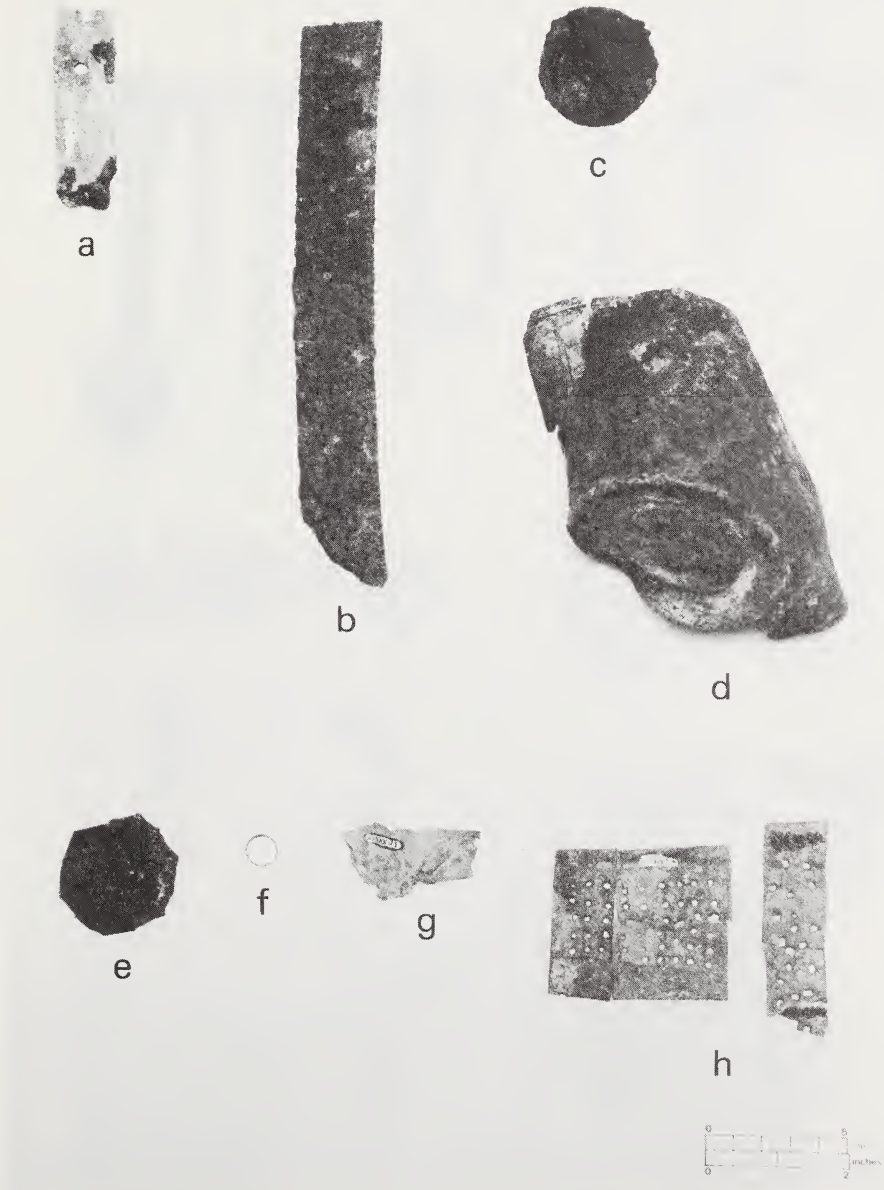


Figure 25. Cabin 3. Artifacts related to Household, Business, and Personal Maintenance. a, iron strapping; b iron keg or barrel hoop fragment; c ferrous metal container lid; d, iron can; e, iron can fragment; f, brass metal ring; g, lead foil; h, perforated zink alloy sheet fragments.

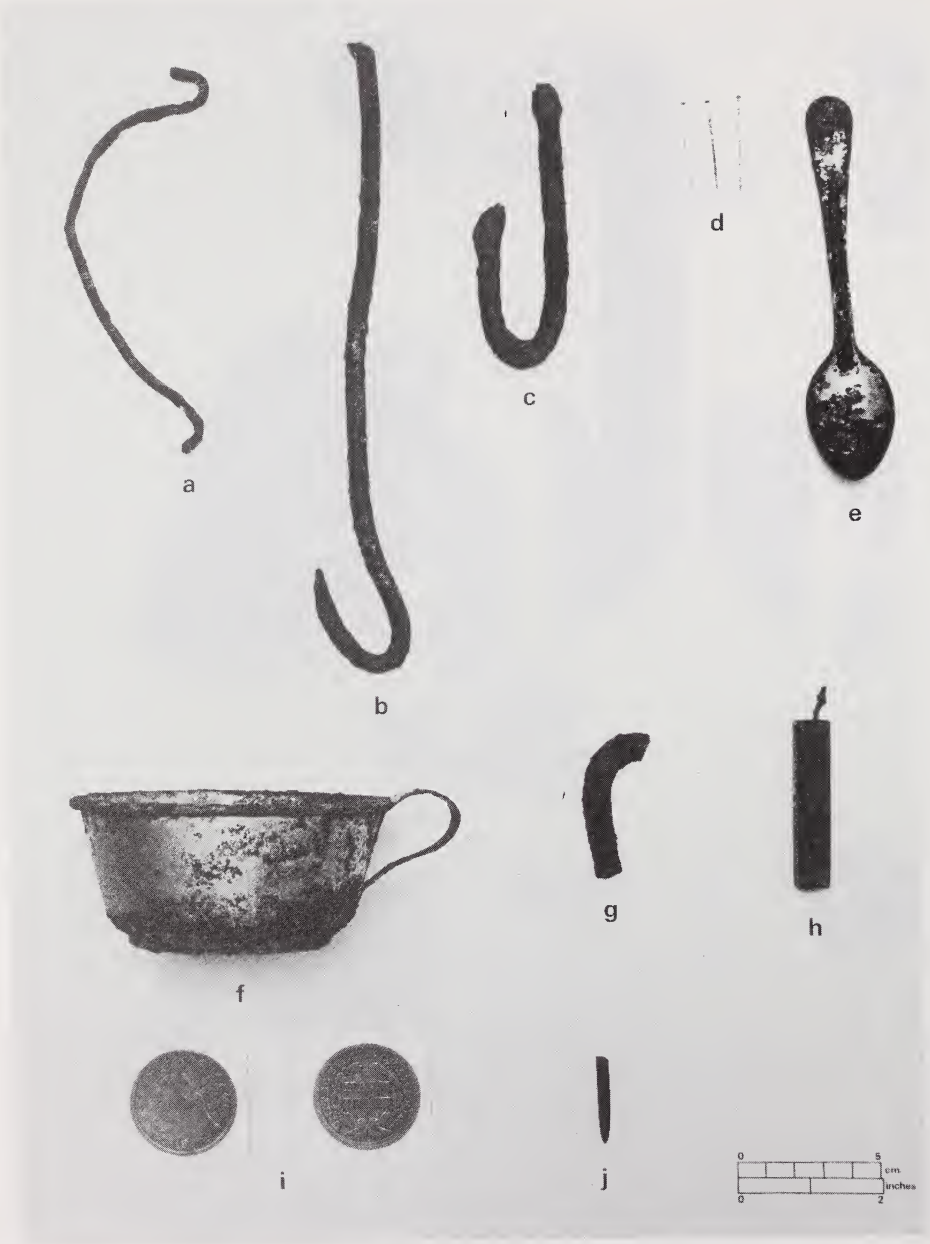


Figure 26. Cabin 3. Artifacts related to Household, Business, and Personal Maintenance. a, wire handle; b, c, iron hooks; d, metal straight pins; e, stamped metal spoon; f, tin-plated cup; g, strike-a-light fragment; h rectangular brass object; i, silver United States half dime (not to included scale); j, hard rubber comb tooth.

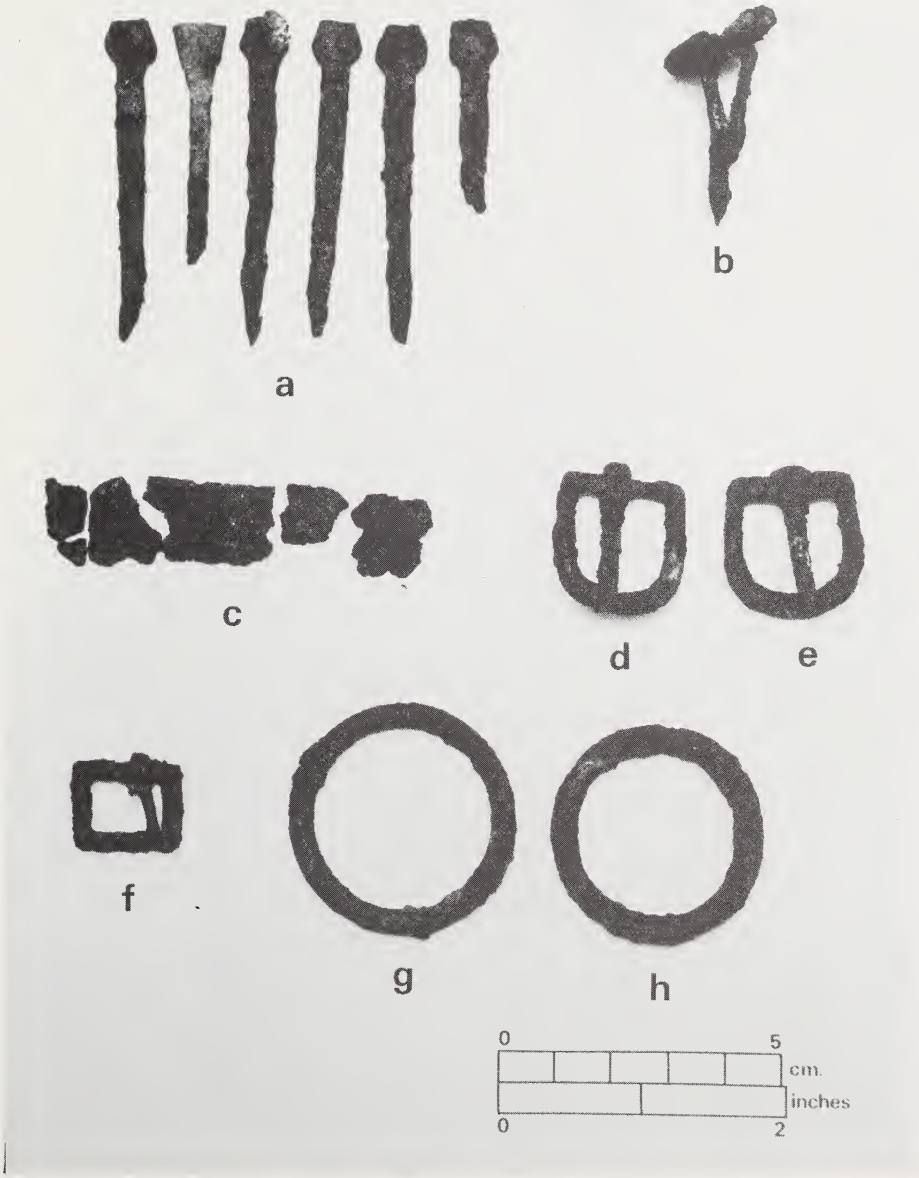


Figure 27. Cabin 3. Artifacts related to Transportation. a, horseshoe nails; b, base of harness stud or bell; c, leather harness strap fragment; d, e, harness buckles with rounded end; f, harness buckle with straight end; g, h, harness rings.

Figure 28. Cabin 3. Artifacts related to Dress and Ornamentation. Buttons. a, Type 1a glass button; b, Type 1b glass button; c, Type 2 glass button; d, Type 3 glass button; e, Type 4 glass button; f, Type 5a, plain white glass button; g, Type 5b, quilted or cross-hatched overglaze transfer design glass button; h, Type 5c, pale blue glass button; i, Type 5d, branch and leaves design glass button; j, Type 6 glass button.

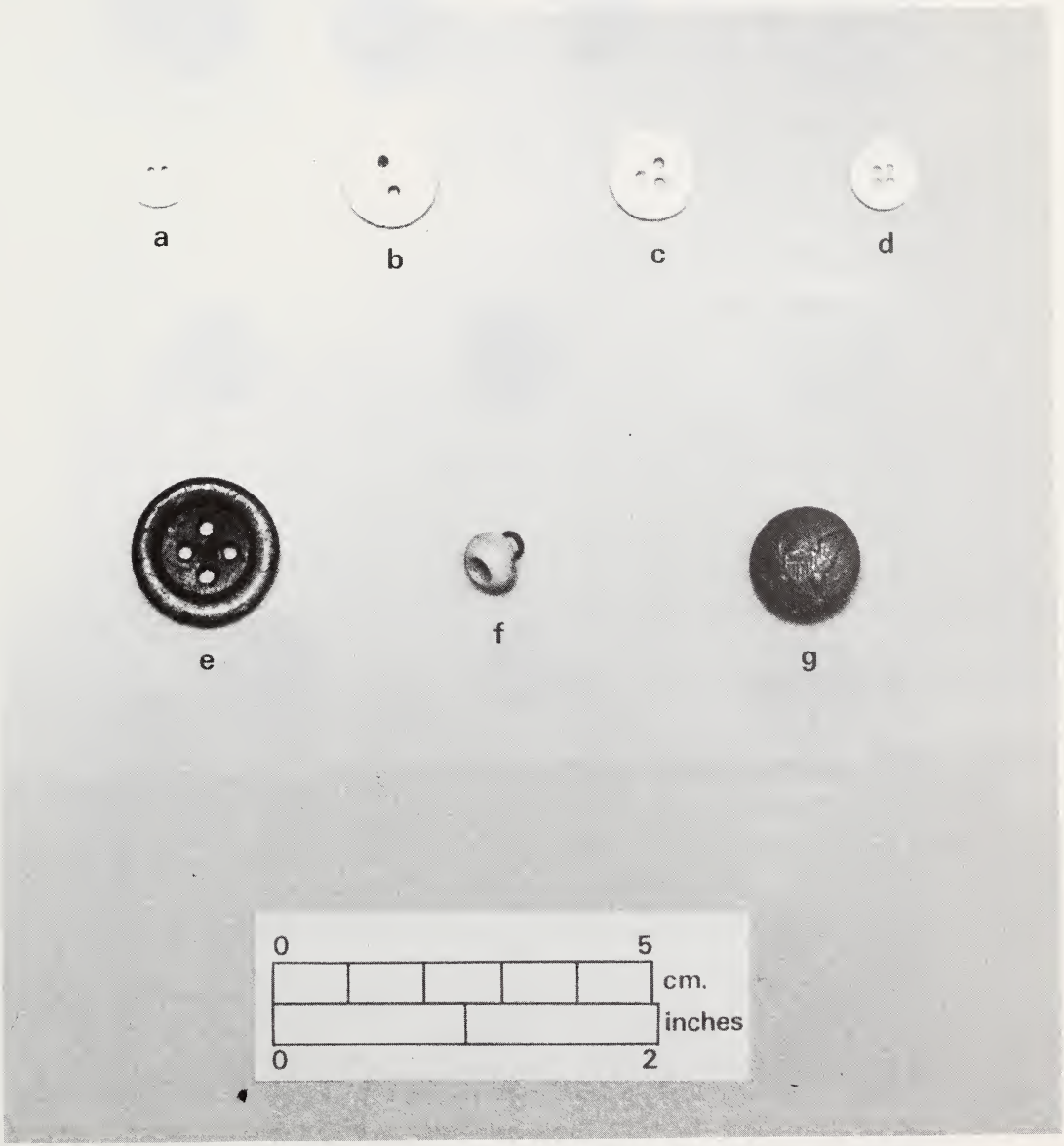


Figure 29. Cabin 3. Artifacts related to Dress and Ornamentation. Buttons. a, Type 1 shell button; b, Type 2 shell button; c, Type 3 shell button; d, Type 4 shell button; e, Tupe 1 bone button; f, Type 2 bone button; g, Type 1 two-piece military button with wire shank.

Figure 30. Cabin 3. Artifacts related to Dress and Ornamentation. Buttons. a, Type 2 one-piece, spun-back cast metal button; b, Type 3 metal button; c, Type 4, Variety a metal button; d, Type 4, Variety b metal button; e, Type 5, Variety a metal button; f, Type 5, Variety b metal button; g, Type 6 metal button; h, Type 7 metal button; i, Type 8, Variety a metal button; j, Type 8, Variety b metal button.

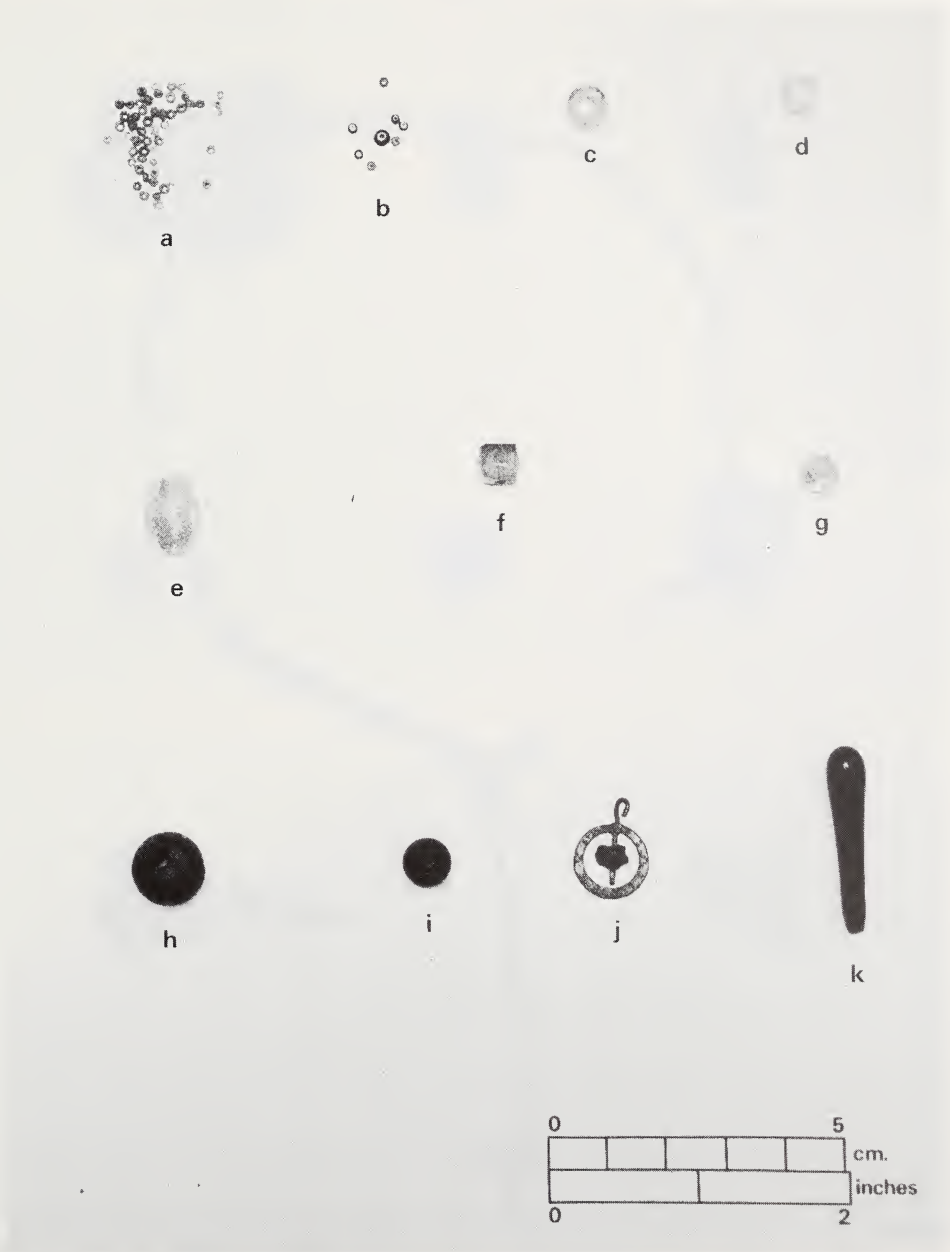


Figure 31. Cabin 3. Artifacts related to Dress and Ornamentation. Beads and Ornaments. a, monochrome drawn tubular beads; b, bichrome drawn tubular beads; c, transparent wound bead; d, translucent wound bead; e, facetted wound bead; f, transparent green pressed glass bead; g, transparent yellow pressed glass bead; h, i, metal beads; j, pendant; k, glass object.

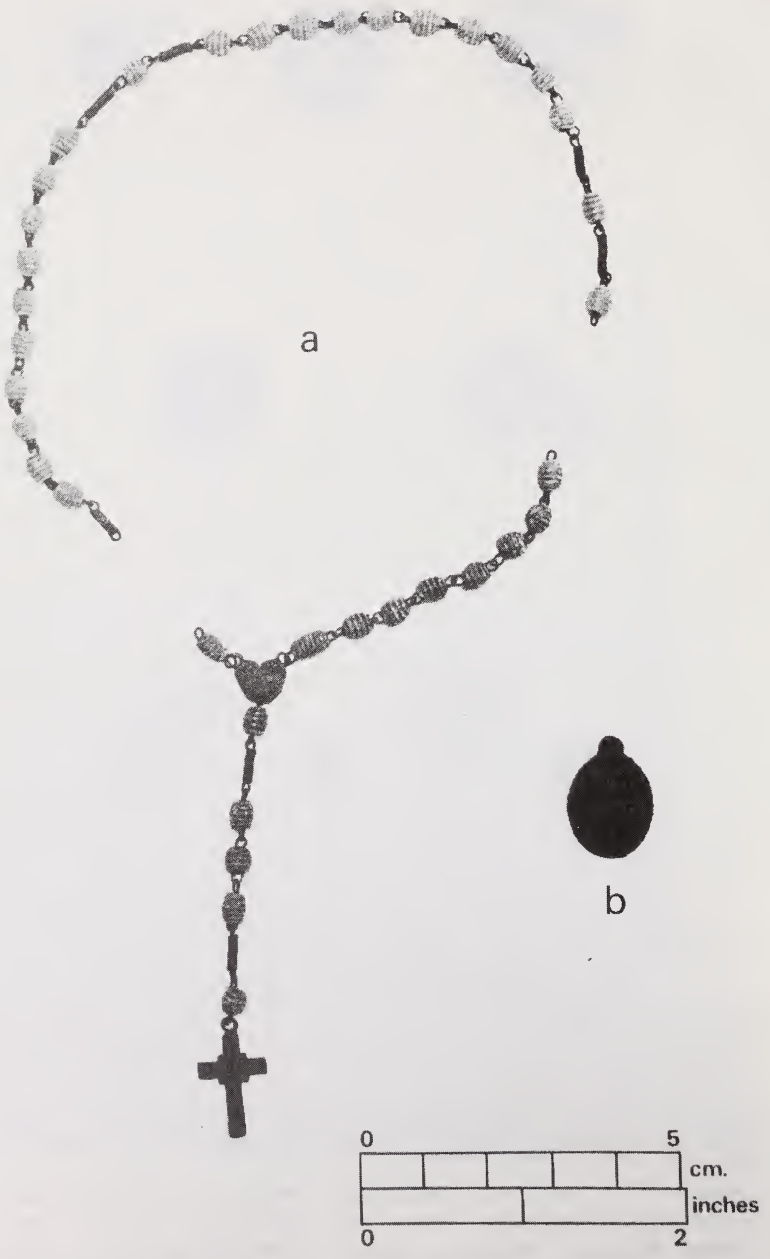


Figure 32. Cabin 3. Artifacts related to Religion. a, rosary; b, medal.

Figure 33. Cabin 3. Artifacts related to Native Industries. a, ceramic fragment; b, side-notched projectile point fragment; c, d, triangular projectile point fragments; e, f, end-scrapers; g, retouched flake; h, utilized flake.

Figure 34a. Buffalo Lake Métis Site. Cabin 1, to north, showing general location and nature of vegetation.

Figure 34b. Excavations at Cabin 1, 1971, to east.

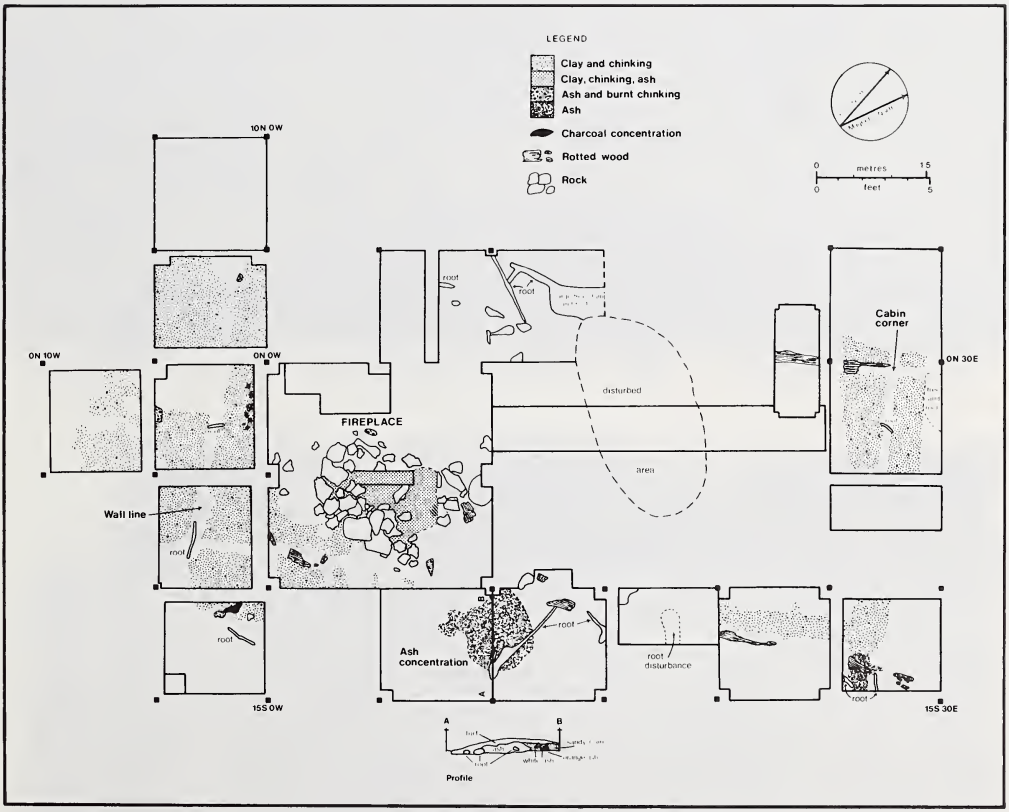


Figure 35. Cabin 1, plan view, showing wall lines, Fireplace (Feature 1), and Ash Concentration (Feature 2). A-B on plan shows location of profile of Ash Concentration (inset).

Figure 36a. Cabin 1. Earth ridge representing west wall of the cabin, to north.

Figure 36b. View of same ridge from above, to southwest.

Figure 37a. Cabin 1. Northeast corner of cabin, represented by traces of timber in the earth, to north.

Figure 37b. Cabin 1. Fireplace (Feature 1), to west. Probable firebox is in the foreground.

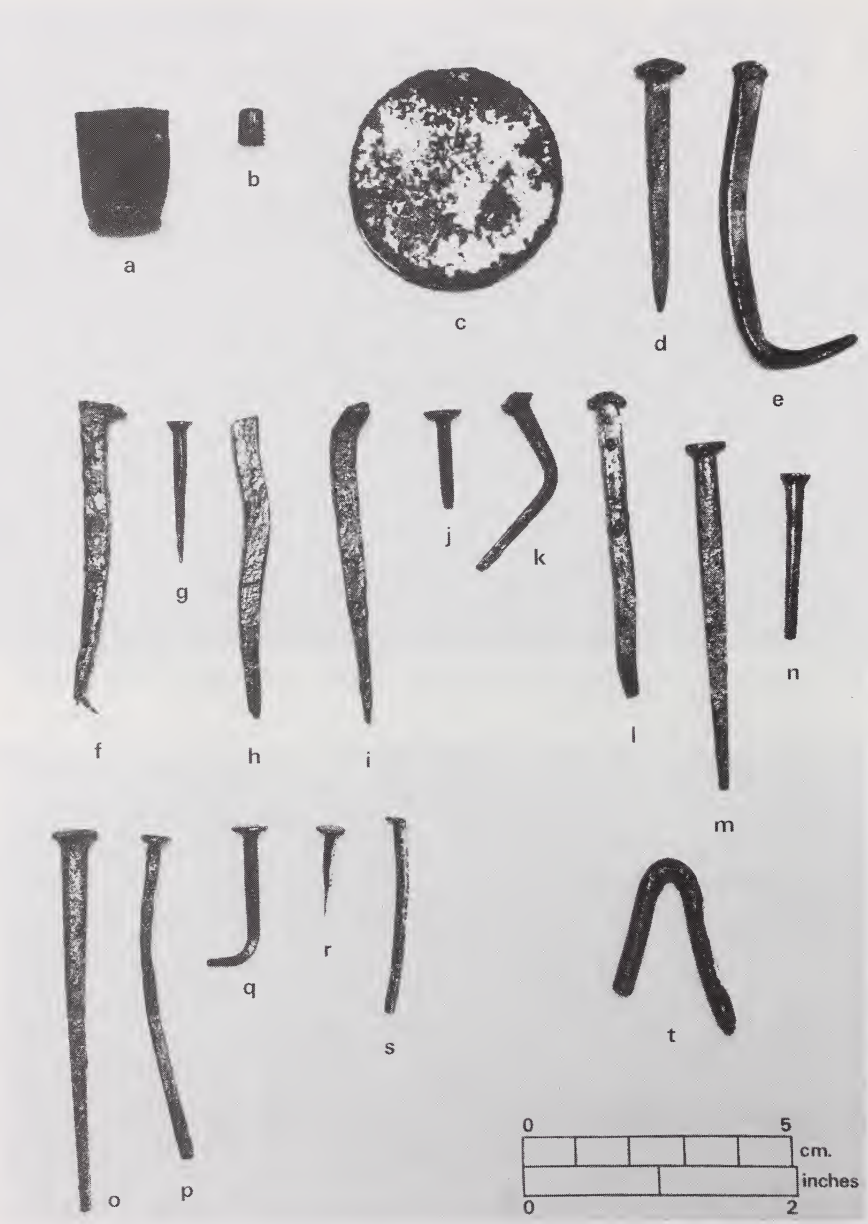


Figure 38. Cabin 1. Artifacts related to Hunting and to Construction, Blacksmithing, and Crafts. a, rimfire cartridge case; b, percussion cap; c, cap box lid; d, rose-head forged nail; e, gable-head forged nail; f, L or T-head forged nail; g, flat-head forged nail; h, i, forged nail fragments; j, forged or cut iron nail; k, rose-head cut nail; l, gable-head cut nail; m, n, flat-head cut nails, Group 1; o, p. flat-head cut nails, Group 2; q, r, flat-head cut nails, Group 3; s, cut nail fragment with pounded end; t, iron wire.

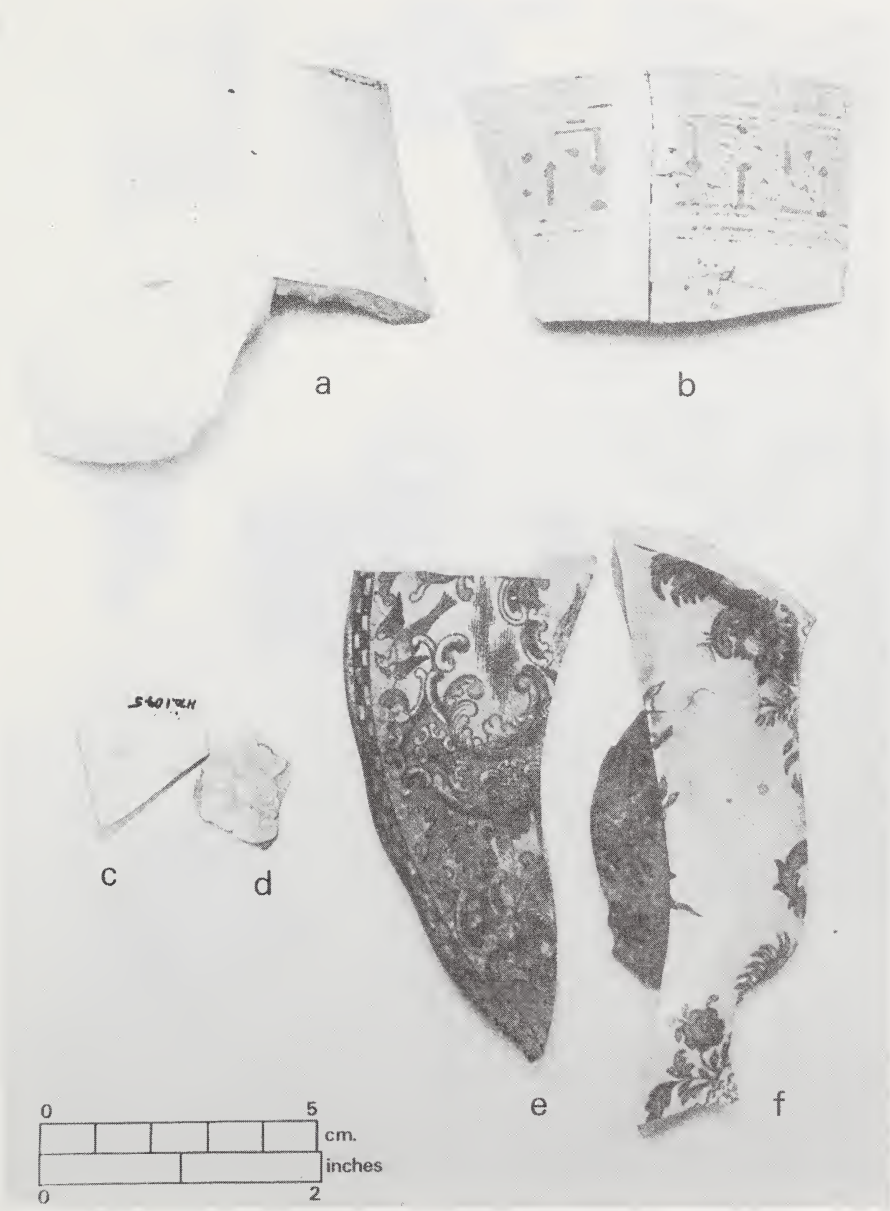


Figure 39. Cabin 1. Artifacts related to Household, Business, and Personal Maintenance. Ceramics. a, plain white glazed earthenware sherd; b, Copeland earthenware sherd with blue geometric "Turco" pattern; c, d, Copeland earthenware sherds with blue "Grapevine" pattern; e, f, Copeland earthenware plate fragment with blue transfer-printed "Beverly" pattern.

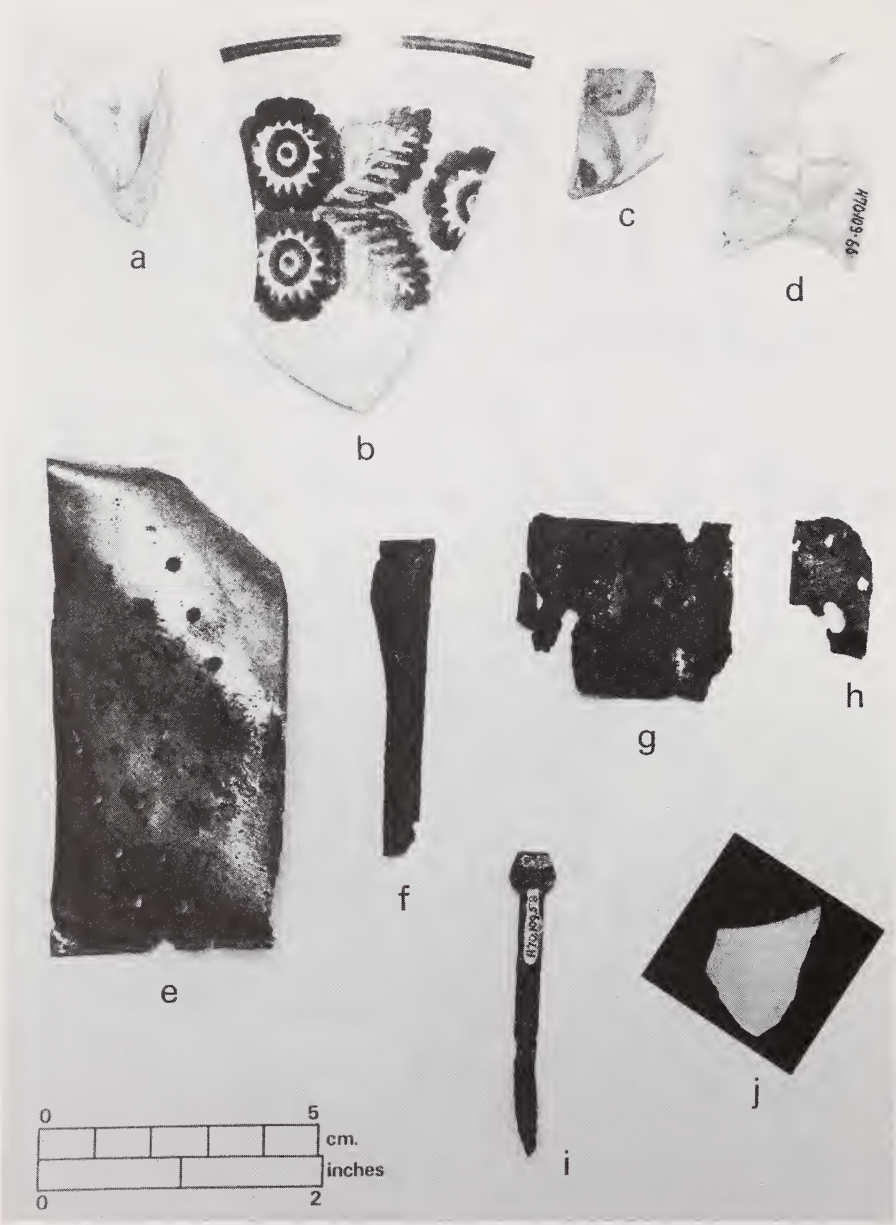


Figure 40. Cabin 1. Artifacts related to Household, Business, and Personal Maintenance, to Transportation, and to Recreation and Smoking. a, earthenware sherd with "flowed" blue transfer-printed pattern B 772; b, "Portneuf" earthenware sherd with brown and green flower pattern; c, earthenware sherd with pink, green, and purple leaf-and-flower design; d, green glass bottle fragment; e, perforated metal object; f, tin-plate box fragment; g, corrugated tin-plate fragment; h, irregular perforated iron sheet; i, horseshoe nail; j, pipe bowl fragment.

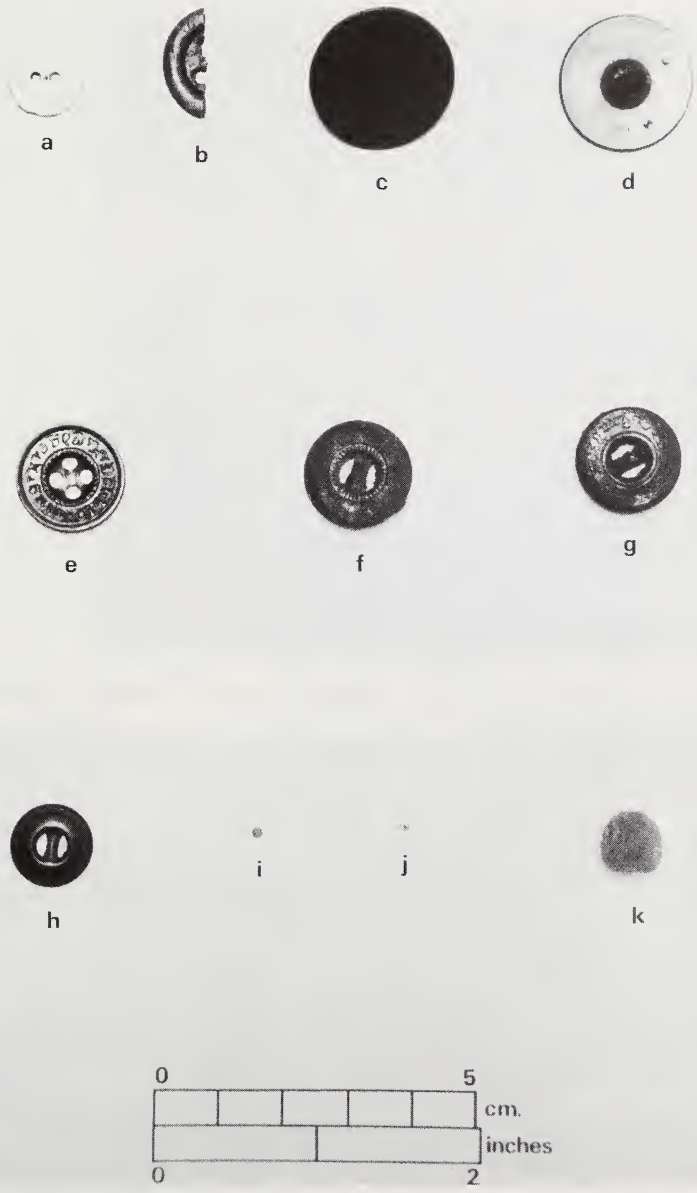


Figure 41. Cabin 1. Artifacts related to Dress and Ornamentation. a, Type 1 shell button; b, Type 1 bone button fragment; c, d, Type 2 one-piece spun-back cast buttons; e, Type 4, Variety a, "birdcage" brass button; f, Type 5a decorated hollow two-piece brass and iron button; g, Type 5d decorated hollow two-piece brass and iron button; h, Type 5? plain hollow two-piece brass button; i, small blue glass bead; j, small pink glass bead; k, large amber glass bead.

Figure 42a. Cabin 2. Near cabin location, to north, showing type of vegetation on top of the ridge.

Figure 42b. Excavations in 1971, to west.

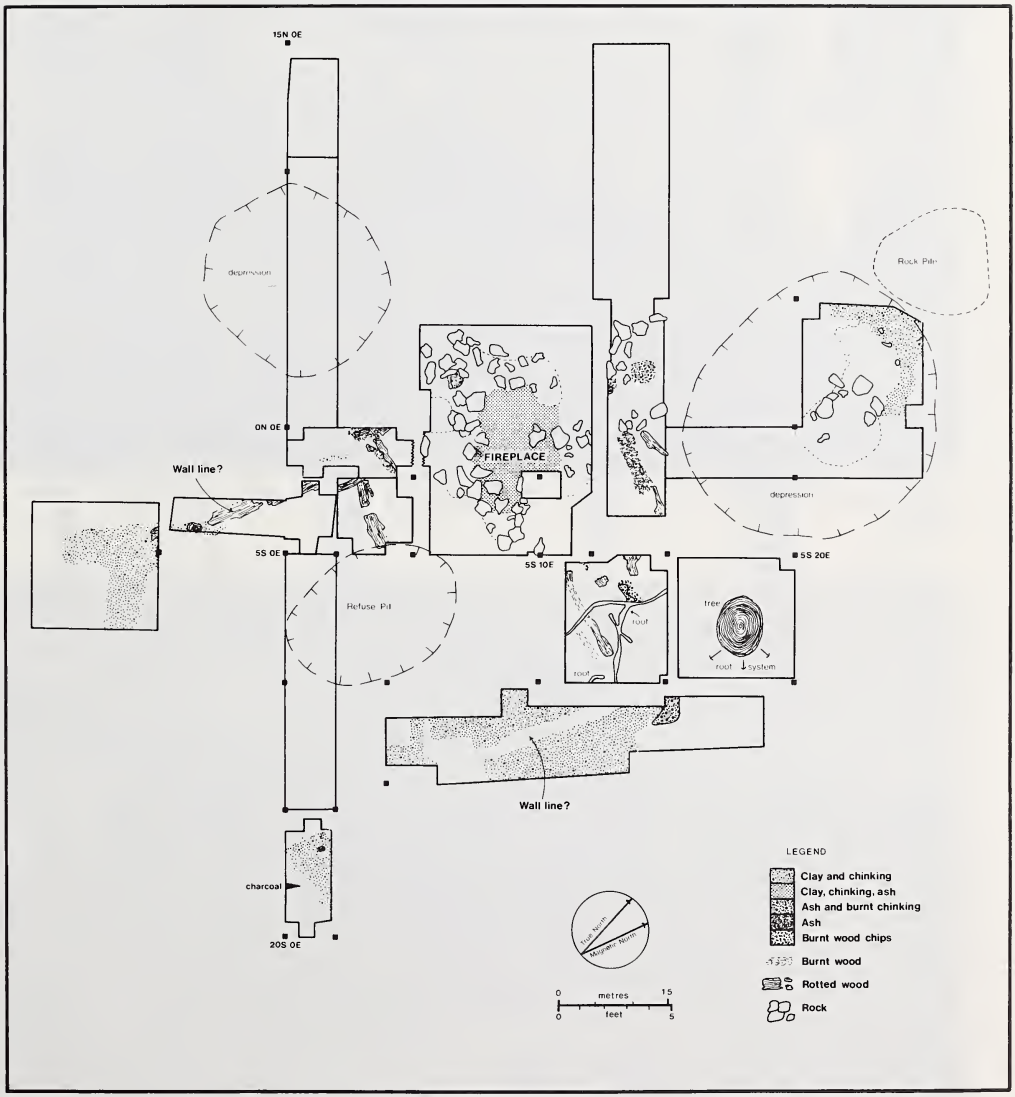


Figure 43. Cabin 2, plan view, showing wall lines, Fireplace (Feature 1), and Refuse Pit (Feature 2).

Figure 44a. Cabin 2. Timber representing north wall of cabin, from above.

Figure 44b. Cabin 2. Refuse Pit (Feature 2), to north.

Figure 45. Cabin 2. Artifacts related to Hunting and to Construction, Blacksmithing, and Crafts. a, round ball; b, lead shot; c, forged nail fragment; d, forged or cut iron nail; e, flat-head cut nail, Group 1; f, flat-head cut nail, Group 2; g, flat-head cut nail, Group 3; h, cut nail with reinforced head; i, cut nail fragment with pounded end; j, cut nail fragment; k, key.

Figure 46. Cabin 2. Artifacts related to Household, Business, and Personal Maintenance, to Transportation, and to Dress and Ornamentation. a, plain white glazed earthenware sherd; b, c, earthenware sherds with "flowed" blue transfer-printed pattern B 772; d, light green glass bottle fragment; e, window or mirror glass fragment; f, g, iron strapping; h, tin-plate box rim fragment; i, elongated, parallel-sided metal sheet; j, lead foil; k, pencil lead; l, hard rubber comb fragment; m, horseshoe nail, n, Type 1 shell button; o, small blue glass bead; p, small pink glass bead.

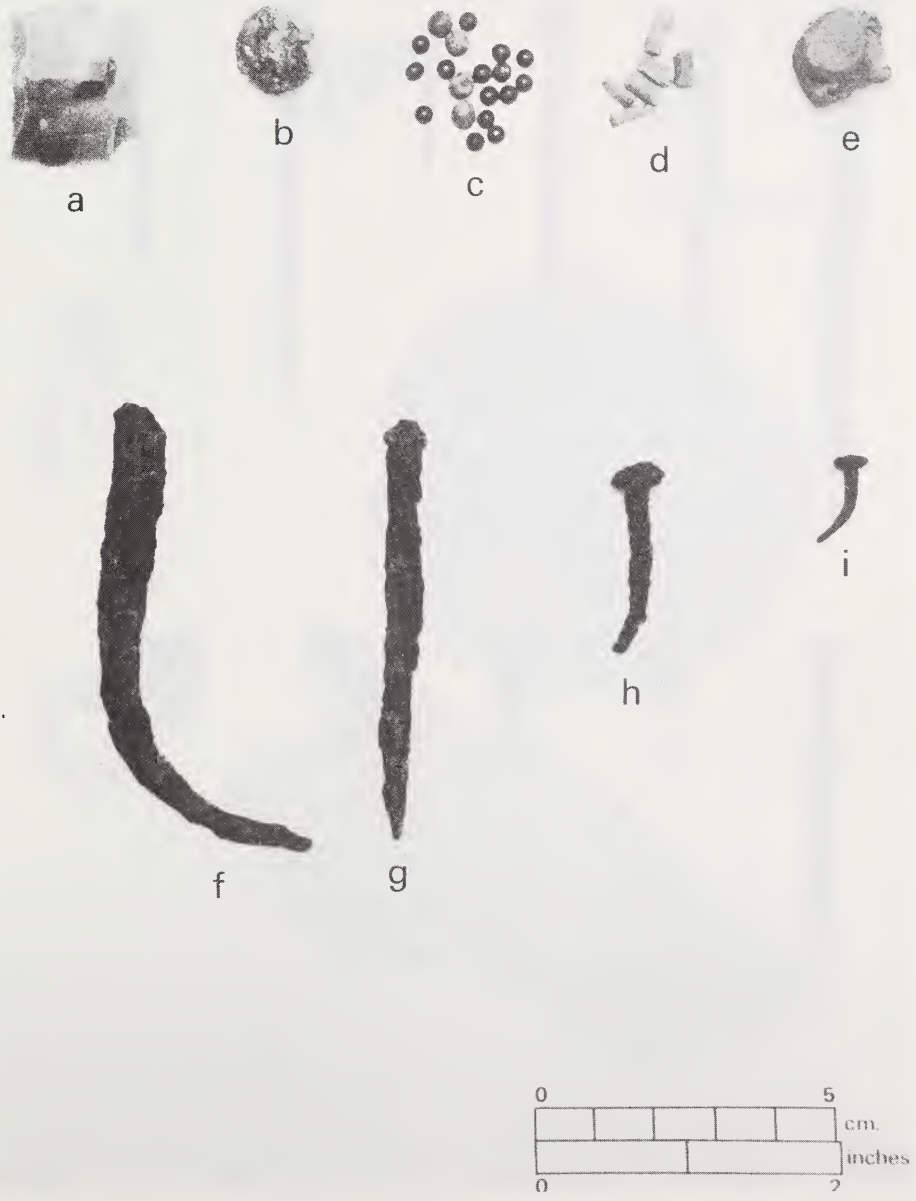


Figure 47. Cabin 2. Refuse Pit (Feature 2). Artifacts related to Hunting and to Construction, Blacksmithing, and Crafts. a, gunflint; b, round ball; c, lead shot; d, sprue fragments?; e, lead bullet; f, file tang; g, gable-head forged nail; h, i, forged or cut iron nails.

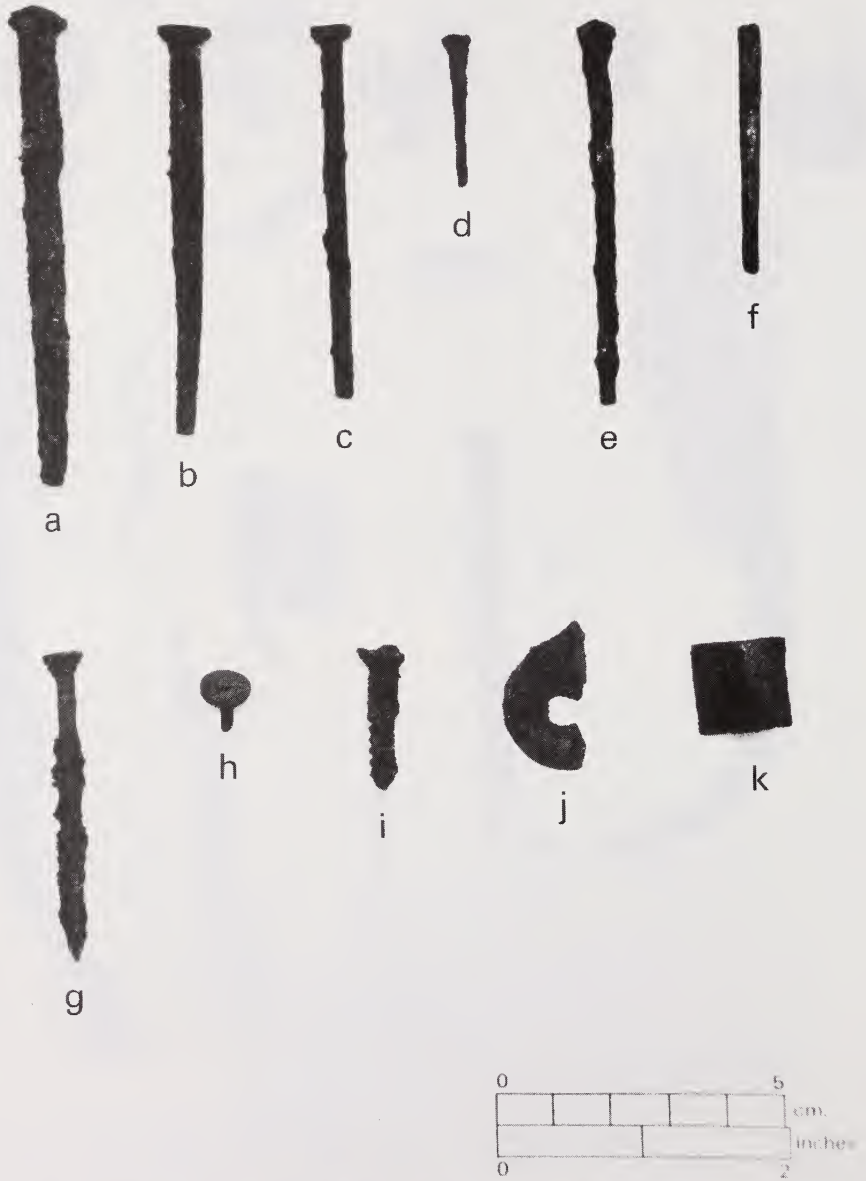


Figure 48. Cabin 2. Refuse Pit. Artifacts related to Construction, Blacksmithing, and Crafts. a, gable-head cut nail; b, flat-head cut nail, Group 1; c, d, flat-head cut nails, Group 2; e, flat-head cut nail, Group 3; f, cut nail fragment; g, wire (round) nail; h, washer and tack?; i, screw; j, washer or finial fragment; k, metal clasp or retainer.

Figure 49. Cabin 2. Refuse Pit. Artifacts related to Household, Business, and Personal Maintenance. a, plain white glazed earthenware sherd; b, Copeland earthenware sherd with blue "Grapevine" pattern; c, Copeland earthenware sherd with blue "Flower Vase"? pattern; d, Copeland earthenware sherd with blue "B 700"? pattern; e, Copeland earthenware with blue "Meander" pattern; f, green glass bottle fragment; g, mirror or window glass fragment (outlined); h, tin can lid; i, tin-plate or iron fragment; j, metal foil.

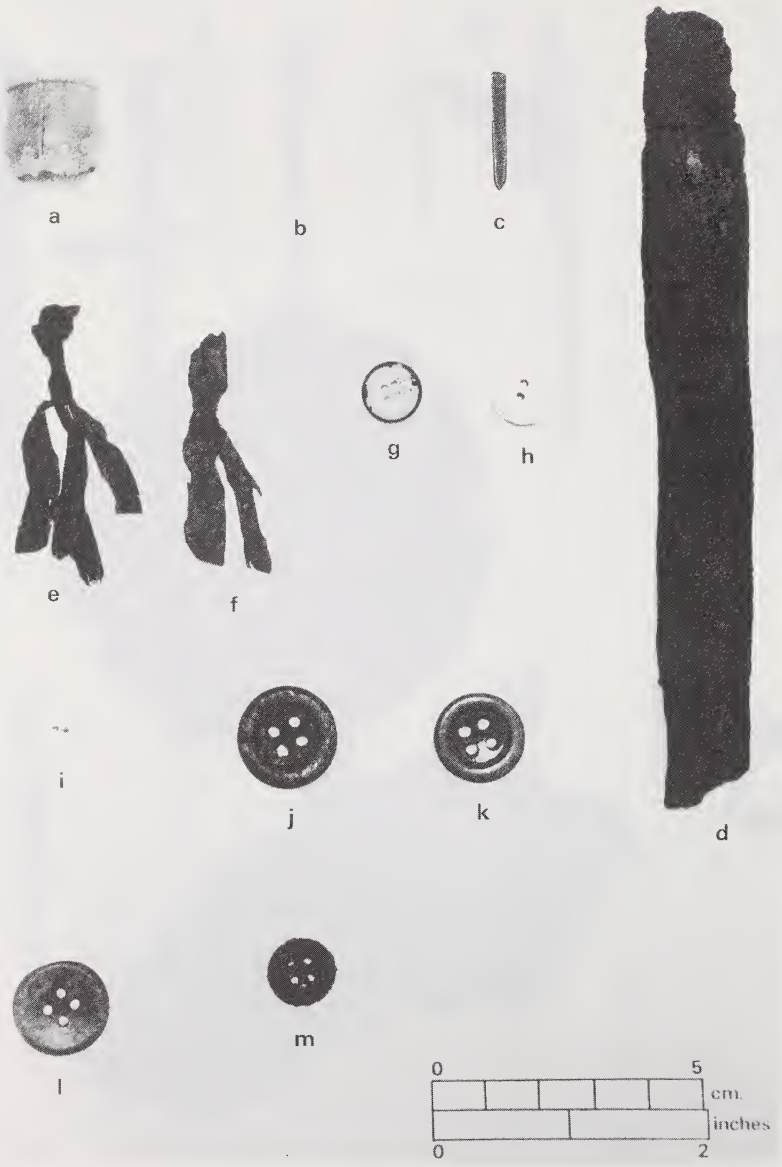


Figure 50. Cabin 2. Refuse Pit. Artifacts related to Household, Business, and Personal Maintenance, to Transportation, and to Dress and Ornamentation. a, bone shaving brush handle; b, knife inlay fragment?; c, hard rubber comb fragment; d, leather fragment; e, f, cloth fragments; g, Type 4, glass button; h, Type 5 shell button; i, Type 6 shell buttons; j, k, Type 1 bone buttons; l, Type 5 bone button; m, Type 4a "birdcage" button (small).

Figure 51. Cabin 2. Refuse Pit. Artifacts related to Dress and Ornamentation and to Native Industries. a, Cornaline d'Aleppo bead; b, small blue glass beads; c, small green glass bead; c, dark blue glass spherical bead; e, blue glass spherical bead fragment; f, robin's egg blue glass spherical bead; g, blue glass facetted bead fragment; h, green glass facetted bead fragment; i, clear glass facetted bead; j, ring stone; k, projectile point; l, projectile point fragment?

Figure 52. Buffalo Lake Métis site. Cabin 4, general view to east, looking along the north wall of the cabin. The Fireplace (Feature 2) is under the tree stump in the background.

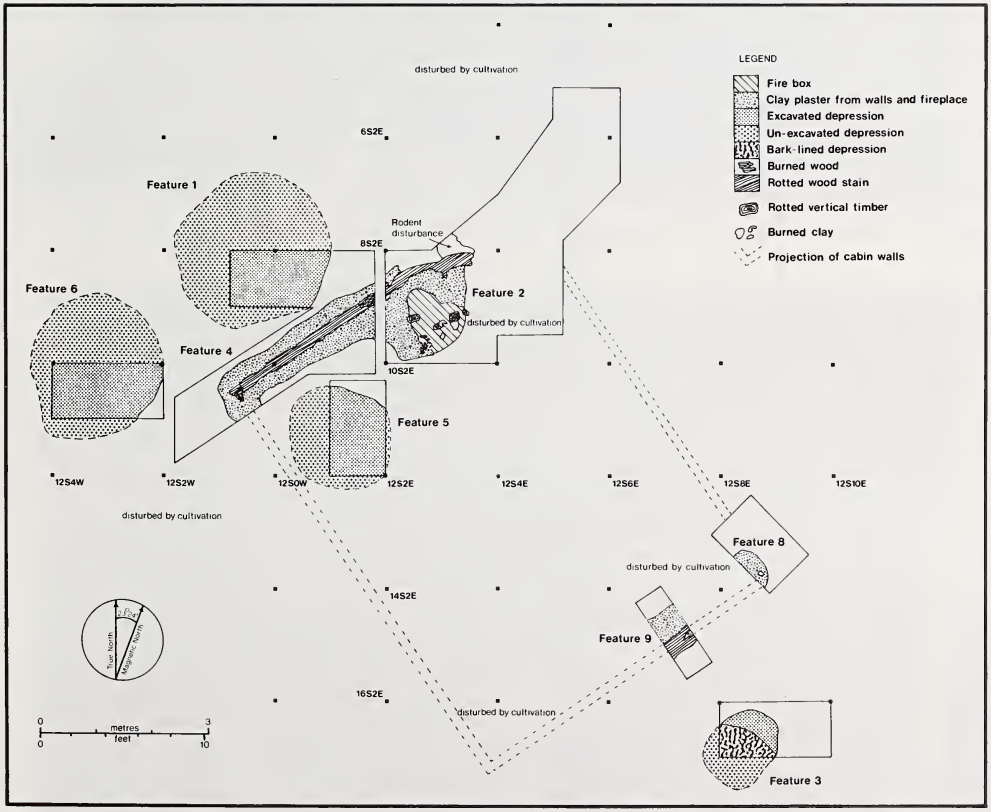


Figure 53. Cabin 4, plan view, showing wall lines and features.

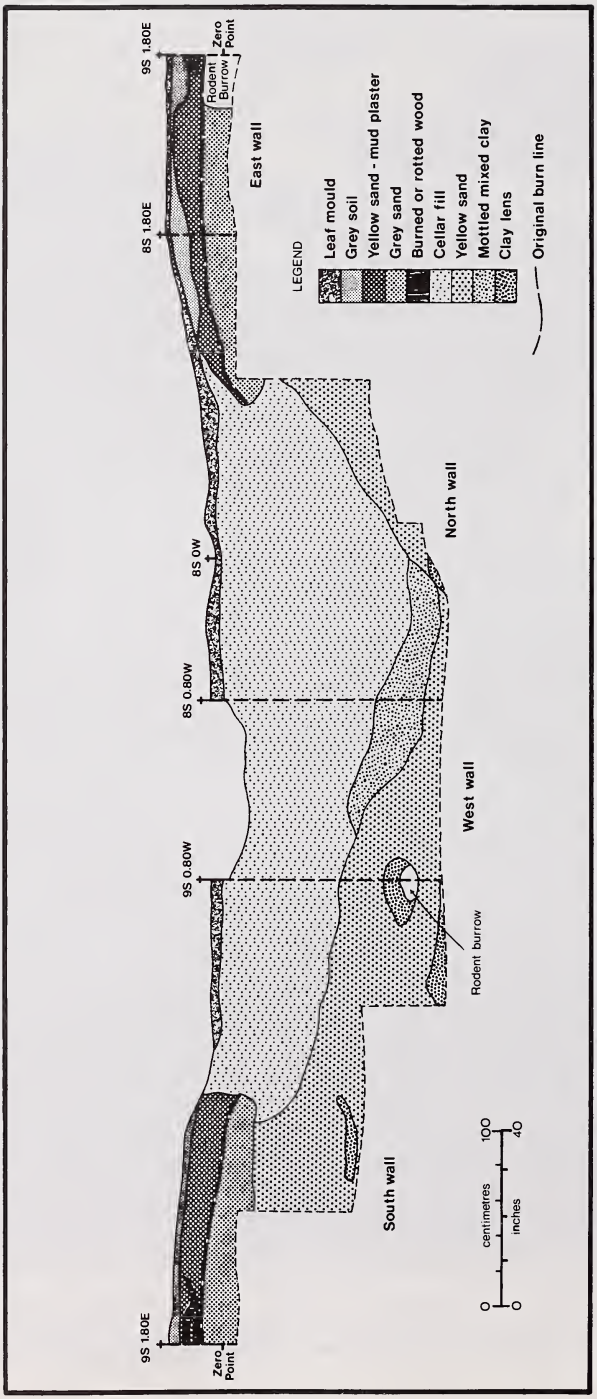


Figure 54. Cabin 4. Cellar and Refuse Pit (Feature 1), profile of three walls.

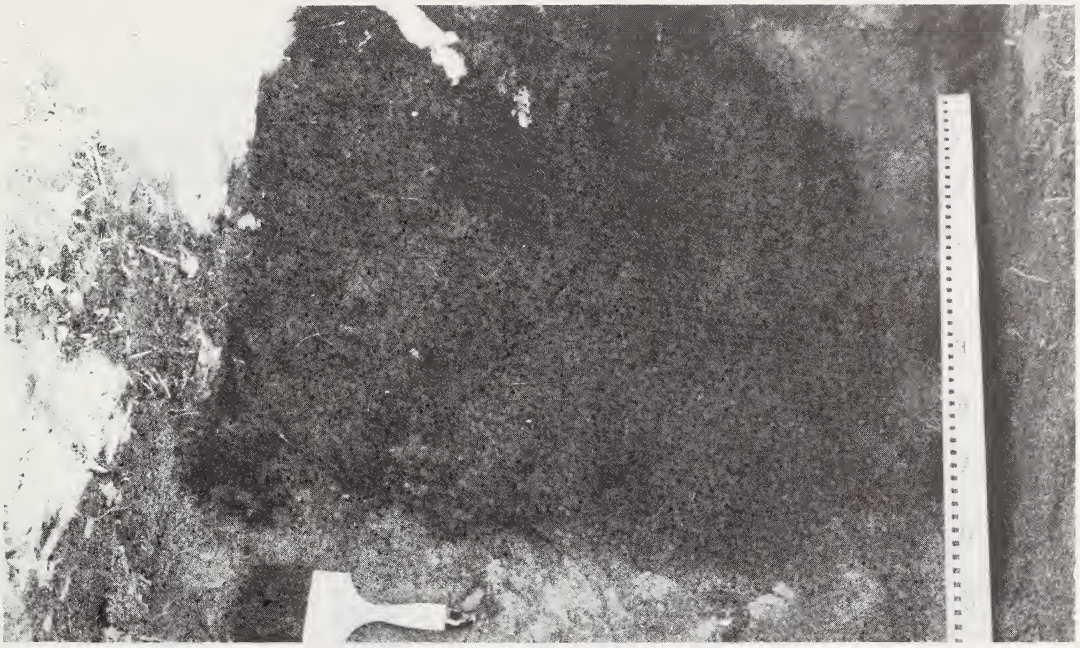


Figure 55a. Cabin 4. External Pit (Feature 3), showing bark lining in profile of west wall.

Figure 55b. Cabin 4. Detail of bark lining in plan view, to west and from above.

Figure 56. Cabin 4. Artifacts related to all Categories. a, cut nails; b, cut T-head brad; c, monochrome underglaze transfer-printed ware sherd, saucer or shallow bowl; d, small bowl sherd; e, transparent bottle glass fragment (outlined); f, facetted glass pendant; g, metal handle; h metal strap fragments; i, Type 1 shell button; j, Type 1 bone button; k, Type 5 metal button; l, hard rubber comb; m, clasp fragment.

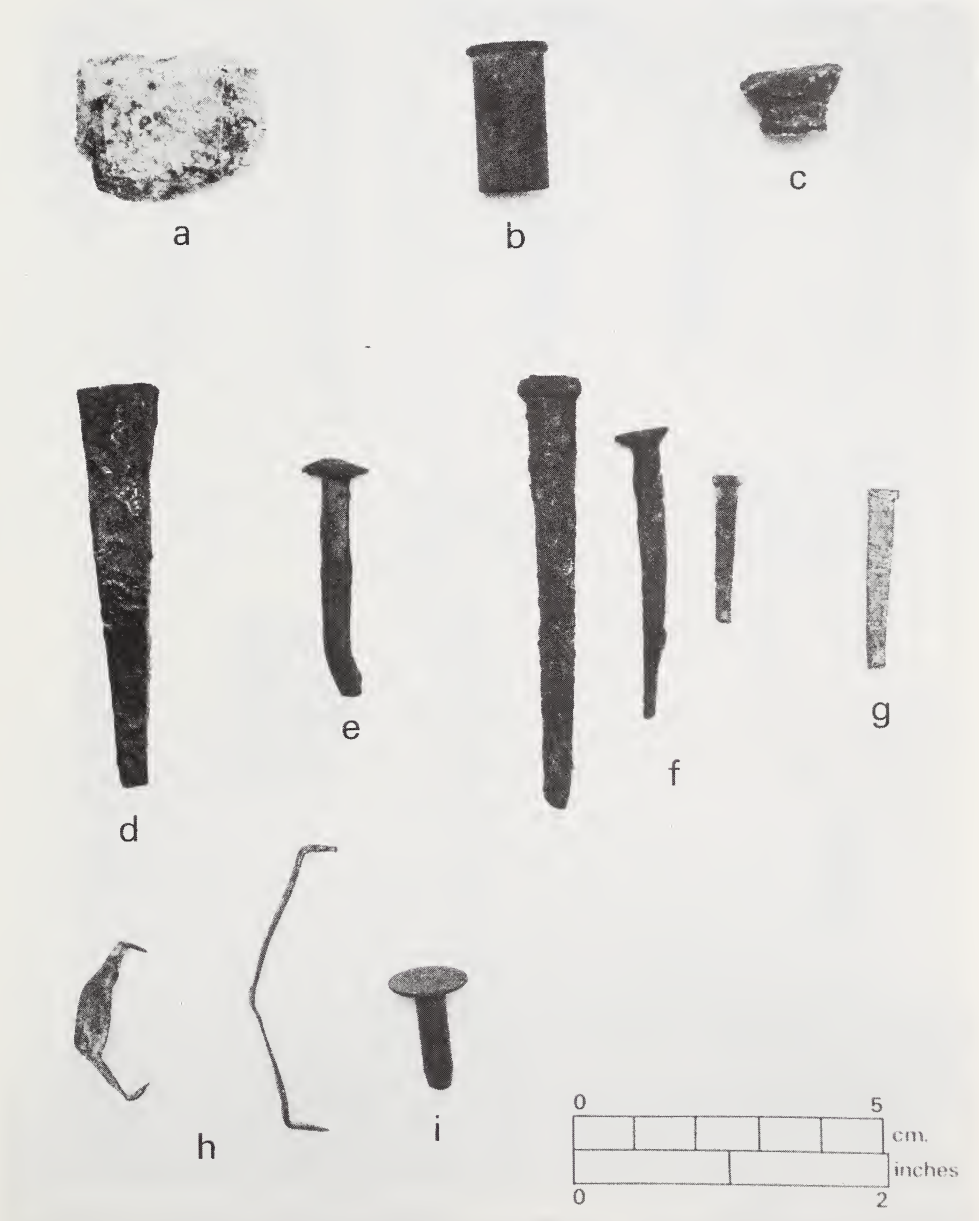


Figure 57. Cabin 4. Refuse Area. Artifacts related to Hunting and to Construction, Blacksmithing, and Crafts. a, gunflint; b, rimfire cartridge case; c, lead bullet; d, file tang; e, rose-head forged nail; f, flat-head cut nails; g, cut sprig; h, staples; i, rivet.

Figure 58. Cabin 4. Refuse Area. Artifacts related to Household, Businesss, and Personal Maintenance. a, monochrome underglaze transfer-printed ware, bowl sherds; b, bowl sherds; c, cup sherds; d, light green transparent glass bottle fragment; e, transparent sunburst amethyst glass bottle fragment; f, small patent medicine bottle fragment?; g, wine or beer bottle fragment; h, tumbler fragments; i, lamp chimney fragment.

Figure 59. Cabin 4. Refuse Area. Artifacts related to Household, Business, and Personal Maintenance, to Transportation, to Dress and Ornamentation, to Recreation and Smoking, and to Native Industries. a, b, metal strapping; c, iron container fragment; d, fork; e, horseshoe nails; f, leather heel fragment; g, Type 5a glass buttons; h, smoking pipe fragment.

Figure 60a. Buffalo Lake Métis site. Cabin 5. The cabin is in the wooded area to the south of Cabin 4, which is in the foreground.

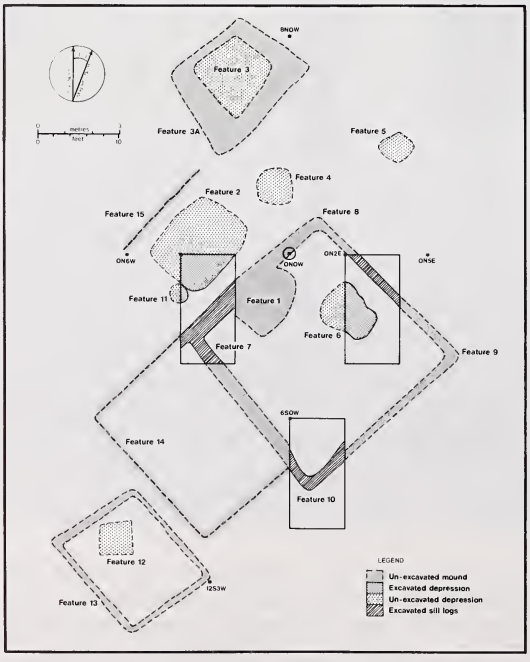


Figure 60b. Cabin 5. Plan view, showing excavations, wall lines, and features, plotted largely from surface indications.

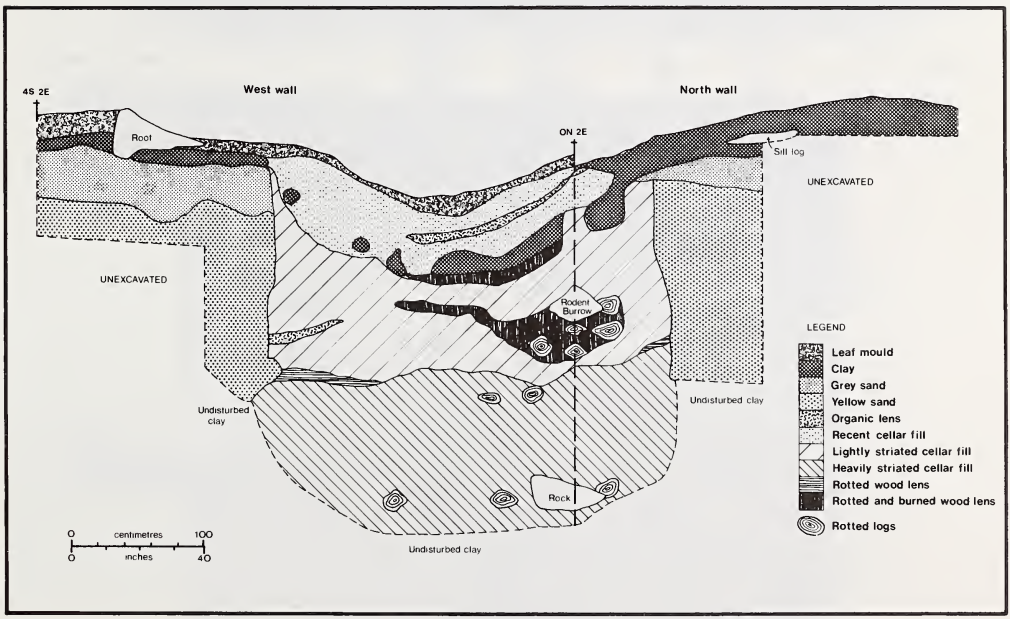


Figure 61. Cabin 5. Large Depression (Feature 6), profile of west and north walls.

Figure 62a. Cabin 5. Interior Pit (Feature 6), profile of west wall.

Figure 62b. Cabin 5. Faint indications of wall line near the south corner of cabin. To southwest.

Figure 63. Cabin 5. Artifacts related to Hunting and to Construction, Blacksmithing, and Crafts. a, trigger; b, percussion caps; c, percussion cap box lid; d, lead shot; e, rimfire cartridge case; f, centrefire cartridges from cellar; g, axe head; h, half-round file fragment; i, possible tool handle fragments; j, forged iron nail shank; k, machine-cut iron nail; l, cut sprig; m, cut tack; n, wire nail fragment; o staple fragment; p, heavy barrel hoop fragment (not to included scale).

Figure 64. Cabin 5. Artifacts related to Household, Business, and Personal Maintenance. Ceramics. a, monochrome underglaze transfer-printed ware sherd, plate; b, plate sherd?; c, d, undetermined vessel sherds; e, polychrome underglaze sponge-stamped ware, saucer sherd; f, saucer sherd; g, cup sherd; h, undetermined vessel sherd; i, hard paste earthenware or stoneware, possible cup sherds; j, possible teapot sherd; k, soft-paste earthenware, undetermined vessel sherd.

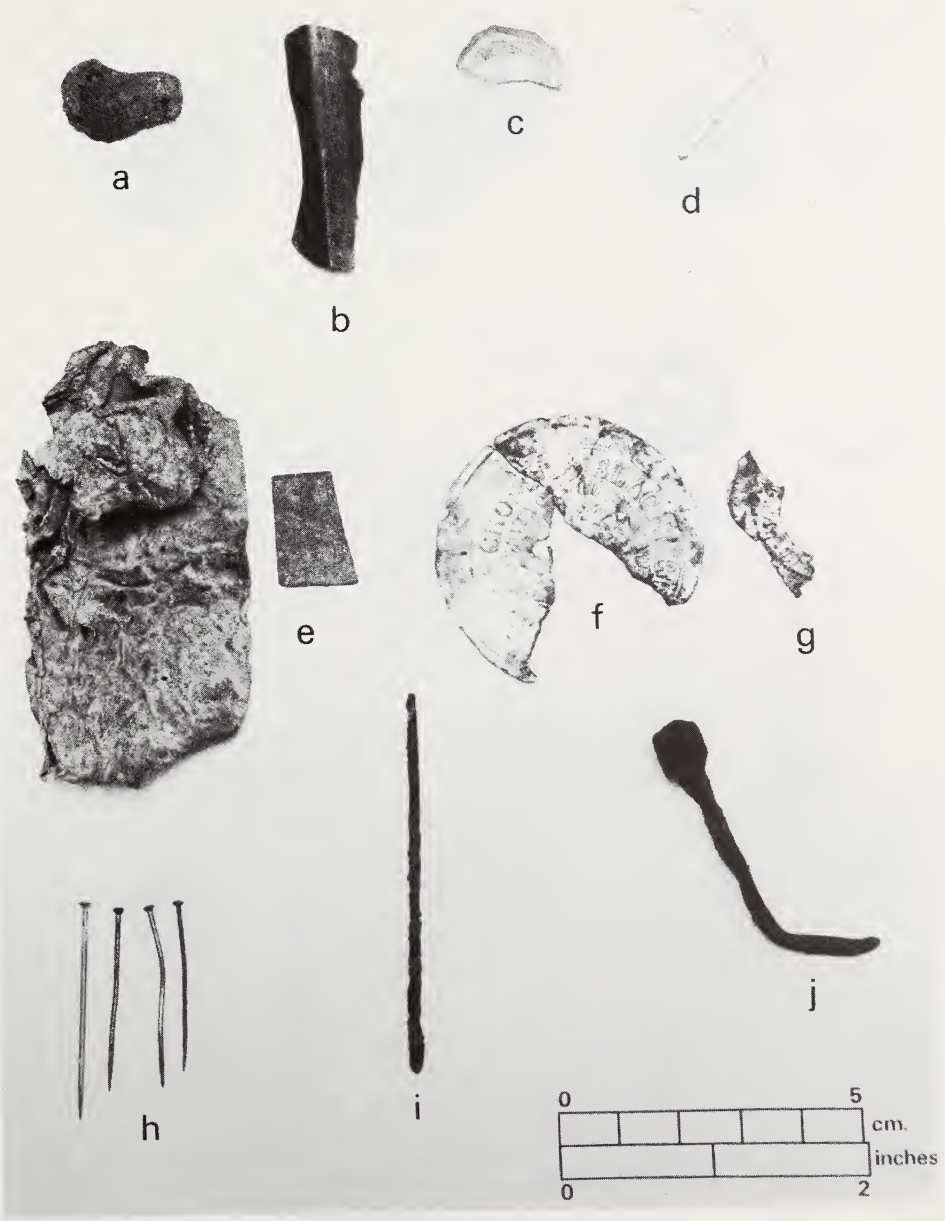


Figure 65. Cabin 5. Artifacts related to Household, Business, and Personal Maintenance and to Transportation. a, clear bottle glass fragment; b, amber bottle glass fragment; c, pale green bottle glass fragment; d, mirror glass; e, lead foil; f, g, food container seals; h, straight pins; i, sewing needle; j, horseshoe nail.

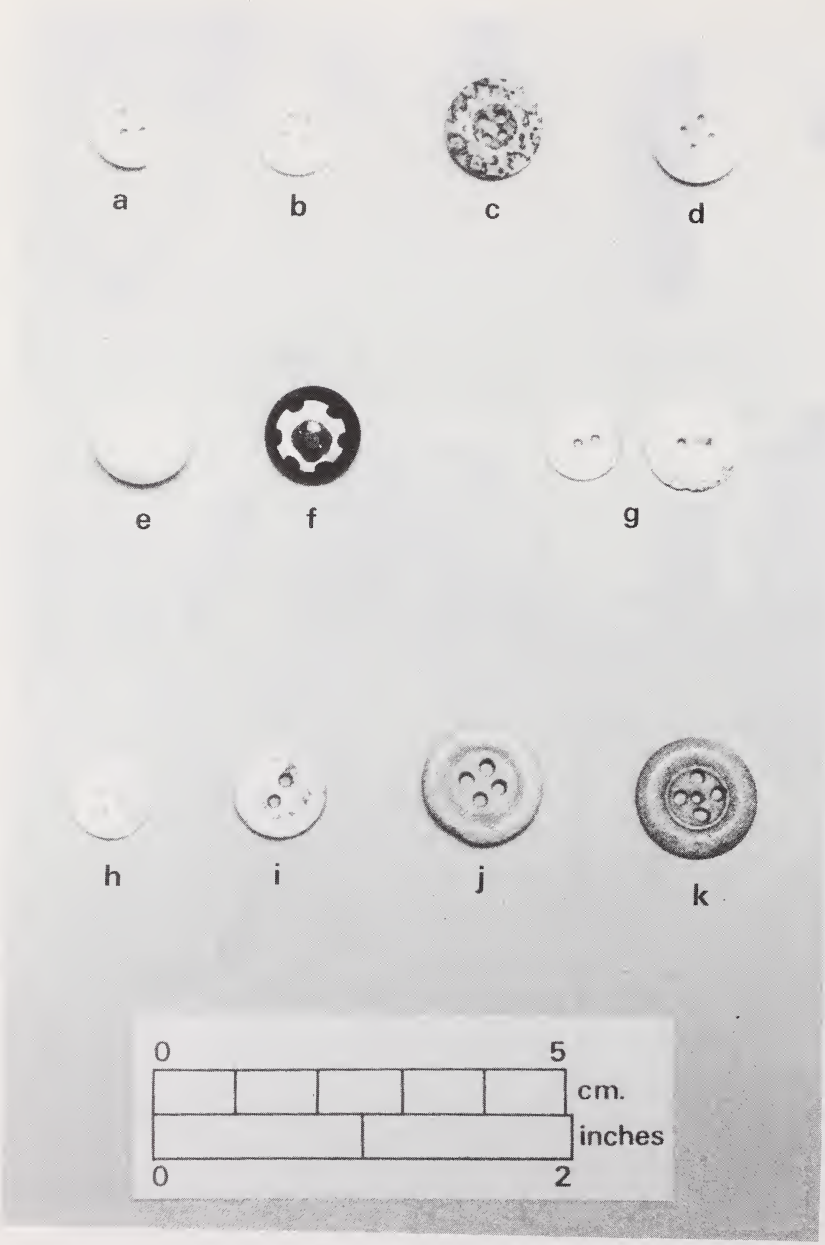


Figure 66. Cabin 5. Artifacts related to Dress and Ornamentation. Buttons. a, Type 3, glass button fragment; b, Type 5a glass button; c, Type 5b glass button; d, Type 7 glass button; e, Type 8, plain white glass button; f, Type 8, inlaid polychrome glass button; g, Type 2 shell buttons; h, Type 3 shell button; i, Type 5 shell button; j, Type 3 bone button; k, Type 4 bone button.

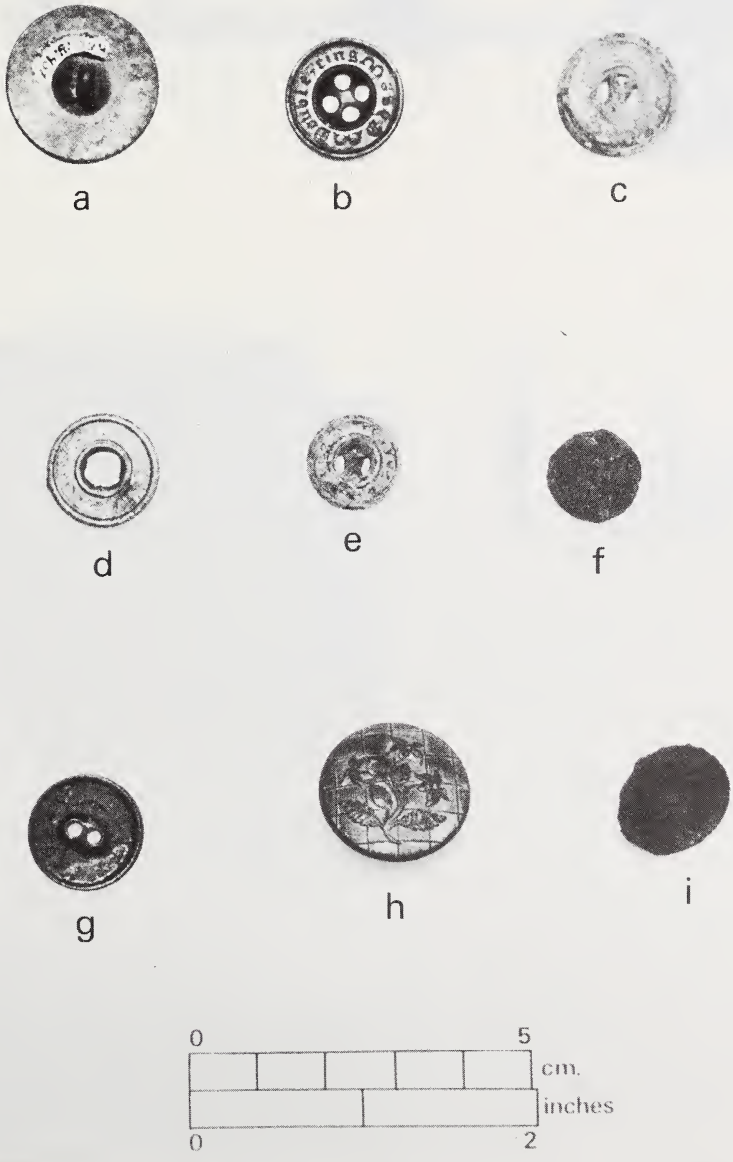


Figure 67. Cabin 5. Artifacts related to Dress and Ornamentation. Buttons. a, Type 2 metal button; b, Type 4a metal button; c, Type 5b metal button; d, Type 5c metal button; e, Type 5d metal button; f, Type 8a metal button; g, Type 9 metal button; h, Type 10 metal button; i, miscellaneous button back.

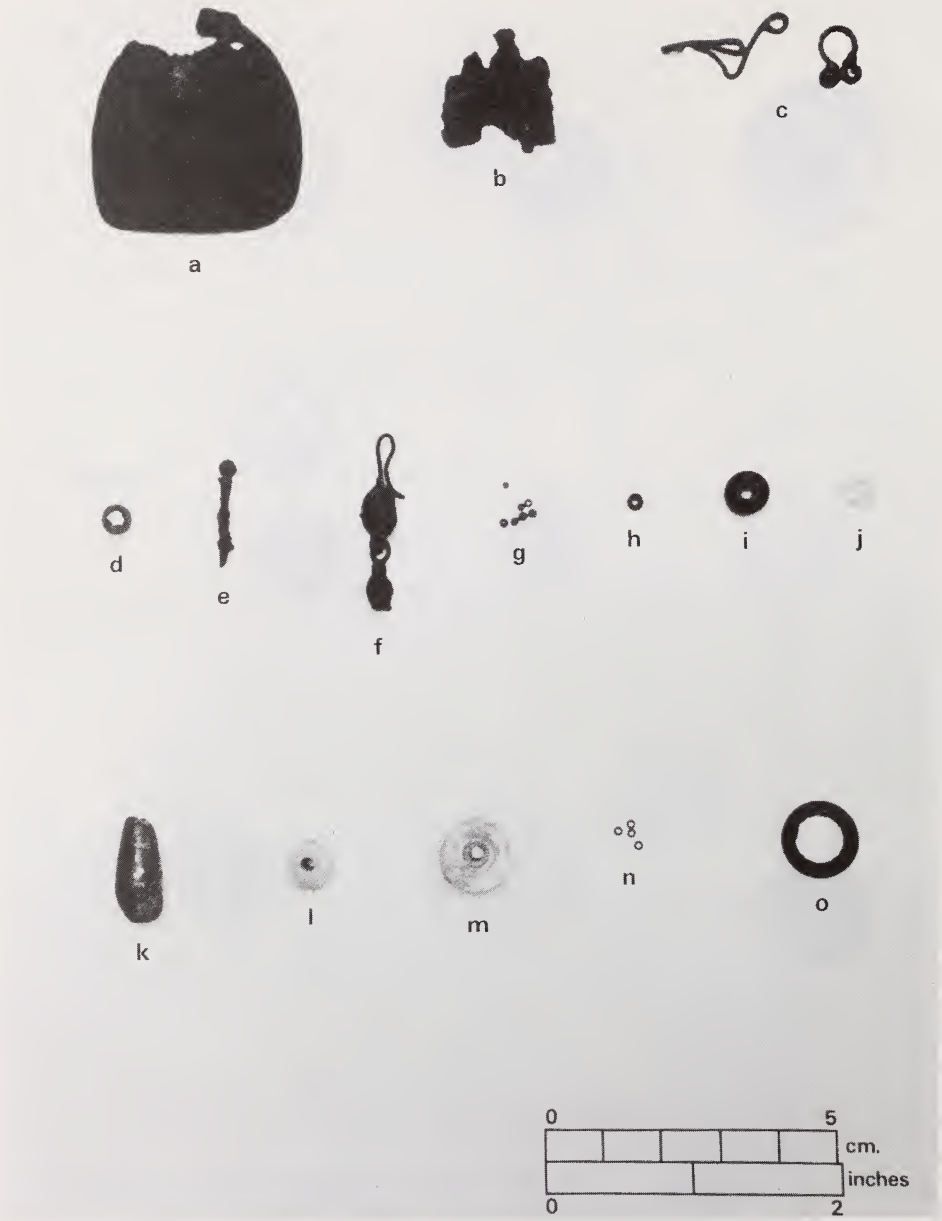
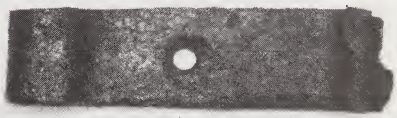


Figure 68. Cabin 5. Artifacts related to Dress and Ornamentation and Miscellaneous Unidentified Objects. a, leather heel; b leather fragment; c, hook-and-eye clothing fastener; d, shoelace eye; e, hat pin fragment; f, earring; g, drawn tubular "seed" beads; h, "intermediate" bead; i, "pony" bead; j, hexagonal bead; k, l, wound glass "pony" beads; m, pressed glass bead; n, metal beads; o, plastic ring.

a

b



c

Figure 69. Cabins 6 to 12. Artifacts related to Hunting, to Construction, Blacksmithing, and Crafts, and to Household, Business, and Personal Maintenance. a, gun barrel and breech (not to included scale); b, spade blade fragment; c, forged iron hinge fragment.

Figure 70. Cabins 6 to 12. Artifacts related to Household, Business, and Personal Maintenance. Ceramics. a, Copeland patterns, Cabin 6; b, Copeland patterns Cabin 7; c, Copeland patterns Cabin 9; d, Copeland patterns Cabin 9 and 10 (mixed sample); e, Copeland patterns Cabin 11; f, Copeland pattern Cabin 12.

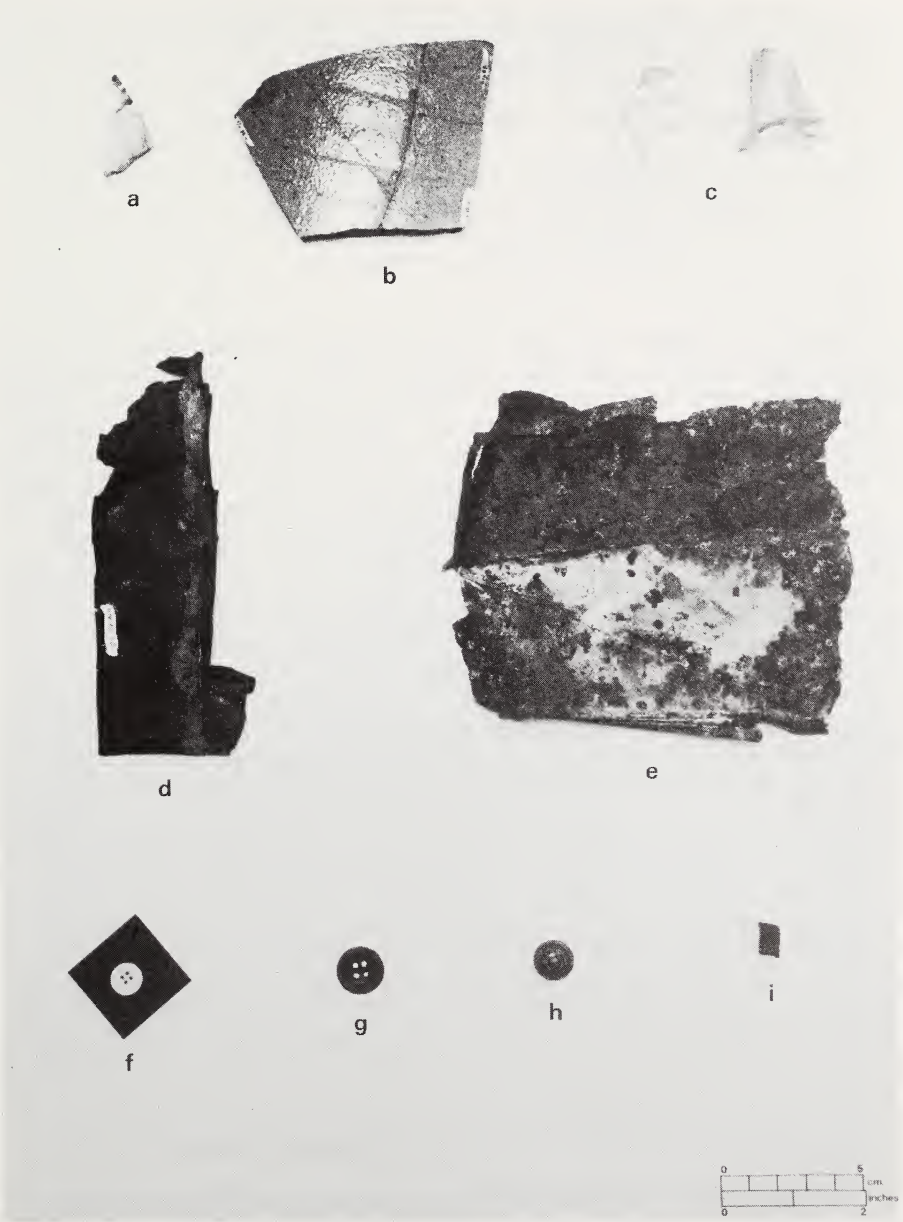


Figure 71. Cabins 6 to 12. Artifacts related to Household, Business, and Personal Maintenance and to Dress and Ornamentation. a, sponge-stamped ware sherd; b, stoneware sherd; c, Perry Davis Vegetable Pain Killer sherds; d, iron can fragment; e, rectangular ferrous metal container fragment; f, Type 3 glass button; g, Type 3 bone button; h, large wound cobalt-blue glass bead; i, brass ornament.

APPENDIX I

THE BUFFALO LAKE METIS SITE TEXTILES

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This descriptive study of 1870's textile fragments recovered from the Métis site at Buffalo Lake, Alberta, documents the attributes of the fabrics through the use of standard textile procedures and employs standard textile terminology. It also offers comments on facets of deterioration and biodegradation that are in evidence, since the understanding of the process of degradation, in itself, can aid greatly in the interpretation of material remains from a site.

Many researchers recognize that textiles found in archaeological excavations provide information on the types of fabrics in use at a particular time and in a particular location, as well as on the technology of cloth manufacture, its tools, and its techniques. Even so, there has been little emphasis on the recovery and analysis of textiles from western Canadian sites. The textiles that have been recovered in Alberta (for example, Baldwin 1978:43) have yet to be studied in detail. In other instances, it may be that unfamiliarity with the potential value of textile evidence has discouraged archaeologists from field collection of these poorly preserved organic materials. As a result, no data set on archaeological textile finds in Alberta exists, and sources for comparison of materials from one site to another are non-existent.

The following characterization of the small number of textile fragments from the Buffalo Lake Métis site is an initial step in making available textile data, and one hopes it will encourage the future inclusion of textile evidence in Alberta archaeological studies. As data are amassed, both on the textile artifacts themselves and the degree and type of biodegradation that has affected these artifacts, archaeological fabrics will come to offer another tool for interpretation of site history.

CHARACTERIZATION OF THE BUFFALO LAKE TEXTILE ARTIFACTS

The description and analysis of the fabrics from the Buffalo Lake Métis site are based upon the same concepts generally employed in textile studies. These include determination of staple and filament fibers, singles and plied yarns, fiber and yarn diameter, warp and weft elements, weave structure and thread counts, and the presence of selvage edges. The ease with which these characteristics can be documented for archaeological textiles depends on the degree of degradation on the fibers and yarns.

Cotton is a cellulose staple fiber which shows regular twists under low magnification; under higher magnification, the cotton fiber is seen to be composed of cuticle, primary wall, secondary wall, and lumen. Bast fibers include linen, jute, and hemp. They are derived from the stems and leaves of plants, and have a higher lignin content than does cotton. Wool is a protein fiber which is high in keratin; it is composed of cuticle, cortex, and medulla. Under magnification, the cuticle is seen to be formed of overlapping scales; these are important in the characterization of the wool fiber. Silk is a filament formed from the solidification of fluid excreted from the silkworm and a few other invertebrates. Under magnification, raw silk appears as two cylindrical structureless threads and is triangular in cross-section. Along with observations made of physical properties, fiber identification generally is based upon chemical and "burn" tests. These are of less use for small archaeological textiles due to the destructive nature of the testing.

Fibers of short length are twisted together (spun) to make a continuous yarn; singles, single-ply and 1-ply yarn are synonyms for this yarn structure. A combined yarn is composed of two or more spun yarns but not twisted together. If two or more single yarns are twisted together the process is called plying and the number of components determines whether it is 2-ply, 3-ply, etc. The direction of the twist is called S or Z, depending on whether the spiral of the spun element conforms to the slant of the central portion of the letter S or the letter Z. The angle of twist refers to the angle that the slant of the twist makes with the vertical axis of the yarn (Emery 1966:11). Tightness of twist is the number of twists per lineal measurment.

A single yarn refers to the simplest usable unit; thus, it is either a yarn composed of short staple fibers with a sufficient twist to hold it together, or it is a yarn composed of several filaments generally held together with some amount of twist. Staple fibers are short fibers that are measured in inches or less, compared to filiments which are long fibers that can be measured in yards or even kilometers. Since the silk filament is too fine to be used alone, the term single, in reference to silk threads, usually denotes a group of three to ten pairs of silk filaments, whether twisted together or simply combined (Emery 1966:8).

Measurement of yarn diameter is easy for single yarns but becomes more difficult with plied yarns, especially when they are very loosely twisted. It is even more difficult when the yarns in a fabric are being measured, since original characteristics may be hidden or distorted so that even the same yarn used in the same fabric will not provide the same measurements. Even so, such approximate measurements are a necessary part of the full description and comparison of fabric samples (Emery 1966:10-11).

The characterization of the structural makeup of elements of fabric construction and the interworking of these elements to produce fabric is based, by most North American researchers, upon the descriptive classification scheme and terminology published by Emery (1966). Woven fabrics have at least two sets of elements: (1) the warp yarns which run longitudinally on a threaded loom during fabric manufacture, and (2) the weft yarns which cross and interwork with the warp elements at more or less right angles. In a woven fabric, warp and weft threads can be

distinguished with certainty only when the selvage, that finished edge on a woven piece of fabric where the weft reverses direction, is present. Non-woven fabrics such as knits, twined work, rope, or cordage do not have selvage edges as defined here.

In a plain weave fabric, each weft unit passes alternately over and under successive warp units. All warps that lie above one passage of weft lie below the next, above the third, below the fourth, etc. Therefore, both sides of a plain weave fabric appear structurally identical. If the warp and weft yarns are equally spaced and approximately equal in size, the plain weave is said to be "balanced." The thread count refers to the number of warp and weft yarns present in a given linear unit of measurement. For example, if there are 30 warp yarns and 30 weft yarns per centimeter, the count is said to be "square." If warp and weft differ in diameter, even a square count will result in unequal spaces between elements and the weave will not be balanced. Thread count is not used, as such, for non-woven textiles.

A float is any portion of a warp or weft element that extends over two or more units of the opposite set on either side of the fabric. Float weaves are distinguished by differences in the basic system of the organization of the floats (Emery 1966:92). Twill weaves have progressive successions of floats in diagonal alignment; satin weaves have a progression of floats but do not show diagonal alignment. Twills are called "even" if they have the diagonal allignment of floats remaining consistent throughout and the numerically designated order of interlacing is maintained both by warp and weft throughout; front and back of the even twill fabric is similar. Uneven twills are interlaced so that no element passes over the same number of elements that it passes under; therefore, the front and back of the uneven twill fabric is structurally dissimilar. Satin weave is also dissimilar on front and back, but differs from an uneven twill in that the diagonal alignment of the floats is intermittent.

Degradation of fibers and fabrics can be either by mechanical damage, such as insect attack, abrasion, tension breaks, cuts and punctures, or by chemical damage, such as by enzymes secreted by microorganisms, acids, oxidizing agents, light, and heat. Various chemical tests are available to establish specific types of damage (Martin 1968). Matthews (1936:554) discusses particular observations that pertain to cotton, while Trottman (1970:105) considers the detection of damage to silk. Among the microscopic observations that indicate fiber degradation are the presence of fungal mycelia, loss of scales on wool fibers, and the rupturing of silk fibers so that individual fibrils project in little tufts from the fiber surface.

It is these concepts that have been utilized in the study of the Buffalo Lake Métis site textile artifacts.

MATERIALS AND METHODS

The very small size and the fragility of the textile artifacts have determined the manner in which they were analyzed. Since they range in size from smaller than 1 cm x 1 cm to a maximum of 32.5 cm x 1.9 cm, only minute specimens were taken from the artifact edge for microscopic

examination. All study was conducted using magnification, from low power through 500x; no chemical testing or burn tests were attempted due to the small size of the artifacts and the amount of debris attached to the fibers and lodged in the spaces between yarns.

All artifacts were first photographed on graph paper. Those textile fragments that were very small and had been collected and stored in soil matrix were photographed in this state, in the plastic petri dish in which they have been stored. In these cases, the textile itself is not visible in the photograph.

The textile fragments, whether in reasonably "clean" form or encrusted with organic sediment, were studied under low magnification to determine whether fabric structure was visible and if warp and weft threads could be distinguished from each other. If this was possible, warp and weft yarns were removed for study. For each accessioned artifact, recognizing that some accession numbers represent a number of small textile fragments rather than a single fragment, a decision was made as to whether the fragment would be washed. The decision took into consideration whether or not washing would disturb other potentially useful information and whether washing was needed to make fiber and fabric characteristics more visible for purposes of identification. Artifacts were only washed in those instances where the size and strength were considered sufficient. The question of whether organic archaeological artifacts should be washed and stored in a clean condition or whether adhering soil should be considered as a portion of the information available for artifact/microenvironmental humification studies is not being addressed in the present report.

Larger specimens were encased in netting before washing; this was unnecessary for the smaller, more square-shaped specimens. In all cases, where the "artifact" consisted of several fragments, some were left unwashed. Most artifacts were merely rinsed gently, first with tap water and then with distilled water, and dried flat on mylar film. Several pieces would not "wet out" without the addition of detergent; later analysis showed these textiles to be made of wool. The dried textile fragments were measured and then stored individually in cotton muslin-lined plastic petri dishes.

All meassurements and sketches were made after washing since the unwashed fragments were curled, rolled, and virtually impossible to measure beforehand. Thread counts were done with the aid of a dissecting microscope; fiber and yarn diameter measurements were made using the micrometer on a Leitz light microscope. Due to the small size of the textile fragment artifacts, single measurements have been used in the table rather than averaging a series of measurements. It must be stressed, therefore, that variation in relative humidity can affect measurment consistency and that yarn counts can vary in a fabric due to inconsistencies in the weaving process.

Unwashed fabric fragments were not measured, although fibers and yarns from unwashed specimens were sampled in some cases. Slides were made of fibers, warp and weft yarns, and small (2 mm x 2 mm or less) fabric specimens were taken from the edge of the artifact. No stains were added. The fibers, yarns, and fabrics were first studied in a water

mount, then allowed to dry, and the corners of the glass coverslip were tacked down with clear nail polish.

The many examples of fungal activity in relation to the fabric specimens were noted. No attempts were made to culture the microorganisms for positive identification. Although this could be done, too many years of "undocumented" handling of the artifacts has occurred to permit meaningful results.

RESULTS AND DISCUSSION

A summary of the fiber, yarn, and fabric characteristics of textile artifacts recovered from Cabin 2 and Cabin 3 of the Buffalo Lake Métis site is presented in Table 1 (page 340). Textile artifacts recovered from Cabin 5 are not included in the table. The reason for this is explained below.

Cabin 2, Refuse Pit

The two textile specimens located in the refuse pit in Cabin 2, H73.140.34 and H73.140.35, are made of silk and show identical yarn and fabric structure. Warp and weft yarns can be positively identified due to the presence of selvage edges on one edge. Before washing these two artifacts, distinct fold lines were noted; care was taken to see that these were not totally obliterated in washing and drying.

The fold lines indicate that the one-inch-wide fabric strip, ribbon, or seam binding was folded twice so as to be a 4-layered 1/4" wide fabric strip. It was folded on the length-wise grain, that is, in the direction of the warp yarns. The fabric was knotted after it was folded. The knots that remain are of particular interest, since the knots are the means of holding the fabric in the thick, four-layered narrow strip. That each of the two specimens contains these knots leads one to suggest that these fragments originally came from one textile object that was placed in the refuse pile. Since only one selvage can be located, it cannot be definitely stated whether the 1" fabric strip is a ribbon or tape or actually a fabric strip ripped an inch from a selvage edge.

The warp yarns are 2-ply brown (at least at present) yarn made up of 10 to 12 silk fibers, 5 to 6 fibers making up each singles yarn. This silk warp yarn may be equivalent to the yarns today called "organzin." Organzin is a silk yarn, manufactured for use as warp, which is made up of two or more threads of silk that have been lightly twisted together (Trottman 1979:102; Matthews 1936:179).

The weft yarns are green and of larger diameter. They appear to be single ply. While one could speculate that the weft is of "tram" (a common silk weft yarn that unites two or more singles but is very loosely spun), this cannot be the case if the weft yarn is only single ply. Further investigation could demonstrate whether the weft is what is called "thrown silk" or "grege," two terms that are applied when two or more filaments of raw silk are reeled together and given a slight twist.

The fabrics are plain, unbalanced weaves with 65-68 threads per cm in the warp and 34 threads per cm in the weft. This evidence could aid future researchers in determining whether these two fabric artifacts represent a commercial type of narrow tape or braid that was available for use at Buffalo Lake.

Cabin 3, Feature 2

The eight textile fragments recovered from the large interior cellar (Feature 2) in Cabin 3 are characterized in Table 1, page 340.

The fiber identification, yarn structure, and fabric structure indicate that H75.101.412, H75.101.595, H75.100.600 and H76.89.26, H76.89.146, H76.89.247, and H76.89.263 are, again, a narrow silk fabric, tape, or ribbon. These seven fragments have both 2-ply warp and 1-ply weft. The warp is made of two singles yarns, each of which has about 6 silk filaments; the 1-ply weft is a heavier yarn made of about 16 silk filaments. The interlacing of warp and weft create a plain, unbalanced weave.

Selvage edges are visible. In fact, H75.101.412 clearly shows two selvage edges. This is extremely important, for it indicates that this specimen, and quite possibly all of these 2-ply warp/1-ply weft silk fragments, are derived from narrow woven tape and not a wider fabric that has been torn into strips.

The weft yarns of H74.101.600 are definitely green in color, more intensely so than is the case with some of the other specimens. For example, fibers from H75.101.412 appear brown but are slightly greenish at the edges. It remains to be seen whether this character is of signficance.

In contrast to the artifacts discussed so far, H76.89.263 is not silk, wool, or cotton. It appears to be made of bast fiber. The degraded nature of the specimen makes it unlikely that the plant genus can be identified in the future. The artifact appears to be a remnant of rope or cordage, and may include several different yarn types. No selvage is visible; in fact the lay of the fibers suggests that it is not woven, but merely plyed. This is the structural arrangement that would be expected for rope, cordage, or twine.

Additional study of H76,89.263 is recommended. It would be of interest to understand aspects of the preservation of a textile artifact from a plant-derived source that has a higher lignin content that cotton. One expects that few bast fiber textile artifacts have been recovered from Alberta sites.

Cabin 3, Feature 3, Small Interior Cellar

The three textile specimens collected from Feature 3 in Cabin 3 are characterized in Table 1, page 340. Fabrics H75.101.132a, .132b, and .266 appear to be similar, since each exhibits warp and weft of silk, a 2-ply warp, a 1-ply weft, and yarn diameters that are similar. Whereas the fabrics from Cabin 2 suggest the presence of a blue or green weft,

these fabrics show both warp and weft to be a golden brown color. This may be the result of different site soil conditions. Testing of the fabric for the presence of blue dye could determine whether the original color was brown, since one wonders whether both warp and weft of all these silk fabrics were not originally blue or blue-green.

It is common for archaeological textiles to show little evidence of dyes and to appear brown or black. Spectroscopic and chromotographic techniques, however, are a means to verify the presence of dye, unless the dye is one of the rare types that decompose in a way that leaves no evidence. Blue dyes from the nineteenth century are generally based on indigotin, which comes from the two plant sources woad and indigo. It is not possible to chemically determine from which of the two sources a blue dye is derived, since indigotin is chemically identical from either source.

Dyeing can be carried out either before spinning, after the yarn is spun, or after the material is woven. Sometimes, by studying fibers in cross-section, it is possible to distinguish fibers from fabric-dyed material from those of fiber or yarn-dyed material. This is because the fiber core may be lighter in color than the outer edges. Some broken fibers from the blue colored silks appeared to show a lighter core, but due to the small size of the textile artifacts it was decided not to make slides specifically of fiber cross-sections. More research would need to be conducted to determine if the lighter core is evidence that the light-weight silk fabric was dyed after being woven rather than in the fiber or yarn stage of manufacture.

The two knots tied in the narrow strips of fabric in H75.101.132b are similar to the knotting of the textiles found in the refuse pit of Cabin 2. Fold lines and the presence of a selvage edge on H75.101.132a suggest the same narrow fabric folded to make a 1/4", 4 layer fabric strip.

By contrast, H75.101.267 is a wool fabric. The fibers are staple rather than filament. Though no characteristic scales are present on the fibers, this is not surprising for such a highly degraded specimen. A fiber diameter of 25 microns, compared to the 16 micron diameter of the silk fibers in the specimens already discussed, is typical of medium wool fibers. No selvage is present, so warp and weft are not distinguishable from each other. However, both elements are 1-ply and S-spun. The even twill weave has approximately 14 yarns per cm for both warp and weft and thus is a balanced weave.

Cabin 5, Feature 6, Interior of Cabin

The textile specimens accessioned as H82.78.313a, H82.78.313b, H82.78.314, and H82.78.786 are more complex than the previously discussed textile artifacts. The presence of concretions, probable fabric impressions, and probable composites of different fabric types contributed to the decision to refrain from altering these artifacts in any way.

The four specimens are each made up of numerous small fragments rather than one or two pieces. Observations conducted on minute sections taken from the edges of several textile fragments included in H82.78.313a

indicated blue warp and weft, yet the variation in fiber diameter made it diffcult to characterize the plain woven textile as being made of silk or wool. Intermixed with the blue fibers were translucent to tan-colored cotton fibers.

H82.78.313b is composed of at least two separate fabrics and two of these are adhering tightly together. Yarn counts are not presently possible because the conformation of the fabric "concretion" is not flat. One suspects that there are study techniques used by paleobotanists that could facilitate the analysis of composite textile artifacts of this sort. It can be determined that one of these fabrics is plain weave; however, it cannot be separated from the other fabric upon which it rests without fracturing of the fibers. This prevents even the removal of single yarns for completion of fiber identification and yarn analysis. The fabric underneath has a "woolly" appearance under low magnification, has a definite blue color, and has a fiber diameter of 20 microns which could indicate a fine wool.

H82.78.314 consists primarily of four small pieces of fabric. One of these was soaked in tap water for three hours to soften it so that adhering debris could be mechanically removed. This plain weave fabric has a preponderance of tan-colored fibers, showing no evidence of blue or green color. However, additional slide preparations from a different section showed small quantities of 16 micron-wide blue fibers, suggesting silk, and 24 micron-wide fibers, suggesting a medium wool. No scales were visible on any fibers.

Between the time of cleaning the fabric specimen, mounting a minute section on a slide in tap water as a "water-mounted" slide, and making observations some time later, fungal mycelia developed and grew in the spaces between yarns. One can suggest contamination of the sample from handling or from the use of tap water instead of distilled water. Nonetheless, because this fungal genus definitely differs from genera observed on other slide preparations made for this study, one is led to suggest that viable spores remain from the soil on textile fragments collected from Feature 6 of Cabin 5.

SUMMARY

Microscopic examination of textile fragments found in Cabin 2, Cabin 3 Feature 2, Cabin 3 Feature 3, and Cabin 5 Feature 6 of the 1870's Buffalo Lake Métis site has been conducted in order to characterize these artifacts. Presence or absence of selvage edges, type of weave, thread count, ply, yarn diameter, fiber identification, fiber diameter, and fabric color were considered. Observations are presented in Table 1 (page 340) and discussed in the text. Aspects that require further study are noted. The purpose of the study has been to record technical aspects of textiles located in this Alberta archaeological site in hopes that this small project will encourage further archaeological textile analyses in Alberta.

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TABLE 1

Location	Acc. Number	Selvage	Weave	Count	Warp Ply	Warp Di.	Weft Ply	Weft Di.	Warp Id.	Warp Col	Warp Di.	Weft Id	Weft Col	Weft Diam
Cabin 2	H73.140.34	PR	P	68x34	2	124.8	1	374.4	S	B	-	S	G	-
	H73.140.35	PR(?)	P	65x34	-	-	-	-	-	-	16.6	-	-	16.6
Cabin 3 Feature 3	H75.101.132a	PR	P	64x36	2	129.8	1	259.7	S	B	13.2	S	B	-
	H75.101.132b	PR(?)	P	62x36	2	-	1	-	S	-	16.6	-	-	-
	H75.101.266	PR	P	66x34	2	181.2	1	-	-	VB	16.6	-	-	-
	H75.101.267	AB	TW	14x14	1	624.0	1	624.0	W	VB	25.1	W	VB	25.1
Cabin 3 Feature 2	H75.101.412	PR	P	56x30	1(?)	291.2	1	291.2	S	G	16.6	S	G	16.8
	H75.101.595	PR	P	60x40	2	228	1	?	S	-	-	S	G	-
	H75.101.600	PR	P	60x40	2	-	1	-	S	-	-	S	G	12-16
	H76.89.26	PR	P	64x36	(?)	?	1	208.0	S	B	-	S	B	-
	H76.89.146	PR	P	62x44	2	166.4	1	187.2	S	B	-	S	B	-
	H76.89.247	PR	P	62x40	2	-	1	-	S	B	-	S	B	-
	H76.89.263	NA	NA	NA	-	-	-	-	Unidentified bast fibers					

Key:

PR = selvage present

AB = selvage absent

NA = not applicable

P = plain weave

TW = twill weave

S = silk

W = wool

G = green

B = brown

YB = yellow-brown

Fabric count = warp threads x weft threads per centimeter

- = observation not made

? = cannot be determined with certainty

Note: diameters are measured in microns

APPENDIX II

FAUNAL REMAINS AT THE BUFFALO LAKE METIS SITE

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This appendix discusses the significance of the large ungulate faunal remains recovered from the excavations at the Buffalo Lake Métis site (FdPe 1). Over 5,000 such bone fragments were recovered. Some basic data concerning these remains are presented in Table 1 (page 351), including (by column): (1) the number of large ungulate bone fragments representing each bone element recovered from each cabin; (2) the minimum number of each element recovered (MNE), this being the sum of the left and right elements recovered for paired bones (eg. the leg bones) and the number of elements for unpaired bones (eg. vertebrae); (3) the minimum number of individual animals represented for each bone (MNI), as determined from the MNE counts; and (4) the standardized MNI value, which ranks the frequency of each bone element as a percentage of the most common element and so makes it possible readily to compare element frequencies from one cabin to another regardless of the actual number of animals represented (Binford 1978:20). With a single exception, all material that could be identified to species was Bison bison (buffalo). The single exception, a rib fragment from Cabin 3, has been identified as Alces alces (moose). The remains included under "unidentified" represent bone fragments of a size indicating that they might have been from large ungulates, but where a positive identification could not be made.

Before beginning the discussion of the remains, it should be noted that the samples from some of the cabins are so small that they are difficult to interpret on their own (especially Cabin 1, with only 21 diagnostic fragments, and Cabin 2 with only 36 diagnostic fragments). The absence of a particular element may mean little, and similarly the presence of a single fragment of a particular element may be given exaggerated importance. For Cabins 5 and 6 (Cabin 6 actually comprising the surface-collected material bulldozed from one, or possibly 2, cabins), a sufficiently large number of individual animals was recovered in the remains to allow some differentiation in the frequencies of the various bone elements. For Cabins 1 to 4, however, the standard MNI has been reduced to little more than a presence/absence indicator due to the recovery of remains from only a single animal in each case. Variation in frequency is very difficult to interpret in such circumstances. These problems will be discussed in the following analysis, and an attempt will be made to resolve them.

Rib fragments are common in all six cabins, hence their relative frequency as measured by the standardized MNI value should be reliable. In this regard, Cabins 5 and 6 have a low rib frequency and clearly stand out from Cabins 1 to 4, which have a very high frequency. The thoracic vertebrae are also reasonably well represented in the fragment totals of all six cabins, and once again the low relative frequency of these in Cabins 5 and 6, as opposed to the other four cabins, is noteworthy. Scapulae are another element that may be employed in these terms. Here the low frequency in Cabin 6 constrasts with the high frequency in the other five cabins. The final element frequency that may be employed is that for the tibiae, with Cabins 4 and 6 having a lower frequency than the other cabins. The absence of tibia remains in Cabin 4 may be a reflection of the small sample and may not be reliable. What this evidence seems to indicate is that Cabins 1 to 4 are basically similar in the patterns of their remains and may be considered as representing a single pattern. Cabins 5 and 6 are different from this pattern, and they also differ from each other. Closer examination of the Cabin 6 remains shows a pattern essentially dominated by two elements, the humerus and radius. Overall, three basic patterns are observed in the faunal remains. In view of the similarity of the remains from Cabins 1 to 4, the problem of poor sample size for these four cabins might be overcome by pooling their material and treating it as a single unit. This has been done in Table 2 (page 354).

The broad patterning in the placement of butchering marks on bones also lends support to the perceived similarity of the butchering in Cabins 1 to 3 (as will be explained in a later portion of this appendix, Cabin 4 could not be included in this aspect of the analysis). Only two elements had enough cut marks preserved to allow a valid comparison, the ribs and the thoracic vertebrae. In the remains from all three cabins, the main rib cut-mark concentration was in the midshaft area. A second major concentration was present in the proximal portion of the ribs from Cabins 1 and 3. Only Cabins 2 and 3 had cut marks preserved on the thoracic vertebrae. In both cabins the only concentration of cut marks was on the dorsal spine. As can best be defined from the remains, the grouping of Cabins 1 to 4 into a single pattern appears valid. Some details of the cut mark patterning will be examined later in this appendix.

BONE FREQUENCY, ETHNICITY, AND STATUS

Examination of the three Buffalo Lake Métis cabin groupings, with respect to the meat value of each element, as shown in Table 2 (page 354), shows that the elements with essentially no meat on them have a low frequency in all cabins (metapodials, carpals, tarsals, and phalanges). Aside from this, there is no meat value relationship that consistently holds for all cabins. Clearly meat value is not the sole factor in the observed frequencies. Historic evidence concerning the Buffalo Lake site documents that the community was complex in nature, with a variety of social and ethnic groups in residence. It is highly probable that some of the variation in bone element frequency evident in the remains is due

to variation in the ethnic origin and social position of the residents in the various cabins.

In an earlier work (Kooyman 1981:25-27, 49-51, 105-107), I discussed various lines of evidence suggestive of the meat preferences of the three main ethnic groups resident in the Parkland at the time the Buffalo Lake site was occupied: the Métis, Europeans, and Plains Indians. Indian preferences included the tongue (the mandible being the corresponding bone element), the hump ribs (the spinous processes of the thoracic vertebrae), the marrow bones (humerus, radius, and ulna, femur, tibia and metapodials), and the ribs. The back (thoracic and lumbar vertebrae) and brisket (sternebrae and distal ribs) were also valued by some groups. Métis preferences also included the tongue, hump, and brisket, and probably generally parallelled Indian preferences. European preferences included the short loin and tenderloin (lumbar vertebrae), the sirloin (sacrum and ilium of pelvis), the round and upper hindquarter (femur), the shoulder (humerus and anterior ribs), and the primal ribs (thoracic vertebrae and posterior ribs). Of these, the round and primal ribs were of variable importance, depending on locality. The short loin, tenderloin, and sirloin were generally ranked highest. Although there is much overlap in the bone elements indicative of each ethnic group's preferences, some use of bone frequency can be made in assessing ethnicity. High frequencies of the mandible, thoracic vertebrae, ribs, radius and ulna, tibia, metapodials, and sternebrae/distal ribs probably indicate Indian or Métis ethnicity (sternebrae preserve poorly archaeologically and cannot be used). High frequencies of the sacrum and pelvis would be good indicators of European ethnicity, with high frequencies of the lumbar vertebrae, humerus, and femur possibly being relevant. A particular problem with using the femur is that it is also the highest ranked bone based on meat value alone. It is essentially impossible to distinguish between high frequency due to meat value or European ethnicity.

A further complication when studying Métis material is that although the Métis are certainly a separate ethnic group (particularly those of French extraction -- see Sprenger 1972:15-25), they had their origin in the fusion of Indian and European lifestyles and can be expected to evidence aspects of both. Métis society probably generally ascribed to a European value system in the past (Kooyman 1981:197-198), though probably to a lesser degree among the hivernant hunters. In a previous analysis of faunal remains from the Métis sites, clear evidence was found to indicate that a European value system had influenced the remains at the settlement of Batoche. In contrast, at the Cypress Hills site (a hivernant site) Indian values were in evidence (Kooyman 1981:85-88, 105-108, 198-200). In studying the Buffalo Lake material, a complex pattern is to be expected.

It is worth noting here that there are in fact two different facets of the hivernant subsistence pattern. For some hivernant groups, the buffalo hunt provided the basis of subsistence throughout the year. The people who inhabited the Cypress Hills, mentioned above, were an example of such a group. Others relied on the hunt only during particular times of the year. As will be seen, it is probable that the Buffalo Lake people would be included in this category.

Table 3 (page 356) illustrates how the various Buffalo Lake cabins conform to the ideals of European and Indian/Métis ethnicity. The most obvious aspect to this table is that Cabins 1 to 4 show strong evidence for Indian/Métis ethnicity. It can be added that Cabin 3 also has a high incidence of the mandible (see Table 1, page 351), although based on only one fragment. All three provenience groupings demonstrate both European and Indian/Métis ethnic patterns, although the Cabin 6 humerus remains probably do not show a high enough incidence given the underestimation of the tabled humerus meat value (see Kooyman 1981:22). Similarly, the Cabins 1 to 4 pelvis remains are probably not sufficiently frequent to be indicative of European ethnicity. It was also noted that the frequency of distal rib ends might be a useful indicator of Indian/Métis ethnicity. The percentage of rib fragments from each cabin that have the distal end present are as follows: Cabin 1, 0%; Cabin 2, 11%; Cabin 3,7%; Cabin 4, 2%; Cabin 5, 8%; Cabin 6, 0% (Cabin 1 to 4 average is 5%). All these frequencies seem quite low, although Cabin 2 may have a sufficiently high frequency. It is, however, based on only a single fragment. The overall element representation pattern shows a combination of European and Indian/Métis food preferences, suggesting that all six cabins represent people of Métis ethnicity. At the same time, the remains from Cabins 1 to 4 are significantly different from the remains in Cabins 5 and 6. The remains from Cabins 1 to 4 are similar to what one might expect from hivernant Métis.

As already mentioned, an earlier study of Métis faunal remains revealed a distinct difference between faunal remains from the settlements of Batoche and Cypress Hills (Kooyman 1981). These were in part interpreted as being indicative of differences in social position or status, both terms here being used in their most general sense to denote perceived or ascribed ranks within a culture that need not necessarily be associated with any explicit or obvious symbols of this standing. In Table 2 (page 354), figures from Cabins B and E at the Cypress Hills site have been included as an example of the hivernant pattern focussed solely on the hunt for subsistence. The results from the analysis of the Batoche and Fisher houses at Batoche have been included as an example of the more Europeanized, entrepreneurial Métis (for a discussion of these cabin and house localities, see Kooyman 1981:75-79). There are a number of differences between the Batoche and Cypress Hills patterns. These are summarized in Table 4 (page 356), along with how these differences are reflected in the Buffalo Lake remains. Once again, the Buffalo Lake cabin groups each contain a mixture of both patterns. The Cabin 1 to 4 group is seen as more similar to the Batoche remains and Cabins 5 and 6 as more similar to the Cypress Hills remains.

One last aspect of relative element representation is worthy of examination concerning the ethnicity of the occupants of the various Buffalo Lake cabins. The standardized MNI values in Table 2 (page 354) allow one to define the major portion(s) of the animal carcass used in each cabin or cabin group; these probably representing butchering units of some type. These are as follows:

Cabins 1 to 4	(a) ribs (100), thoracic vertebrae (100), lumbar vertebrae (75), and scapula (100).
	(b) pelvis (50), femur (75), and tibia (75).
	(c) skull (50).
Cabin 5	(a) scapula (100) and humerus (60).
	(b) tibia (80).
Cabin 6	(a) radius (100) and humerus (50).
Cypress Hills	(a) ulna (100) and radius (60).
	(b) tibia (70).
Batoche	(a) pelvis (80) and femur (80).
	(b) lumbar vertebrae (60).
	(c) skull (60).

It has been suggested previously that a high representation of the skull is due to transportation and proximity to kill factors (Kooyman 1981:82), but the importance of the buffalo robe trade suggests that the skull may have also been brought to the site so that the brain could be extracted for use in hide tanning. In either case, the skull frequency has no bearing on the question of ethnicity. The high incidence of lumbar vertebrae, pelvis, and femur seen at Batoche, representative of more Europeanized Métis occupation, is clearly evident in the Buffalo Lake Cabins 1 to 4 grouping. An interesting aspect of this pattern is that it is only Cabin 3 that contains all three of these elements (see Table 1, page 351). It may be that it is Cabin 3 specifically that represents a more Europeanized Métis occupation.

A distinctive facet of the Cypress Hills pattern, representative of the hunt-oriented hivernant Métis, is a high incidence of the less meaty, middle leg portions (radius and ulna of the front leg, tibia of the rear). Presumably this is due to their value as marrow bones. The three Buffalo Lake cabin groupings demonstrate this pattern, in contrast to the Batoche material, suggesting that the inhabitants of the Buffalo Lake site were not members of the most Europeanized segment of Métis society.

As has already been noted one of the preferred European meat cuts, based on documentary evidence, was the shoulder, consisting of the humerus and anterior ribs. Although the difference is not great, there is an increased incidence of the humerus at Batoche relative to the Cypress Hills site (see Table 2, page 354), and it may be inferrred that Cabins 5 and 6 at Buffalo Lake also demonstrate this pattern. Of particular interest in this regard is that the Carriere complex at Batoche - not included in the Table 2 figures, but believed to be occupied by lower status hired employees of Batoche (Kooyman 1981:76-77;

Payment 1977:39) - has an even higher incidence of the humerus in its remains (standardized MNI of 66 -- Kooyman, unpublished data). The shoulder was not the most highly valued cut in European terms (at least the short loin, tenderloin, and sirloin were more highly valued), hence a high incidence of the humerus may be indicative of a more middle eschelon status within Métis society. Here it is also worthy of note that within the Cabin 1 to 4 groupings at Buffalo Lake, Cabin 3 was the only cabin to have humerus remains in it. Once again, then, it is possible that Cabin 3 should be included with Cabins 5 and 6 in a grouping somewhat removed in status from the hivernant-like pattern evidenced by Cabins 1, 2, and 4.

The high incidence of the scapula in Cabins 1 to 5 is a pattern unique to these cabins at Buffalo Lake. The remains are particularly frequent (in terms of number of fragments) in Cabins 3 and 5. In Cabins 3 and 5 this high incidence may be due in part to the scapula accompanying the humerus in a butchering unit, although this cannot be the sole explanation. Similarly, a butchering unit consisting of the scapula, ribs, and thoracic vertebrae might particularly explain its frequency in Cabins 1 to 4. A fuller explanation must await further work.

In summary, the element representation data indicate that Cabins 1, 2, and 4 resulted from occupation by lower status, possibly hunt-oriented, hivernant, Métis. The other three cabins were probably occupied by Métis from more of a middle eschelon of Métis society, although the evidence from Cabin 6 is not as good as for Cabins 3 and 5. It is unlikely that any of the cabins were occupied by Métis merchants that had been highly influenced by European values.

BUTCHERING PATTERNS, ETHNICITY, AND STATUS

Cut-mark location and bone fragmentation patterns have been shown to be good indicators of status and ethnicity (eg. Kooyman 1981, Otto 1975, Schulz 1979). As well as specific butchering practices in carcass segmentation and processing of the individual bones, in the present context this would include the use of saws and individual-sized cuts of meat as an indication of European ethnicity and higher status, the longitudinal splitting of the vertebral column as an indication of European ethnicity, and the presence of marrow extraction as an indication of Indian or Métis ethnicity (Kooyman 1981: 17-19, 31-53).

None of the Buffalo Lake cabins contained any sawn bone, individual cuts of meat, or longitudinally split vertebrae, and hence it is probable that they were not occupied by Europeans. The absence of sawn bone and evidence of individual meat cuts also suggests that the occupants of these cabins were not of high social status within Métis society, in contrast to those who occupied the Batoche and Fisher houses at Batoche (Kooyman 1981: 199-200). Bone fragments having long spiral fracture breaks indicative of marrow extraction were rare in the Buffalo Lake remains. Only four elements had a frequency of 35% or more long spiral fractures and hence might be postulated as having been split to extract marrow (Kooyman 1981:217): Cabin 4, radius (100%) and femur (100%); Cabin 5, mandible (33%) and tibia (60%); Cabin 6, mandible (100%) and tibia (33%). The Cabin 4 frequencies are each based on a single fragment, the

Cabin 5 mandible frequency on three fragments, and the Cabin 6 remains on only one (mandible) and three (tibia) fragments. These long spiral fracture incidences cannot be viewed as reliable. The tibia remains from Cabin 5 consisted of ten fragments, however, and can be reliably postulated as being evidence of marrow extraction. This is further evidence that the occupants of Cabin 5 were either Indian or Métis and that those in Cabins 1, 2, 3, 4 and 6 were almost certainly not Indian. The rarity of marrow extraction in the Cabin 5 remains also argues against the possibility of its occupants being Indian, while its presence may show the occupants were not high-status Métis (Kooyman 1981: 199-200).

It is beyond the scope of this analysis to discuss all the details of the butchering patterns for the Buffalo Lake cabins, but data on this scale for Cabins 1 to 3 can be found in Kooyman (1981:110-190). Instead, I will enumerate some of the major patterns observed and discuss how these might be relevant to questions of ethnicity. The archaeological basis for defining ethnicity relies largely on the Fort Walsh report (Cumbaa 1978) for a Euro-Canadian pattern and the Stott (Hamilton et al. 1980) and Hartell Creek (Murray et al. 1976) sites for an Indian pattern.

All the skull fragments appeared to have resulted from post-depositional breakage and hence no cultural inferences can be made concerning the butchering of the skull. The only point of interest concerning the mandible remains is the possibility that marrow was extracted from the horzontal ramus in Cabins 5 and 6, but as already mentioned this is based on too few fragments to be reliable. If this were the case, it would indicate that the occupants of these two cabins were not European. Since no cervical vertebrae were recovered, nothing can be said about butchering in this region of the animal.

The major aspect to butchering for the thoracic vertebrae was the removal of the spinous processes to remove the hump meat. Seventy-four percent of the thoracic vertebrae fragments from the six cabins were solely spine fragments. Indicative of this is that although a large number of cut marks were preserved on thoracic vertebrae fragments, only one cut mark was not located on the spinous process (for Cabins 4 to 6, done separately from the 1981 analysis of Cabins 1 to 3, no cut mark data was recorded for axial fragments. However, all thoracic vertebrae fragments recovered from Cabins 4 to 6 were spinous process fragments). The removal of the spinous process is a common pattern at Métis and Indian sites, but is in marked contrast to European sites and to an extent of Batoche (Kooyman 1981:100, 108-109, 116-122, 191-192). At the Northwest Mounted Police post of Fort Walsh, for example, only one-quarter to one-third of the thoracic vertebrae remains had had the spinous process damaged (Cumbaa 1978)

In butchering the lumbar vertebrae, the residents of Buffalo Lake clearly valued the meat of the transverse processes highly, as only Cabins 1 and 4 lacked such fragments (Cabin 1 had no lumbar vertebrae fragments at all). This focus appears to be common in all Métis sites (Kooyman 1981:122-123) but is not a feature of Euro-Canadian sites (1981:192). Although Indian sites do show removal of the transverse process, the substantial further fragmentation of the process evident in the remains from Cabins 2, 3, 5, and 6 illustrates a butchering pattern

that appears to be unique to the Métis (Kooyman 1981: 192). This is further evidence that the occupants of these four cabins were Métis.

Only three sacrum fragments were recovered at Buffalo Lake, one in Cabin 5 and two in Cabin 3. These fragments all evidenced removal of the transverse process, a procedure common to Métis and Indian butchering procedures (probably resulting from meat removal) but absent in Euro-Canadian butchering (Kooyman 1981:128, 130, 192).

A common aspect of rib processing in all six cabins was the segmentation of the rib shaft into a number of small- to moderate-sized fragments, a pattern common to Métis and Indian sites but apparently not Euro-Canadian sites (Kooyman 1981:130-136, 192). The most common means of removing the ribs from the thoracic vertebrae was by severing the bone just distal to the articulations with the thoracics, a pattern seen in the remains from all six cabins but one apparently uncommon in Euro-Canadian sites (1981:192). In addition, Cabin 3 showed evidence for occasional removal through the articulations, once again a pattern not common in European sites.

In contrast to the more common pattern of severance through the glenoid fossa of the scapula in removing the front leg in Métis butchering (Kooyman 1981:147-153), four of the six Cabin 5 scapula fragments that had portions of the fossa had the fossa intact. Although such a procedure is not unique to European butchering, it is the only procedure generally employed in European butchering and may lend some support to the contention that the residents of Cabin 5 were not hunt-oriented <u>hivernant</u> Métis. The processing of the scapula at Buffalo Lake varied considerably, but the large segments consisting of one-quarter to one-third of the element which typify European butchering (Kooyman 1981: 193) were not present.

Humerus remains were present only in Cabins 3, 5, and 6, but the Cabin 3 remains show the severance through the proximal end that is apparently common in Métis butchering but absent in Euro-Canadian (Kooyman 1981:158, 193). As with the scapula, this probably relates to removing the front leg from the carcass. Material from both the Cypress Hills and Batoche sites showed extensive fragmentation of the distal end of the humerus (1981:154-158), yet all distal end fragments from Cabin 6 (two of the three humerus fragments present) were complete. This may be viewed as indicative of some European influence in Cabin 6, particularly since five of the six distal ends present in the Cabin 5 remains are fragmentary.

The radius, carpal, and phalanx remains do not show any patterns useful for ethnic identification, and there are too few ulna and metacarpal remains to make any meaningful statements.

The Métis pattern of butchering the pelvis has a unique ethnic feature, this being the considerable subdivision of the ilium shaft between the hip joint (acetabulum) and the sacrum articulation (Kooyman 1981:193). Only Cabin 3 at Buffalo Lake showed this pattern, but this clearly defines its occupation as Métis.

There are too few femur and patella fragments to provide any useful data on ethnicity.

Aside from the evidence for marrow extraction previously discussed, the tibia remains offer little information about ethnicity. A single example of a small proximal end fragment from Cabin 3 appears to be a butchering unit that has no counterpart in Euro-Canadian sites (Kooyman 1981:184-185, 194).

No metatarsal remains were recovered at Buffalo Lake, this absence being reasonable evidence that the cabins were not occupied by Indians. The tarsal remains provide no insight on ethnicity.

The butchering pattern data provide considerable evidence that the residents of the six Buffalo Lake cabins here considered were not Europeans. The rarity of marrow extraction and the absence of metatarsal remains (and virtual absence of metacarpal remains) are reasonable grounds for rejecting suggestions of Indian ethnicity. Since the evidence for marrow extraction was good for the hunt-oriented hivernant occupation at the Cypress Hills site (Kooyman 1981:86), its virtual absence in all cabin remains suggests that none of the cabins were occupied by hunt-oriented hivernant Métis.

Based on lumbar vertebrae and pelvis remains, Cabins 2, 3, 5, and 6 were specifically identified as having Métis occupations. The absence of sawn bone and individual-sized cuts of meat was seen as an indication that the residents of the six cabins were not high status Métis. This was also suggested for Cabin 5, based on the presence of some marrow extraction. The general completeness of the humerus distal ends in the Cabin 6 remains was seen as confirming that its occupation probably was not the result of hunt-oriented hivernant Métis.

CONCLUSIONS

The faunal remains show that the six Buffalo Lake cabins considered in the analysis were occupied by people of Métis ethnicity. The residents of Cabins 1, 2, and 4 were lower status, but not hunt-oriented hivernant Métis. The other cabins were occupied by people from the middle class of Métis society.

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TABLE 1

FAUNAL REMAINS, BUFFALO LAKE METIS SITE

Element	Cabin 1				Cabin 2				Cabin 3			
Skull	0*	-	-	0	0	-	-	0	3	1	1	100
Mandible	0	-	-	0	0	-	-	0	1	1	1	100
Vertebrae:												
Cervical	0	-	-	0	0	-	-	0	0	-	-	0
Thoracic	1	1	1	100	7	3	1	100	22	6	1	100
Lumbar	0	-	-	0	2	1	1	100	11	2	1	100
Sacrum	0	-	-	0	0		-	0	2	1	1	100
Caudal	0	-	-	0	2	1	1	100	0	-	-	0
General	1	-	-	-	1	-		-	8	-	-	-
Sternebrae	0	-	-	0	0	-	-	0	1	1	1	100
Rib	13	2	1	100	9	2	1	100	106	5	1	100
Scapula	2	1	1	100	2	1	1	100	25	1	1	100
Humerus	0	-	-	0	0	-	-	0	2	1	1	100
Radius	0	-	-	0	0		-	0	0	-	-	0
Ulna	0	-	-	0	1	1	1	100	3	1	1	100
Carpals:												
Magnum	0	-	-	0	0	-	-	0	0	-	-	0
Cuniform	0	-	-	0	0	-	-	0	0	-	-	0
Scaphoid	0	-	-	0	1	1	1	100	0	-	-	0
Lunate	0	-	-	0	0		-	0	0	-	-	0
Unciform	0	-	-	0	0	-	-	0	0	-	-	0
Pisiform	0	-	-	0	0	-	-	0	1	1	1	100
Metacarpal	0	-	-	0	0	-	-	0	1	1	1	100
First Phalanges	0	-	-	0	0	-	-	0	1	1	1	100
Second Phalanges	0	-	-	0	0	-	-	0	2	2	1	100
Third Phalanges	0	-	-	0	0		-	0	0	-	-	0
Proximal Sesamoids	0	-	-	0	0		-	0	1	1	1	100

* See text page 341 for headings (identification) of columns.

Element	Cabin 1				Cabin 2				Cabin 3			
Distal Sesamoids	0	-	-	0	0	-	-	0	0	-	-	0
Pelvis	1	1	1	100	0	-	-	0	8	1	1	100
Femur	0	-	-	0	1	1	1	100	1	1	1	100
Patella	0	-	-	0	0	-	-	0	0	-	-	0
Tibia	1	1	1	100	3	1	1	100	5	2	1	100
Tarsals:												
Astragalus	0	-	-	0	0	-	-	0	1	1	1	100
Calcaneum	0	-	-	0	0	-	-	0	0	-	-	0
Navicular												
Cuboid	0	-	-	0	0	-	-	0	1	1	1	100
First Tarsal	0	-	-	0	0	-	-	0	0	-	-	0
Lateral												
Malleolus	0	-	-	0	0	-	-	0	1	1	1	100
Cuniform Pes	0	-	-	0	0	-	-	0	0	-	-	0
Metatarsal	0	-	-	0	0	-	-	0	0	-	-	0
Metapodial	0	-	-	-	0	-	-	-	1	-	-	-
Long Bone	2	-	-	-	7	-	-	-	12	-	-	-
Unidentified	24	-	-	-	626	-	-	-	2824	-	-	-
TOTAL	45		(1)		662		(1)		3045		(1)	

TABLE 1, CONTINUED

Element	Cabin 4				Cabin 5				Cabin 6			
Skull	7	1	1	100	7	1	1	20	1	1	1	25
Mandible	0	-	-	0	3	2	1	20	1	1	1	25
Vertebrae:												
Cervical	0	-	-	0	0	-	-	0	0	-	-	0
Thoracic	15	5	1	100	5	1	1	20	4	1	1	25
Lumbar	2	2	1	100	3	2	1	20	1	1	1	25
Sacrum	0	-	-	0	1	1	1	20	0	-	-	0
Caudal	0	-	-	0	0	-	-	0	0	-	-	0
General	3	-	-	-	2	-	-	-	0	-	-	-
Sternebrae	0	-	-	0	0	-	-	0	0	-	-	0

Element	Cabin 4				Cabin 5				Cabin 6			
Rib	81	14	1	100	26	7	1	20	25	3	1	25
Scapula	2	2	1	100	15	6	5	100	5	2	1	25
Humerus	0	-	-	0	11	5	3	60	3	2	2	50
Radius	1	1	1	100	0	-	-	0	8	6	4	100
Ulna	0	-	-	0	0	-	-	0	1	1	1	25
Carpals:												
Magnum	0	-	-	0	0	-	-	0	0	-	-	0
Cuniform	0	-	-	0	0	-	-	0	1	1	1	25
Scaphoid	0	-	-	0	1	1	1	20	0	-	-	0
Lunate	0	-	-	0	0	-	-	0	0	-	-	0
Unciform	0	-	-	0	0	-	-	0	0	-	-	0
Pisiform	0	-	-	0	0	-	-	0	0	-	-	0
Metacarpal	0	-	-	0	0	-	-	0	0	-	-	0
First Phalanges	0	-	-	0	4	3	1	20	0	-	-	0
Second Phalanges	0	-	-	0	1	1	1	20	0	-	-	0
Third Phalanges	0	-	-	0	0	-	-	0	0	-	-	0
Proximal Sesamoids	0	-	-	0	1	1	1	20	0	-	-	0
Distal Sesamoids	0	-	-	0	0	-	-	0	0	-	-	0
Pelvis	0	-	-	0	2	1	1	20	2	1	1	25
Femur	1	1	1	100	1	1	1	20	0	-	-	0
Patella	1	1	1	100	2	2	2	40	0	-	-	0
Tibia	0	-	-	0	10	5	4	80	3	1	1	25
Tarsals:												
Astragalus	0	-	-	0	0	-	-	0	0	-	-	0
Calcaneum	0	-	-	0	0	-	-	0	1	1	1	25
Navicular Cuboid	0	-	-	0	0	-	-	0	0	-	-	0
First Tarsal Lateral	0	-	-	0	0	-	-	0	0	-	-	0
Malleolus	0	-	-	0	0	-	-	0	0	-	-	0
Cuniform Pes	0	-	-	0	0	-	-	0	0	-	-	0

Element	Cabin 4	Cabin 5	Cabin 6
Metatarsal	0 - - 0	0 - - 0	0 - - 0
Metapodial	0 - - 0	0 - - 0	0 - - 0
Long Bone	9 - - -	12 - - -	16 - - -
Unidentified	451 - - -	399 - - -	131 - - -
TOTAL	573 (1)	506 (5)	203 (4)

TABLE 2

STANDARDIZED MNI VALUES AND MEAT VALUES FOR BUFFALO LAKE, CYPRESS HILLS, AND BATOCHE

Element	Buffalo Lake Cabins 1-4@	Buffalo Lake Cabin 5	Buffalo Lake Cabin 6	Cypress Hills@	Batoche@	Meat Value (see note)
Skull	50	20	25	30	60	18
Mandible	25	20	25	40	20	31
Vertebrae:						
Cervical	0	0	0	20	20	37
Thoracic	100	20	25	30	40	47*
Lumbar	75	20	25	20	60	33
Sacrum	25	20	0	10	40	49
Caudal	25	0	0	10	0	---
Ribs	100	20	25	20	40	51
Scapula	100	100	25	40	40	45
Humerus	25	60	50	30	40	29*
Radius	25	0	100	60	20	15
Ulna	50	0	25	100	40	15
Carpals:						
Magnum	0	0	0	10	0	---
Cuniform	0	0	25	30	40	---
Scaphoid	25	20	0	30	20	---
Lunate	0	0	0	20	20	---
Unciform	0	0	0	10	20	---
Pisiform	25	0	0	10	0	---

Element	Buffalo Lake Cabins 1-4	Buffalo Lake Cabin 5	Buffalo Lake Cabin 6	Cypress Hills	Batoche	Meat Value (see note)
Metacarpal	25	0	0	10	20	5
First Phalanges	25	20	0	10	20	2
Second Phalanges	25	20	0	10	20	2
Third Phalanges	0	0	0	10	20	2
Pelvis	50	20	25	20	80	49
Femur	75	20	0	40	80	100
Patella	25	40	0	40	0	---
Tibia	75	80	25	70	20	26
Tarsals:						
Astragalus	25	0	0	30	20	---
Calcaneum	0	0	25	40	20	---
Navicular						
Cuboid	25	0	0	50	0	---
First Tarsal	0	0	0	10	0	---
Lateral						
Malleolus	25	0	0	50	20	---
Cuniform Pes	0	0	0	20	0	---
Metatarsal	0	0	0	40	20	11
TOTAL MNI	4	5	4	10	5	---

Note: Meat value taken from Binford (1978:21).

* Probably underestimates Bison value.

@ Values derived by adding together the MNI values from each cabin or house at the site.

TABLE 3

ETHNICITY OF BUFFALO LAKE REMAINS
BASED ON STANDARDIZED MNI VALUES

		Cabins 1 to 4	Cabin 5	Cabin 6
European Ethnicity	high pelvis	?	-	-
	high sacrum	-	-	-
	high lumbar	*	-	-
	high humerus	-	*	*
Métis/Indian Ethnicity	high mandible	-	-	-
	high thoracic	*	-	-
	high rib	*	-	-
	high radius and ulna	*	-	*
	high tibia	*	*	-
	high metacarpal	*	-	-
	high metatarsal	-	-	-

* Trait present
? High relative to other proveniences, but not relative to meat value.

TABLE 4

COMPARISON BETWEEN BUFFALO LAKE,
BATOCHE, AND CYPRESS HILLS SITES

	Buffalo Lake Cabins*		
Batoche/Cypress Hills Difference	1 to 4	5	6
Skull: B = 60, C = 30	B	C	C
Mandible: B = 20, C = 40	B	B	B
Lumbar: B = 60, C = 20	B	C	C
Sacrum: B = 40, C = 10	--	C	C
Sternum: B = 0, C = 20	C	B	B
Rib: B = 40, C = 20	B	C	C
Radius: B = 40, C = 100	B	B	C

Batoche/Cypress Hills Difference	Buffalo Lake Cabins* 1 to 4	5	6
Ulna: B = 20, C = 60	B	B	B
Pelvis: B = 80, C = 20	--	C	C
Femur: B = 80, C = 40	B	C	C
Tibia: B = 20, C = 70	C	C	B
Metatarsal: B = 20, C = 40	B	B	B

* B = as Batoche; C = as Cypress Hills; -- = Uncertain.

APPENDIX III, ARTIFACT AND FAUNAL TABLES

TABLE 6

FLAT-HEAD CUT NAILS, CABIN 3, GROUP 1

Cat. Number	L	W	Th	Feature No.	Complete	Incomplete
H75.101.525	38.63	4.68	3.25	2	x	-
528	38.68	3.90	2.65	2	x	-
374	33.81	3.74	2.86	2	x	-
139	50.46+	4.40	3.97	2	x Clinched	-
1432	49.18	3.93	3.63	2	x	-
1433	31.15	3.28	3.18	2	x	-
?71	32.59	3.85	2.83	1	x	-
70	28.69	3.33	2.87	1		x
892	29.31	4.36	3.23	2		x
H76.89.236	28.49	4.85	3.58	2		x
142	10.68	4.82	3.80	2		x
9	10.75	2.57	2.35	2		x
75	20.58	4.15	3.75	2		x
H75.101.12	29.31	4.07	3.43	3		x

L=	W=	T=
N = 7	N = 7	N = 7
Max = 50.46	Max = 4.68	Max = 3.97
Min = 31.15	Min = 3.28	Min = 2.35
R = 19.31	R = 1.40	R = 1.32
x = 39.21	x = 3.96	x = 3.24
q = 7.21	q = .42	q = .43

TABLE 7

FLAT-HEAD CUT NAILS, CABIN 3, GROUP 2

Cat. Number	L	W	Th	Feature No.	Complete	Incomplete
H75.101.151	64.11	5.18	3.65	1	x	-
146	33.88	3.83	2.44	Test Tr. B	x	-
373	32.70	3.27	2.04	2	x	-
520	25.38	2.23	2.19	2	x	=
536	25.97	3.13	2.56	2	x	-
372	50.52	4.66	3.22	2	x	-
79	64.12	5.19	3.67	1	x	-
378	48.01	3.91	3.76	2	x	-
530	46.69	3.86	3.56	2	x	-
531	49.75	3.90	3.48	s	x	-
271	33.15	4.07	2.32	2	x	-
32	39.33	3.46	3.41	2	x	-
331B	26.48	3.71	2.85	2	x	-
3??	41.51	4.12	3.40	2	x	-
H76.89.50	39.89	4.21	3.46	2	x	-
74	26.70	3.38	2.62	2	x	-
49	54.40	4.44	4.08	2	x	-
24	25.88	3.44	3.22	2	x	-
51	26.15	2.74	1.88	2	x	-
H75.101.317	23.16	2.69	2.15	2	-	x
52	39.71	4.21	3.99	1	-	x

Cat. Number	L	W	Th	Feature No.	Complete	Incomplete
H75.101.519	58.69	7.66	5.27	2	-	x
312	54.16	6.85	4.18	2	-	x
60	52.87	5.88	3.60	1	-	x
440	39.74	3.96	3.41	2	-	x
524	29.58	6.41	4.00	2	-	x
307	20.33	5.91	3.95	2	-	x
522	36.10	4.21	3.76	2	-	x
537	18.06	4.26	1.79	2	-	x
110	40.29	3.66	3.64	1	-	x
923	33.40	3.76	3.70	2	-	x
438	19.41	3.86	3.26	2	-	x
375	26.02	3.89	3.78	2	-	x
534	27.25	4.02	3.13	2	-	x
532	21.96	2.89	2.54	2	-	x
H76.89.143	13.24	4.66	3.04	2	-	x
156	33.92	6.22	4.26	2	-	x
178	36.08	3.56	3.39	2	-	x
331A	23.09	7.00	2	-	x	

TABLE 8

FLAT-HEAD CUT NAILS, CABIN 3, GROUP 3

Cat. Number	L	W	Th	Feature No.	Complete	Incomplete
H75.101.441	33.51	3.71	2.76	2	x	-
H76.89.114	31.42	3.60	3.54	2	x	-
235	32.70	3.86	2.38	2	x	-
H75.101.516	25.25	3.64	2.76	2	-	x
535	29.56	3.74	2.19	2	-	x
377	27.41	3.64	2.65	2	-	x
H75.101.521	25.26	3.91	2.80	2	-	x
533	29.13	3.04	2.93	2	-	x
529	21.91	4.75	2.81	2	-	x
437	21.12	3.39	2.50	2	-	x
H76.89.104	28.98	3.92	3.05	2	-	x
137	31.98	3.73	3.06	2	-	x
177	25.38	3.53	3.52	2	-	x
250	38.31	3.43	3.21	2	-	x
144	17.63	4.17	1.89	2	-	x
H75.101.371	30.48	4.23	2.03	2	x	-

TABLE 9

MACHINE-CUT NAIL SHANKS, CABIN 3

Cat. Number	L	W	Th	Feature No.	Complete	Incomplete
H75.101.538	31.24	4.27	3.34	2	----------	
526	27.17	4.45	3.03	2		
48	45.05	4.05	2.98	1		
442	46.96	4.48	4.20	2		
129	23.75	4.59	3.32	1		
138	56.38	4.80	4.54	2		
54	20.45	2.53	1.83	1		
331C	31,50	4.80	4.16	2		

TABLE 10

DRAWN TUBULAR BEAD ANALYSIS, CABIN 3

Colour	Seed			Intermediate			Pony			Totals			
	O	TL	TP	O	TL	TP	O	TL	TP	O	TL	TP	Sum
Colourless			15									15	15
N 9.0/	51			5			7			63			63
N 1.0/							1			1			1
2.5RP 6/6	2	5			5					2	10		12
2.5RP 6/8		1									1		1
5RP 6/2				2						2			2
5RP 7/4	4	16		20	1					24	17		41
10RP 7/6	8	4	2	6						14	4	2	20
2.5R 7/6	1	2								1	2		3
2.5R 5/8			1									1	1
5R 4/6	1									1			1
5R 5/12			2									2	2
7.5R 8/2	1									1			1
7.5R 4/4		1									1		1
7.5R 8/4	2	1								2	1		3
7.5R 3/8	774				1					774	1		775
7.5R 4/10					1						1		1
7.5R 6/10			1									1	1
7.5R 4/12	1									1			1

O = Opaque TL = Translucent TP = Transparent Numerical counts are of each color by bead type.

Colour	Seed			Intermediate			Pony			Totals			
	O	TL	TP	O	TL	TP	O	TL	TP	O	TL	TP	Sum
7.5R 5/14			17			1						18	18
10YR 4/6	1									1			1
10YR 5/6	1									1			1
10YR 6/6	12	414								12	414		426
10YR 6/10			2									2	2
2.5Y 7/4	4									4			4
2.5Y 7/8	3	1200								3	1200		1203
5Y 7/8	4		1							4		1	5
5Y 8/10			4									4	4
10Y 3/2	1									1			1
5GY 5/4	2		4							2	4		6
7.5GY 5/6	2			1						3			3
10GY 6/8			5						1			6	6
2.5G 6/4	7	6								7	6		13
2.5G 7/10						1			3			4	4
5G 6/4		30	1	1						1	30	1	32
10G 4/6		1	2								1	2	3
10G 4/10			3			1						4	4
2.5BG 3/8		3	6								3	6	9
7.5B 9/2	11									11			11
7.5B 8/4	11	1								11	1		12
7.5B 7/4	52	1	TL/O 4*	3						55	1	TL/O 4*	60
7.5B 5/6	2	195	3		80					2	275	3	280

* Four seed beads possessed TL cores and opaque outer walls.

Colour	Seed			Intermediate			Pony			Totals			
	O	TL	TP	O	TL	TP	O	TL	TP	O	TL	TP	Sum
7.5B 6/6		2									2		2
7.5B 7/6	12	1					18			30	1		31
7.5B 5/8	4	6	1							4	6	1	11
7.5B 6/8	2	3								2	3		5
7.5B 6/10		1									1		1
10B 8/6	2									2			2
10B 4/8		13									13		13
7.5PB 2/6		1									1		1
7.5PB 2/10	1	4			1					1	5		6
7.5PB 4/10							1			1			1
7.5PB 3/12						1			1				1
10PB 3/10		5			1						6		6
2.5P 5/4		1									1		1
Ext.5R 7/4 Core N9.0/	25									25			25
Cornaline d'Aleppo			43			14						57	57
Striped Blue/White 5PB 4/8 and 5PB 9/1	2									2			2
TOTALS										1071	2012	131	3218

TABLE 11

ARTIFACTS FROM CABIN 1

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
HUNTING										
Rimfire Cartridge Case	H70.109.113	23.4	13.6	--	Surface (Trail near Cabin)	1				
Percussion Cap	H71.107.13	6.3	5.3 5.0	-	5.5S,26.2E					1
Cap Box Lid	H70.109.60	40.7 Diam	5.9 Rim	0.6	5.2S,11.2E		1			
CONSTRUCTION BLACKSMITHING										
Forged Iron Nails										
Rose-Head Forged Nail	H70.109.14	47.9 9.6	4.2 8.4	3.9 3.9	5S,5E,E1/2		1			
"	H70.109.21	43.9 8.8	4.0 7.5	3.9 3.1	10S,5E, E 1/2				1	
"	H71.107.30	62.1 5.1	3.7 4.7	3.2 1.6	4.7S,0.7E		1			
"	H71.107.8	60.5 6.6	4.1 5.6	3.9 2.0	10S,10E, NW 1/4				1	
Fragment	H71.107.2	48.3x 9.0	4.4 7.3	4.3 2.0	10.6S, 10.8E				1	
"	H70.109.76	22.6x 9.4	4.4 8.6	3.5 3.1	10S,9.8E				1	
Gable-Head Forged Nail	H71.107.9	70.0 6.8	4.3 3.6	3.8 1.8	10S,10E, SW 1/4				1	
L or T-Head Forged Nail	H71.107.53	59.2 9.4	4.9 5.7	4.5 2.6	5S,15E, Dist.					1
Flat-Head Forged Nail	H71.107.36	18.1 7.9	2.5 7.2	2.0 1.2	5S,15E, S 1/2					1

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
Flat-Head Forged Nail	No Number	26.7 5.2	2.5 4.4	1.9 0.8	-----	1				
Forged Nail Fragment	H71.107.55	57.0x	5.3	5.2	5.2S,5.8E			1		
"	H70.109.15	52.9x	4.4	4.1	1.7S,5.0E		1			
"	H70.109.88	44.6x	4.1	4.0	70S,14.2E Dist.					1
"	H71.107.18	30.7x	4.9	3.7	11.0S, 15.6E					1
"	H71.107.39	60.6x	4.8	4.8	4.0S,5.3E		1			
"	H71.107.15	24.0x	6.4	4.6	5.2S,5.0E			1		
Forged or Cut Iron Nail	H70.109.89	18.9 7.1	2.8 6.6	2.8 1.8	7.3S,14.4E					1
"	H71.107.29	13.3x 4.6	2.5 3.7	2.4 0.6	4.6S,4.8E			1		
"	H71.107.17	9.0x 7.9	2.5 7.1	2.2 1.5	11.0S, 15.6E					1
Machine Cut Iron Nails										
Rose-Head Cut Nail	H70.109.94	37.6 6.0	3.4 5.7	3.2 2.1	8.4S,13.4E					1
"	H71.107.32	40.8x 6.4	3.8 6.4	2.9 2.9	4.9S,5.7E		1			
Gable-Head Cut Nail	H70.109.40	63.9x 9.9	5.5 6.3	5.3 3.2	12.6S, 11.5E				1	
"	H70.109.71	48.8x 6.7	4.0 4.9	3.6 2.2	10.9S, 9.8E				1	
"	H71.107.6	68.7 7.4	4.3 4.5	3.7 1.9	ON,5E		1			
"	H71.107.54	66.5 6.5	4.2 5.2	3.2 2.3	5.0S,5.4E			1		

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
Gable-Head Cut Nail	H70.109.72	57.6 7.6	4.3 5.7	3.7 3.7	11.0S,8.0E				1	
"	H70.109.261	40.2 9.9	5.3 6.9	5.0 3.5	Balk along East Wall 10S,5E				1	
"	H70.109.12	26.0x 8.3	4.8 4.2	3.6 4.2	ON,0E,E1/2, ON,5E,W1/2		1			
Flat-Head Cut Nail, Group 1	H70.109.49	65.0 7.7	4.6 4.6	4.2 2.8	12.5S, 10.7E				1	
"	H70.109.90	49.9 7.6	3.6 7.3	3.4 1.3	11.0S,9.9E					1
"	H71.107.3	40.2 6.7	3.2 6.5	3.1 1.4	13.6S, 11.0E				1	
"	H71.107.58	31.4 6.3	3.3 5.4	3.0 1.2	5.5S,4.5E			1		
"	H71.107.40	31.1 5.7	3.2 5.5	2.7 1.2	12.6S, 11.5E				1	
"	H71.107.34	31.4 5.2	2.9 4.2	2.9 1.3	4.7S,5.4E		1			
"	H70.109.67	31.5 6.8	3.4 5.5	3.2 1.1	12.4S,8.8E				1	
"	H70.109.59	26.6 3.4	2.1 2.8	1.8 0.5	12.8S, 12.8E	1				
"	H71.107.31	20.8 6.0	2.5 5.1	2.4 1.0	10.5S, 10.1E				1	
Fragment	H70.109.69	35.2x 7.7	4.7 5.1	3.4 3.0	10S,5E, NE 1/4				1	
Flat-Head Cut Nail Group 2	H70.109.96	70.0 8.6	5.2 7.9	3.4 2.5	10.4S,8.3-8.6E				1	
"	H71.107.22	61.2 6.2	4.0 5.9	2.8 1.7	3.0S,23.5E					1

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
Flat-Head Cut Nail Group 2	H71.107.46	47.6 6.8	4.4 6.7	3.3 2.4	0S,5E, SW 1/4		1			
"	H71.107.35	38.4 5.8	4.0 4.9	2.5 1.2	5S,15E, S 1/2					1
"	H70.109.246	38.3 5.4	3.3 5.1	2.4 1.6	5S,5W,E1/2		1			
"	H71.107.45	39.3 6.3	3.7 6.3	2.2 1.5	0S,5E, SW 1/4		1			
"	H70.109.44	37.5	3.7	2.4	12.7S, 11.0E				1	
Fragment	H70.109.69	27.9x 5.1	3.6 5.0	2.4 1.1	10S,5E, NW 1/4				1	
"	H70.109.98	31.8x 7.5	3.4 6.3	3.1 1.0	10S,5E, Balk along wall	1				
"	H70.109.50	30.2x 8.6	5.6 7.3	3.9 2.5	10S,10E, W1/2			1		
"	H70.109.87	25.4x 6.0	3.5 5.8	2.2 1.6	6.6S,14.6E					1
"	H70.109.41	35.2x 8.2	5.7 7.9	3.6 2.0	12.1S, 10.8E				1	
"	H71.107.44	28.7x 8.0	5.7 6.9	3.4 2.6	4.9S,5.4E		1			
"	H71.107.51	26.6x 7.8	5.2 7.4	3.9 2.2	4.4S,3.7E			1		
"	H70.109.68	25.9x 6.5	5.0 5.6	3.5 2.2	No Prov. Cat?	1				
"	H70.109.11	25.9x 5.8	4.6 5.6	3.5 1.8	0N,0E,E1/2, 0N,5E,W1/2		1			
"	H71.107.25	27.4x 7.0	4.0 7.0	3.2 3.3	2N,15E, Dist.	1				

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
Fragment	H70.109.82	18.7x 4.0	3.2 3.4	3.2 2.3	ON,10E, SW 1/4		1			
"	H70.109.47	23.7x 8.4	4.5 5.4	4.2 2.1	12.3S, 11.4E				1	
"	H70.109.112	17.2x 6.2	4.6 5.5	2.6 2.1	5S,10E, N1/2					1
Flat-Head Cut Nail, Group 3	H70.109.72	20.2 6.0	2.7 5.0	2.5 1.4	11.0S,8.0E				1	
"	H70.109.101	31.9 6.9	3.2 6.0	2.9 1.4	1.9S,1.8W, Out.S.Wall		1			
"	H71.107.11	17.5 5.7	2.6 5.1	1.9 1.0	5S,10E, Dist.	1				
"	H70.109.262	30.0x 8.1	3.6 7.4	2.9 1.3	10S,5E				1	
"	H71.107.4	29.1x 7.7	3.2 7.1	3.2 1.2	12.4S, 11.0E				1	
Cut Nail Fragment w. Pounded End	H71.107.50	35.7 4.4	3.3 3.7	2.2 1.0	7.0S,0.5E		1			
Cut Nail Tip Frag.	H70.109.74A	32.8x	7.4	5.2	10S,5E,				1	
"	H70.109.6A	36.6x	4.3	3.4	ON,5E		1			
"	H70.109.57	48.7x	4.3	3.1	11.1S, 10.2E				1	
"	H70.109.245	47.3x	3.4	3.1	5S,5W,E1/2		1			
"	H70.109.247	42.5x	3.8	3.3	5S,5W,E1/2		1			
"	H70.109.248	28.8x	4.1	3.9	5S,5W,E1/2		1			
"	H71.107.57	34.5x	4.2	3.8	5S,5E, NW 1/4			1		
"	H70.109.10	25.0x	3.6	3.2	0S,0E,E1/2 0S,5E,W1/2		1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
Cut Nail Tip Frag.	H71.107.23	16.1x	3.4	2.9	2N,15E Dist.					1
"	H71.107.7	28.7x	3.4	3.4	10S,10E, NW 1/4				1	
"	H70.109.56	20.7x	3.9	3.2	10.7S, 14.5E				1	
"	H70.109.97	24.2x	3.0	2.8	10.3S,8.1E				1	
Cut Nail Tip Frag.	H70.109.75	17.8x	2.3	2.0	12.7S,9.7E				1	
Cut Nail Tip Frag., Bent	H70.109.8	40.0x	4.0	3.6	10S,10E, NW 1/4				1	
"	H70.109.79	33.0x	3.9	3.3	10S,5E, NE 1/4, Dist.				1 1	
Fragment, Bent and Broken	H70.109.70	38.3x	4.4	3.0	10S,5E, NE 1/4				1	
"	H71.107.49	43.0x	4.0	2.7	4.2S,4.8E			1		
Cut Nail Medial Fragment	H70.109.74B	32.8x	7.4	5.2	10S,5E, NE 1/4				1	
Nail Frag.? Chisel Tip	H71.107.41	29.0x	4.0	3.7	4.5S,0.4E	1				
Nail Frag.?	H71.107.38	24.0x	3.6	3.6	5S,15E, S1/2					1
"	H71.107.33	16.9x	3.1	2.6	4.0S,5.1E	1				

FORGED NAIL DISTRIBUTION	1	4	2	5	4
CUT NAIL DISTRIBUTION	5	17	6	29	6
GABLE-HEAD CUT NAIL DISTRIBUTION		2	1	4	

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
FLAT-HEAD CUT NAIL, GROUP 1, DISTRIBUTION						1	1	1	6	1
FLAT-HEAD CUT NAIL, GROUP 2, DISTRIBUTION						3	6	2	5	4
FLAT-HEAD CUT NAIL, GROUP 3, DISTRIBUTION						1	1		3	
TOTAL NAILS, DISTRIBUTION (82 Nails)						6	21	9	34	12
Iron Wire	H70.109.80	61.7	4.0	--	Backfill	1				
DOMESTIC, HOUSEHOLD										
Plain White Earthenware, Rim Sherd	H70.109.16A and B	71.7x	75.5	6.3	0.0S,3.5E		1			
Body Sherd	H70.109.30	34.0x	27.9x	4.5	7.0S,9.7E		1			
"	H70.109.83	21.5x	18.2x	4.2	0S,10E, SW 1/4		1			
"	H70.109.32	15.8x	12.5x	3.2	5S,10E NW 1/4		1			
"Turco" Pattern Earthenware Rim Sherd.	H70.109.116	43.9x Ht.	69.8x	3.8	7.3S,9.8E		1			
	(Conjoining next specimen)									
"	H70.109.20				5S,10E		1			
"	H70.109.1	69.0x Ht.	54.5x	6.5	0N,5E, E 1/2		1			
	(Conjoining next 3 specimens)									
"	H70.109.31A				0.6S,10.2E		1			
"	H70.109.31B				0.6S,10.2E		1			
"	H70.109.28	24.7x	19.2x	3.3x	6.0S,11.1E		1			
"	H70.109.278	9.0	7.0	3.2	0S,5W		1			
Body Sherd	H70.109.24	18.0x Ht.	15.3x	3.1	7.1S,12.1E		1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
"Grapevine" Pattern Earthenware Rim Sherd	H71.107.59	14.6	16.8	3.6	ON,0E, SW 1/4		1			
Body Sherd	H70.109.5	27.2x	24.8x	3.6	6.6S,7.8E		1			
"	H70.109.22	19.3x	18.4x	5.1	9.4S,10.4E		1			
"	H70.109.25	25.2x	16.4x	4.6	5S,10E, D 1/2		1			
"	H70.109.93	9.7x	4.3x	3.2	7.1S,14.8E					1
"Beverly" Pattern Earthenware Rim Sherd	H70.109.45A	93.1x	47.3x	5.4	12.4S,10.8E				1	
	(Conjoining next four specimens)									
"	H70.109.45B				12.4S,10.8E				1	
"	H70.109.48				12.4S,10.7E				1	
"	H70.109.43				12.5S,11.0E				1	
"	H70.109.39				12.4S,11.0E				1	
"	H71.107.48	71.7x	58.6x	4.8	0.2S,9.4E		1			
	(Conjoining next specimen)									
"	H70.109.4				3.7S,6.4E		1			
Body Sherd	H70.109.5	108.6 x	41.0x	5.8	13.7S,11.5E				1	
	(Conjoining next 4 specimens)									
"	H70.109.42				12.0S,11.0E				1	
"	H70.109.38A				12.0S,11.2E				1	
"	H70.109.38B				12.0S,11.2E				1	
"	H70.109.55				10S,10E				1	
"B 772" Pattern Earthenware Body Sherd	H70.109.19	27.5x	22.0x	4.2	5S,10E, NW 1/4		1			
	(Conjoining next specimen)									

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
"B 772" Pattern Earthenware Body Sherd	H70.109.27				5S,10E, NW 1/4		1			
	(Conjoining previous specimen)									
"	H70.109.263	16.1x	15.8x	3.6x	OS,OE		1			
"	H70.109.68	7.6x	7.3	1.0x	5S,10E, NW 1/4		1			
"Portneuf" Earthenware Rim	71.107.20	68.2	56.8	3.8	5N,25E, E1/2, Outside NE Corner	1				
Painted Earthenware	H70.109.117	24.1x	17.5x with foot	5.9	7.3S,9.8E		1			
Painted Earthenware	H70.109.13	18.9x	16.6x	5.7	5S,5E,E1/2			1		
"	H70.109.53	14.3x	12.9x	3.7	5.2S,10.6E		1			
EARTHENWARE, GENERAL DISTRIBUTION						1	24	1	10	1
Glass Bottle Fragment	H70.109.65	31.6x	25.4	27.0	11.35S,8.5E				1	
	(Conjoining next specimen)									
"	H70.109.66				11.7S,8.5E				1	
Perf. Metal Object	H70.109.280	87.8x	43.4	0.6	OS,5W, Out. Wall		1			
Tin-Plate Box Frag.	H70.109.77C	57.3x	11.9x	0.8?	4.4S,10.7 to 11.3E		1			
"	H70.109.77A	62.7x	9.2x	0.8?	4.4S,10.7 to 11.3E		1			
"	H70.109.52	68.0x	8.4x	4.5 Fold	5.4S,10.6 to 10.85E		1			
"	H70.109.77B	59.1x	8.5x	0.4	4.4S,10.7 to 11.3E		1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
Tin Plate Box Frag.	H70.109.29	45.5x	8.4	0.6	5S,10E, NW 1/4		1			
"?	H70.109.85	27.7x	8.0	0.5	7.0S,13.0E		1			
"?	H70.109.241	Frags.		0.7	2.5S,3.4W			1		
"	H70.109.242	Frags.		0.8	2.5S,3.4W			1		
Corrugated Tin-Plate Fragment	H70.109.26	38.6x	32.6	0.7	5S,10E, NW 1/4		1			
"	H70.109.36	41.1x	30.2	0.8	6.1S,10.1E		1			
Irrregular Perf. Iron Sheet	H71.107.42	25.0x	14.7x	0.2	4.5S,5.4E			1		
Tin-Plate or Iron Fragments	H70.109.102	3 frags.		0.5	1.0S,3.7 to 3.8W		1			
"	H70.109.111	3 frags.		0.5	7.9S,14.5E				1	
"	H70.109.279	22.5x	9.5x	1.2	0S,5W		1			
"	H70.109.110	30.6x	17.4x	0.1	5.8S,12.7E		1			
"	H70.109.78	16.8x	14.7x	1.3	3.8S,10.4E		1			
"	H70.109.51	16.8x	16.3x	1.9	5.55S,10.6E 10.6E		1			
TRANSPORTATION										
Horseshoe Nail	H70.109.58	53.3 8.4	4.5 4.9	2.1 7.5	11.7S,10.7 to 10.9DE				1	
"	H70.109.21	50.2 8.4	3.7 4.0	2.4 7.9	9.8S,6.0E		1			
RECREATION										
		Ht.	Diam.							
Pipe Bowl Fragment	H71.107.63	20.8x	25.0	1.6 2.0	10S,5E, NE 1/4				1	
" Chip	H70.109.62	----------			10S,5E, NW 1/4				1	

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
CLOTHING AND ORNAMENTATION										
Buttons										
		Diam.	Loop							
Shell Button, Type 1	H70.109.18	11.8	-- -	1.7	0S,0E		1			
Bone Button Fragment, Type 1	H71.107.37	16.8x	-- -	2.6	5S,15E, S 1/2					1
Cast Button, Type 2	H71.107.26	22.7	5.4	1.5	10S,15E, N 1/2					1
"	H71.107.10	20.7	5.5	1.2	7.0S,25.7E					1
"Birdcage Brass Button, Type 4	H71.107.60	17.1	8.0	1.0	0N,0E, SW 1/4		1			
Decorated Hollow Brass, Type 5a	H70.109.240	17.1	5.0	4.6	4.0S,3.2W		1			
Type 5d	H70.107.16	16.6	5.6 Loop	3.8	8.0S,2.0E		1			
		Diam.	Outer	Band						
Plain Hollow Brass, Type 5?	H70.109.23	12.9	4.2	2.9	8.1S,10.4E		1			
BUTTONS, GENERAL DISTRIBUTION							5			3
Beads										
			Diam.	Perf.						
Small Blue Glass Bead	H71.107.12	1.4	1.7	<1.0	11.1S, 8.6E				1	
"	H71.107.52	1.0	1.5	<1.0	8.7S, 16.2E					1
Small Pink Glass Bead	H70.109.177	1.4	1.5	<1.0	10S,20E Out. Wall					1

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C1G	C1W	FP	AC	C1E
			Diam.	Perf.						
Large Amber Glass Bead	H71.107.56	8.9	10.1	3.4	5S,15E, Dist.					1
NATIVE INDUSTRIES										
Chipped Stone Flake	H70.109.107	27.9	13.3	5.5	5S,5W		1			

DISTRIBUTION BY FUNCTIONAL CATEGORY

HUNTING	1	1			1
CONSTRUCTION AND BLACKSMITHING	9	21	9	34	13
DOMESTIC AND HOUSEHOLD	1	38	4	13	1
TRANSPORTATION		1		1	
RECREATION				2	
CLOTHING AND ORNAMENT		5		1	6
NATIVE INDUSTRIES		1			
TOTALS (163 Items)	11	67	13	51	21

TABLE 12

FAUNAL MATERIAL FROM CABIN 1

Species & Unit No.	Element	Portion	R/L	Cut	Tth Mk	Brn	Grid Lo	C1G	C1W	FP	AC	C1E
LARGE MAMMALS												
Unid. May be Bison (Bison bison)												
H71.107.19	Spinous	Complete		x	x		5N,10E	1				
H70.109.81C	"	Medial		x			10S,5E, E 1/2					1
Various No.	Rib Fg.	Prox.					Various		3			
"	"	Medial							10	3		
"	"	Distal								1		
H70.109.92D	Scapula	Prox.	R	x			0S,10E		1			
H70.109.35I	"	Medial					5S,10E		1			
H71.107.28	"	Distal	R				Balk 10S, 15E-5S,15E					1
H70.109.109C	"	"					0S,0E		1			
H70.109.235I	"	"					10N,5W		1			
Various No.	Long B Frags.	Medial		3	1	10	Various		52	6		
TOTAL LARGE MAMMALS (BISON?)								1	69	10	--	2
SMALL MAMMALS												
Showshoe Hare (Lepus americanus)												
H70.109.34B	Mandible	Body	R				0S,10E		1			

Species & Unit No.	Element	Portion	R/L	Cut	Tth Mk	Brn	Grid Lo	C1G	C1W	FP	AC	C1E
Showshoe Hare (Lepus americanus)												
H70.109.109D	Mand.	Body	R				0S,0E		1			
H70.109.64D	Femur	Medial	L				5S,5E			1		
Muskrat (Ondatra zibethicus)												
H71.107.27A	Femur	Med.+ Dist.	R				10S,5E W 1/2		1			
H70.109.239C	Tibia Fibular	Prox.	L				0S,5W		1			
H70.109.105C	Meta-podial	Comp.	?				0S,5W		1			
H70.109.239B	"	Comp.	?				0S,5W		1			
Small Mammal Unid. Sn. Hare?												
H70.109.34E	Rib Fr.	Medial	--				0S,10E		1			
H70.109.19	Long B Frag	Medial	--				0S,0E		1			
H70.109.7A	"	"	--				5S,5E			1		
H70.109.105D	"	"	--				0S,5W		1			
TOTAL SMALL MAMMALS								--	9	2	--	-
BIRDS												
Gadwall Anas strepera												
H71.107.43A	Radius	Distal	L				5S,15E					1

Species & Unit No.	Element	Portion	R/L	Cut	Tth Mk	Brn	Grid Lo	C1G	C1W	FP	AC	C1E
Trumpeter Swan (Olor buccinator)												
H71.107.43B	Corocoid	Prox.	L				5S,15E					1
Unid., Bird, Crow Size Passeri-formes)												
H71.107.62	Tibio-tarus	Medial					5S,15E					1
Same, or Larger												
H71.107.47A	Tibio-tarsus	Prox.					5S,15E					1
Unid.Bird												
H70.109.9A-I	Thor. Vert.	Medial				x	0S,0E 0S,5E		1			
TOTAL BIRDS								--	1	--	--	4
FISH												
Unid. Fish												
H70.109.63-1	Scale	Complete					10S,10E, E 1/2					1
H70.109.63-2	"	"					10S,10E, E 1/2					1
TOTAL FISH												2
TOTAL BONE DISTRIBUTION								1	80	12	--	8

TABLE 13

ARTIFACTS FROM CABIN 2

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
HUNTING											
Gunflint	H73.140.116	26.4	20.5	8.0	Cut C			1			
Fragment	H73.140.44	---	---	---	Cut B			1			
"	H73.140.45	---	---	---	Cut B			1			
			Diam.	Wt.							
Round Lead Ball	H70.109.192		15.0	19.73	3.36S,2.55E		1				
"	H73.140.14		14.45	16.79	Cut A			1			
"	H73.140.46		14.45	16.44	Cut B			1			
Lead Shot	Various	Diam 2.75 - 4.8 Diam.			Various		13	441			
Sprue Frags.	H73.140.126	6.2-8.4	2.6-3.3		Cut C			6			
Lead Bullet	H73.140.117	10.7x	11.2	12.95	Cut C			1			
CONSTRUCTION AND BLACKSMITHING											
File Tang	H73.140.225	96.0	15.0	5.5	Cut C			1			
Forged Iron Nails											
Gable-Head Forged Nail	H73,140.28	73.6 6.8	5.2 5.4	4.0 3.5	Cut B			1			
"	H73.140.141	70.75 7.8	5.9 5.1	4.3 4.3	Cut C			1			
Forged Frag. Flat Tip	H70.109.122	55.4x	5.8	5.4	2.8 to 3.0S, 2.0E		1				
Forged Frag., Tip	H70.109.165	45.9x	6.9	6.6	1.4N7.25E						1

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Forged or Cut Iron Nail	H73.140.36	34.0 9.6	3.7 8.4	3.5 2.5	Cut B			1			
"	H73.140.209	29.3 9.1	3.4 6.7	2.5 2.8	Cut C			1			
"	H73.140.207	34.4 6.0	3.0 4.0	2.4 3.1	Cut C			1			
"	H73.140.210	21.4 6.7	3.0 5.8	2.2 2.6	Cut C			1			
"	H73.140.27	21.0 7.6	3.3 6.7	3.1 2.0	Cut B			1			
"	H73.140.216	22.0 7.8	3.4 7.3	2.1 2.7	Cut C			1			
"	H73.140.213	20.0 7.3	2.9 6.2	2.5 3.2	Cut C			1			
"	H73.140.193	26.0 8.4	4.0 7.9	2.4 3.3	Cut C			1			
"	H73.140.215	17.0 6.1	2.3 5.1	2.1 1.4	Cut C			1			
"	H70.109.211	20.9 6.5	2.4 6.2	2.1 1.0	14.9S,5.1E Out. S.Wall		1				
Forged or Cut Frag.	H70.109.161	19.8x 8.1	3.7 7.0	3.2 1.7	2.4S,1.5E 2.4S,1.5E		1				
<u>Machine-Cut Iron Nails</u>											
Gable-Head Cut Nail	H73.140.5	82.65 9.9	6.3 7.9	5.8 4.5	Cut A			1			
"	H73.140.41	56.0 7.7	6.4 6.5	4.6 4.2	Cut B			1			
"	H73.140.6	78.4 11.5	6.3 7.6	6.3 4.7	Cut A			1			
"	H73.140.3	68.0 6.6	4.1 5.1	4.3 3.3	Cut A			1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Gable-Head Cut Nail Fragment	H73.140.182	44.0x 7.2	4.6 5.1	3.9 3.7	Cut C			1			
Flat-Head Cut Nail, Group 1	H73.140.218	71.0 9.6	5.5 6.4	5.0 2.9	Cut C			1			
"	H70.109.208	57.7 7.2	4.2 5.0	3.8 2.0	12.75S,2.6E		1				
"	H73.140.7	54.3 8.4	5.1 6.2	4.6 3.5	Cut A			1			
"	H73.140.203	45.25 7.6	4.0 7.4	4.0 2.2	Cut C			1			
"	H70.109.267	45.1 6.4	3.9 5.6	3.4 1.2	15S,0E Out.S.Wall		1				
"	H73.140.206	39.0 6.0	3.1 3.6	1.8 2.5	Cut C			1			
"	H73.140.189	25.0 6.1	3.6 5.0	3.4 2.0	Cut C			1			
"	H70.109.195	22.6 4.8	2.9 3.9	2.9 1.1	3.77 to 3.84S,2.21E		1				
"	H70.109.271	47.4 7.3	3.8 5.5	4.5 1.8	15S,0E, Out.S.Wall		1				
" Slt. Frag.	H70.109.196	52.0x 7.1	4.4 4.3	4.0 2.1	3.25S, 2.65E		1				
Group 1, Fragment	H71.107.64	38.1x 9.1	5.4 6.6	3.8 2.8	6.7S,18.3E					1	
"	H73.140.40	32.0x 7.7	5.0 5.7	5.0 2.8	Cut B			1			
"	H71.107.67	30.9x 7.7	4.9 4.8	3.8 2.0	6.1S,18.3E					1	
"	H70.109.158	22.7x 6.4	4.0 3.5	4.1 1.3	11.35S,1.0E		1				
"	H70.109.273	24.4x 5.6	3.8 4.1	3.0 1.0	2.5N,20E Dist.						1

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Group 1, Fragment	H73.140.131	21.8x 7.4	4.3 4.5	3.8 2.6	Cut C			1			
"	H73.140.186	30.4x 8.1	4.6 5.4	4.3 3.0	Cut C			1			
"	H73.140.190	20.5x 9.7	4.9 5.6x	4.7 2.8	Cut C			1			
"	H73.140.188	25.0x 7.1	4.7 5.6	4.4 2.5	Cut C			1			
Flat-Head Cut Nail, Group 2	H70.109.119	75.4 8.0	5.2 7.6	3.4 2.5	1.6S,17.0E						1
"	H73.140.221	65.0 8.0	5.4 7.3	4.0 2.3	Cut C			1			
"	H73.140.1	55.0 8.5	5.5 8.3	4.05 2.5	Cut A			1			
"	H73.140.140	50.0 6.8	4.6 6.3	3.4 1.9	Cut C			1			
"	H73.140.138	53.2 7.2	5.4 6.7	3.9 2.3	Cut C			1			
"	H73.140.220	56.0 6.8	5.0 5.6	4.0 2.7	Cut C			1			
"	H73.140.217	67.1 7.3	5.6 6.5	4.3 2.6	Cut C			1			
"	H70.109.212	51.5 6.2	4.1 5.5	2.5 1.7	12.0S,5.35E		1				
"	H73.140.200	51.0 7.7	5.0 6.7	4.5 3.8	Cut C			1			
"	H73.140.205	49.6 6.3	4.0 6.2	3.2 2.5	Cut C			1			
"	H70.109.221	45.0 6.4	4.2 6.2	3.1 1.6	17.65S,1.5E Out.S.Wall		1				

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Flat-Head Cut Nail, Group 2	H73.140.132	25.6 5.8	3.3 4.9	2.8 1.6	Cut C MisCat.?			1?			
"	H70.109.187	37.9 5.8	3.7 4.0	2.5 1.2	2.48-2.62S, 2.12-2.24E		1				
"	H70.109.148	38.2 5.8	3.6 4.4	2.2 1.2	0.54S,3.91E						1
"	H73.140.133	26.2 5.3	3.4 4.9	2.8 1.7	Cut C			1			
"	H73.140.135	26.2 4.7	3.0 4.5	3.0 1.8	Cut C			1			
"	H73.140.202	40.3 4.7	2.85 4.7	2.85 2.7	Cut C			1			
"	H70.109.219	28.2 6.6	3.0 5.2	2.5 1.5	18.69S,1.24E Out.S.Wall		1				
"	H70.109.189	24.1 5.7	2.6 5.2	2.2 1.1	2.83S,2.48 to 2.58E		1				
"	H70.109.138	25.4 5.6	2.6 4.0	2.1 1.5	1.65S,0.78E		1				
"	H73.140.222	66.0 10.1	5.0 7.6	5.0 3.0	Cut C			1			
Split											
Slight Frag.	H70.109.151	25.4x 6.1	3.6 6.0	2.6 1.7	12.52S,1.45E		1				
Split	H73.140.4	35.4 7.4	5.9 3.8x	2.4x 2.7	Cut A		1				
Fragment	H70.109.268	49.6x 8.4	6.0 7.7	3.4 2.0	15S,0E Out.S.Wall		1				
"	H70.109.206	49.4x 8.0	5.1 6.6	3.5 2.4	13.25S,4.3E		1				
"	H70.109.233	35.0x 6.4	4.4 6.2	3.5 2.2	15.94S, 0.87E		1				
"	H73.140.191	29.8x 8.3	6.8 6.6	4.3 4.0	Cut C			1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Fragment	H70.109.173	24.5x 8.0	5.6 5.3	3.6 1.6	12.8S,8.7E		1				
"	H70.109.287	24.6x 6.5	4.8 5.8	3.2 2.1	5N,20E						1
"	H70.109.285	20.5x 7.8	5.6 6.9	4.0 2.5	OS,5W		1				
"	H73.140.183	20.4x 8.1	6.3 6.3	3.1 3.7	Cut C			1			
"	H73.140.136	19.8x 6.5	4.8 5.5	3.6 2.2	Cut C			1			
"	H73.140.184	x 18.25 7.8	5.3 6.3	2.9 1.9	Cut C			1			
"	H70.109.284	16.6x 5.9	3.6 4.8	3.2 1.4	OS,5W		1				
"	H71.107.69	13.3x 6.6	3.3 4.4	3.0 1.4	5.9S,19.1E					1	
Flat-Head Cut Nail, Group 3	H73.140.219	66.0 7.2	4.0 6.3	4.0 3.5	Cut C			1			
"	H70.109.141	63.4 3.6x	4.5 6.1	3.8 2.4	2.5N.23.0E						1
"	No Number	44.6 6.5	4.5 6.0	4.1 3.5	1.3S,6.8E				1		
"	H70.109.274	39.9 6.1	2.4 5.4	2.3 0.9	ON,5W		1				
"	H70.109.254	38.9 7.2	2.9 6.4	2.7 2.0	3.6S,3.0W		1				
"	H73.140.208	30.4 7.8	3.3 7.1	3.1 2.7	Cut C			1			
"	H73.140.201	27.4 7.2	3.0 6.0	3.0 2.3	Cut C			1			
"	H73.140.134	25.3 5.6	3.0 4.8	2.9 1.4	Cut C			1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Flat-Head Cut Nail, Group 3	H73.140.39	24.3 5.1	3.1 4.6	2.6 1.6	Cut B			1			
	H73.140.43	26.0 6.3	2.9 6.3	2.5 1.8	Cut B			1			
Fragment	H73.140.16	29.1x 8.3	4.55 6.1	4.55 3.6	Cut A			1			
"	H73.140.187	41.0x 8.8	6.0 7.2	5.0 4.2	Cut C			1			
"	H73.140.195	25.4 9.2	5.8 8.2	5.3 3.3	Cut C			1			
"	H73.140.199	26.5x 7.1	4.0 6.6	3.5 2.8	Cut C			1			
"	H73.140.192	12.0x 6.6	4.4 5.0	4.1 2.5	Cut C			1			
Cut Nail w. Reinforced Head	H70.109.176	88.3 10.2	7.1 9.4	5.0 3.5	2.6S,2.9E		1				
Cut Fragment with Pounded End	H70.109.236	21.8 3.8	2.0 3.2	1.6 1.6	17.30W,1.65E Out.S.Wall		1				
"	H70.109.217	19.8 3.9	2.0 2.7	1.4 1.4	17.22S,1.0E Out.S.Wall		1				
"	H70.109.145	20.0 2.7	2.0 1.7	1.6 0.6	2.1N,22.4E						1
Cut Nail w. Indet. Head	H73.140.198	37.6x 5.8	4.5 5.7	4.3 3.1	Cut C			1			
"	H73.140.181	28.7x	4.3	3.7	Cut C			1			
Cut Nail Med. Frag.	H73.140.38	42.8x	3.9	3.9	Cut B			1			
"	H70.109.152	30.9x	3.7	3.3	11.21S, 1.35E		1				

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Cut Nail Med. Frag.	H71.107.66	25.7x	3.9	3.4	6.4S,14.5E					1	
"	H73.140.42?	20.9x	5.0	4.0	Cut B			1			
"	H73.140.197	29.3x	5.7	4.7	Cut C			1			
"	H70.109.129	13.9x	3.6	2.8	10S,3.4E		1				
Cut Nail Tip Frag.	H73.140.185?	50.0x	4.3	5.2	Cut C			1			
"	H70.109.286	49.4x	4.3	3.1	5N,20E						1
"	H71.107.65	40.5x	3.4	2.9	7.0S,15.6E						1
"	H70.109.210?	29.8x	3.3	3.2	13.3S,3.0E		1				
"	H73.140.196	29.0x	4.0	3.5	Cut C			1			
"	H73.140.204	39.0x	2.9	2.7	Cut C			1			
"	H73.140.194	37.0x	4.6	4.6	Cut C			1			
"	H70.109.275	28.4x	2.9	2.3	ON,OE, Out.Wall?		1				
"	H70.109.216	22.6x	3.0	2.9	11.21S,9.5E		1				
"	H70.109.215	13.0x	2.3	2.1	16.8S,1.0E Out.S.Wall?		1				
Nail Frag.?	H70.109.218	21.1x	3.6	3.2	17.45S,1.85E Out.S.Wall?		1				
	H70.109.127	38.6x	2.6	2.4	1.3S,29.0E	1					
Wire (Round) Nails											
Wire Nail	H73.140.139	54.0 7.5	2.85 7.3	2.85 2.2	Cut C			1			
"	H73.140.137	54.6 8.1	3.3 6.1x	3.3 2.5	Cut C			1			
"	H73.140.211	50.0 6.7	2.8 5.2x	2.8 2.4	Cut C			1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Wire Nail	H73.140.212	52.0 6.1x	2.6 5.7x	2.6 2.2	Cut C			1			
FORGED NAIL DISTRIBUTION						--	1	2	1	--	-
FORGED OR CUT NAIL DISTRIBUTION						--	2	9	--	--	-
CUT NAIL DISTRIBUTION						--	31	52	1	5	7
FLAT-HEAD CUT NAIL, GROUP 1, DISTRIBUTION						--	6	10	--	2	1
FLAT-HEAD CUT NAIL, GROUP 2, DISTRIBUTION						--	14	17	--	2	2
FLAT-HEAD CUT NAIL, GROUP 3, DISTRIBUTION						--	2	11	1	--	1
WIRE (ROUND) NAIL, DISTRIBUTION						--	--	4	--	--	-
TOTAL NAILS, DISTRIBUTION (115 Nails)						--	34	67	2	5	7
Washer and Tack	H73.140.179	9.5x	9.4	1.6	Cut C			1			
Screw	H73.140.180	25.4	Head 8.3	Thread 5.2	Cut C			1			
Washer or Finial Frag.	H73.140.177	---	Diam. 23.8 5.25	1.8	Cut C			1			
Iron Rivet Head?	H73.140.8		14.9	4.0	Cut A, 18S,3.5E			1			
Metal Clasp or Retainer	H73.140.178	16.2	16.7	1.0	Cut C			1			
Key	H70.109.188	92.3	28.3 17.1	Shaft 9.6	2.74 to 2.98S, 2.41 to 2.18E		1				
Iron Wire	H70.109.282	11.5	Diam. 1.2	---	OS,5W		1				
DOMESTIC AND HOUSEHOLD											
Earthenware											
Plain White Rim Sherd	H70.109.162	Ht. 13.2x	15.4x	4.5x	2.45S,1.5E		1				

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Plain White Body Sherd	H70.109.232	19.8x	17.3x	4.4	3.82S,2.2W		1				
"	H73.140.33	20.0x	20.0x	5.7	Cut B			1			
"	H73.140.227	19.6x	10.4x	5.2	Surface	1					
"Grapevine" Pattern Earthenware	H73.140.122	12.5x	14.2	4.3	Cut C			1			
"Flower Vase" Pattern Rim Sherd	H73.140.124	32.0x	29.0x	5.0	Cut C			1			
"B 772" Pattern Rim Sherd	H70.109.222	Ht. 15.2x	22.3x	3.9	18.5S,1.4E Out.Wall?		1				
"B 700" Pattern Rim Sherd	H73.140.123	9.7x	5.0x	3.0	Cut C			1			
Blue Transfer Print Body Sherd	H70.109.132	37.5x	32.4x	5.7	18S,26.5E	1					
"	H73.140.121	42.5x	16.1x	5.0	Cut C			1			
"Meander" Pattern Rim Sherd	H73.140.125	47.0x	30.0x	6.4	Cut C			1			
EARTHENWARE, GENERAL DISTRIBUTION						2	3	6	--	--	-
Green Glass Bottle Rim Fragment	H70.109.224A	Ht. 16.7x	35.4x 5.0 Rim	3.0 4.4 Rim	15.10S, 1.25E		1				
" Body Sherd	H70.109.224B	65.3x	27.0x	3.4	15.10S,1.25E			1			
	(conjoining next two specimens)										
"	H70.109.234				17.6S,1.35E		1				
"	H70.109.223				17.9S,1.6E		1				

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Med. Green Bottle Glass Fragment	H73.14.107	37.3x	18.0x	5.8	Cut C			1			
Mirror or Window Frag.	H70.109.266	32.5x	27.1x	2.3	15S,0E Out.S.Wall		1				
"	H70.109.252	44.8x	25.6x	2.5	17.60S,1.2E Out.S.Wall		1				
"	H71.107.71	33.5x	21.8x	2.5	3.4S,7.5W Out.S.Wall		1				
"	H70.109.251	24.8x	24.4x	2.5	16.10S,1.89E Out.S.Wall		1				
"	H70.109.225	21.1x	16.7x	1.6	11.8S,17.5E Out.S.Wall					1	
"	H70.109.264	18.4x	10.6x	2.6	15S,0E Out.S.Wall		1				
"	H70.109.265	20.4x	17.8x	2.5	15S,0E Out.S.Wall		1				
"	H73.140.10	17.6x	15.2x	1.6	Cut A			1			
"	H73.140.106	20.0x	23.0x	1.7x	Cut C			1			
"	H71.107.72	18.8x	10.2x	1.7	3.7S,8.9W Out.N.Wall		1				
"	H71.107.73	12.3x	8.5x	2.5	4.0S.6.3W Out.N.Wall?		1				
"	H70.109.172	9.9x	8.5x	1.7	2.0S,4.2E		1				
MIRROR OR WINDOW GLASS GENERAL DISTRIBUTION						--	9	2	--	1	-
Glass Frag.	H70.107.277				ON,OE		1				
"	H70.109.249				15S,0E Out.S.Wall		1				
Tin Can Lid	H73.140.223	Diam. 79.2		3.7	Cut C			1			
"	H73.140.224	80.0		2.0	Cut C			1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Iron Strapping Frag.	H70.109.230	330.0 x	24.3	0.9	12.25S, 28.5-29.0E S.E. of Cabin	1					
"	H70.109.153	335.0 x	21.8	1.2	12.02-12.4S 1.6-2.5E		1				
Tin-Plate Box Frag.	H70.109.270	38.1x	16.4x	0.2-0.5	10S,0E		1				
Tin-Plate or Iron Fragments	H70.140.226	59.0x	35.1x	2.9	Cut C			1			
"	H73.140.2	55.7x	27.2x	0.7	Cut A			1			
"	H73.140.29	21.3x	11.7x	2.4	Cut B			1			
"	H70.109.250?	38.7x	15.9x	0.9	5N,20E						1
"	H73.140.214	23.2x	6.1x	1.7	Cut C			1			
"	H70.109.276	24.3x	14.5x	1.6	0N,0E, SE 1/4		1				
"	H73.140.176	12.6	13.9	1.8	Cut C			1			
"	H73.140.101	22.6	18.0	0.9	Cut C			1			
"	H70.109.135	Shattered		2.0 Rust	1.35S, 1.65E		1				
Elongated Metal Sheet	H70.109.164	160.0	54.8	0.5	0N,5E, SW 1/4				1		
Sheet Copper Frag.	H70.109.183	22.3x	10.8x	0.3	3.15S,2.4E		1				
"	H70.109.184	10.7x	5.5x	0.3	2.5S,2.4E		1				
"	H70.109.174	38.7x ca.	22.4x av.	0.3 av.	2.07S,2.7E		1				
Lead Foil	H73.140.130	108.9 x	56.5x	0.3	Cut C			1			
"	H70.109.121	47.5x	45.5x	0.3	3.3 to 3.4S 0.4 to 0.55E		1				

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Lead Foil	H73.140.103	43.9x	27.9x	0.2	Cut C			1			
"	H70.109.120	40.3x	27.5x	0.3	22.9-23.0S 1.1-1.2E		1				
"	H70.109.175	Frags.		0.2	2.8S,2.95E		1				
"	H70.109.124	33.7x	21.7x	0.3	4.6S,1.2 to 1.3E		1				
"	H70.109.227	57.2x	15.5x	0.3	2.8-4.15S, 0.83W		1				
"	H73.140.15	24.5x	11.7x	0.2	Cut A			1			
"	H73.140.12	Frags.		0.2	Cut A			1			
"	H73.140.19	23.3x	16.7x	0.3	Cut A			1			
"	H73.140.105	Frags.		0.3	Cut C			1			
"	H73.140.104	24.8x	16.1x	Fold 2.3	Cut C			1			
"	H73.140.102	35.0x	19.1x	0.3	Cut C			1			
"	H73.140.100	27.8x	12.7x	0.2	Cut C			1			
"	H73.140.99	37.6x	15.7x	0.2	Cut C			1			
LEAD FOIL, GENERAL DISTRIBUTION						__	5	10	__	__	_
Pencil Lead	H70.109.160	8.8x	Diam. 2.0		1.83S,1.62E		1				
Bone Shaving Brush Handle	H73.140.228	18.0	18.0	2.0	Cut A			1			
Knife Inlay	H73.140.118	22.7	10.0	1.0	Cut C			1			
Comb Frag.	H70.109.134	26.8x	5.0	0.8	1.45S,1.45E		1				
"	H70.109.191	27.5x	5.0	0.7	2.64S,2.55E		1				
"	H70.109.140	21.0x	5.0	0.8	1.65S,1.09E		1				
"	H73.140.27	26.1x	4.9	0.6	Cut A			1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Comb Frag.	H73.140.108	21.5x	3.0	0.8	Cut C			1			
"	H70.109.209	14.4x	2.9	0.8	12.75S,2.4E		1				
COMB FRAGMENTS, GENERAL DISTRIBUTION						--	4	2	--	--	-
TRANSPORTATION											
Horseshoe Nail	H70.109.220	61.2 9.3	5.1 6.7	2.8 8.1	17.23S, 1.62E, Out. S. Wall		1				
Leather Fragment	H73.140.21	146.6 x	20.1	4.0	Cut A			1			
"	H73.140.22	61.8x	21.1	3.4	Cut A			1			
"	H73.140.23	72.1x	16.3	3.2	Cut A			1			
"	H73.140.24	33.7x	16.3	3.5	Cut A			1			
"	H73.140.25	Fragments			Cut A			1			
CLOTHING AND ORNAMENTATION											
Cloth Frag.	H73.140.34	Treated			Cut B			1			
"	H73.140.35	Treated			Cut B			1			
Buttons											
Glass Button Type 4	H73.140.113		11.4	4.8	Cut C			1			
Shell Button Type 1	H70.109.253		10.9	1.8	17.87S, 2.27E, Out. S. Wall		1				
Shell Button Type 5	H73.140.112		13.3	3.3	Cut C			1			
Shell Button Type 6	H73.140.18		8.3	1.6	Cut A			1			
Bone Button Type 1	H73.140.110		19.2	2.4	Cut C			1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Bone Button Type 1	H73.140.49		17.0	2.2	Cut B			1			
Bone Button Type 5	H73.140.111		18.0	2.0	Cut C			1			
"Birdcage" Metal Button, Type 4a	H73.140.109		Diam. 12.8	1.2	Cut C			1			
BUTTONS, GENERAL DISTRIBUTION						--	1	7	--	--	-
Beads											
Cornaline d'Aleppo Beads	H73.140.167	1.8	Diam. 3.1		Cut C			1			
"	H73.140.168	1.8	2.7		Cut C			1			
"	H73.140.169	2.6	2.9		Cut C			1			
"	H73.140.170	1.5	2.8		Cut C			1			
Small Blue Glass Beads	Various	0.9-2.2	Diam. 1.4-3.0	Perf. 0.9-1.2	Various		14	46			
Small Green Glass Bead	H73.140.60	1.0	1.6	<1.0	Cut B			1			
Small Pink Glass Bead	H70.109.157	1.3	1.4	<1.0	11.33S, 0.91E		1				
Dark Blue Spherical Bead	H73.140.175	7.5	9.4	2.2	Cut C			1			
Blue Spherical Frag.	H73.140.20	6.0	7.4	1.4?	Cut A			1			
Robin's Egg Blue Spherical Bead	H73.140.171	5.0	5.8?	1.6	Cut C			1			

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Blue-Green Spherical Fragment	H73.140.172	--	--	--	Cut C			1			
			Diam.	Perf							
Blue Glass Facetted Bead	H73.140.173	5.6	5.7	3.1	Cut C			1			
Green Glass Facetted Fragment	H73.140.174	14.0	10.0	>1.0?	Cut C			1			
Clear Glass Facetted Bead	H73.140.17	7.4	8.4	2.6	Cut A			1			
CORNALINE D'ALEPPO BEADS, GENERAL DISTRIBUTION						--	--	4	--	--	-
SMALL (SEED) BEADS, GENERAL DISTRIBUTION						--	15	47	--	--	-
LARGE BEADS, GENERAL DISTRIBUTION						--	--	7	--	--	-
BEADS, GENERAL DISTRIBUTION						__	15	58	--	--	-
			Diam.	Th.							
Ring Stone	H73.140.11		14.5	6.4	Cut A			1			
NATIVE INDUSTRIES											
Projectile Point	H73.140.115	16.5	12.3	3.7	Cut C			1			
Projectile Point	H73.140.47	15.5x	13.7	4.4	Cut B			1			
Quartz Flk. or Core	H70.109.114	58.0	38.8	17.8	6.0N,4.7W	1					
Quartzite Flake	H73.140.114	18.0	17.0	4.5	Cut B			1			
Quartz Core?	H73.140.48	67.7	44.6	26.4	Cut B			1			
Flake?	H70.109.171A	15.3	6.8	2.0	2.84S, 4.32E		1				

ARTIFACT	NUMBER	L	W	TH	GRID LOC	C2G	C2W	RP	FP	C2E	D
Flake?	H70.109.171B	10.1	6.3	1.0	2.84S, 4.32E		1				
"	H73.140.129	15.1	12.3	2.9	Cut C			1			
"	H73.140.44?	13.5	8.7	5.5	Cut B			1			
"	H73.140.45?	12.8	8.3	3.7	Cut B			1			
CHIPPED STONE, GENERAL DISTRIBUTION						1	2	7	--	--	-
DISTRIBUTION BY FUNCTIONAL CATEGORY											
HUNTING						--	14	453	--	--	-
CONSTRUCTION AND BLACKSMITHING						1	37	73	2	5	7
DOMESTIC AND HOUSEHOLD						3	34	32	1	1	1
TRANSPORTATION						--	1	5	--	--	-
RECREATION						--	--	--	--	--	-
CLOTHING AND ORNAMENT						--	16	67	--	--	-
NATIVE INDUSTRIES						1	2	7	--	--	-
TOTALS (763 Items)						5	104	637	3	6	8

TABLE 14

FAUNAL MATERIAL FROM CABIN 2

Species & Unit No.	Element	Portion	R/L	Cut	Tth Mk	Brn	Grid Lo	C2G	C2W	RP	FP	C2E	D
LARGE MAMMALS													
Bison (Bison bison)													
H73.140.C	Caudal Vert.	Comp.	--				Cut C			2			
(fetal)? (bison?)	Thor. Vert.	In 4 Epi-pheses					Cut C			1?			
H73.140.A	Rib	Frags.	--				Cut A			3			
H73.140.C	Femur	Distal	R				Cut C			1			
"	Ulna	Prox.	L				Cut C			1			
"	Ulnar Carpal	Distal	?				Cut C			1			
BISON, GENERAL DISTRIBUTION								--	--	9	--	--	--
Large Unid. Mammals (Bison?)													
H70.109.144C	Spin. Proc.	Distal	--	x		x	ON,OE		1				
H70.109.200	"	Prox.		x			ON,OE		1				
H70.109.229A,D	"	Prox.		x		x	10S,25E	1					
H70.109.214C	"	Distal					15S,OE		1				
H70.109.214D	"	Distal					15S,OE		1				
H71.107.70	Rib	Medial		x			10N,10E	1					

Species & Unit No.	Element	Portion	R/L	Cut	Tth Mk	Brn	Grid Lo	C2G	C2W	RP	FP	C2E	D
Large Unid. Mammals (Bison?)													
H70.109.229J	Rib	Medial		x			10S,25E	1					
H70. 109.228B	"	Medial					0S,5W		1				
H70.109.156B	Scapula	Medial					10S,0E		1				
231A	"	Medial					15S,0E		1				
H70.109.144B	Long B	Epiph				x	0S,0E		1				
Various 7 Numbers	"	Medial		6	2	5	Various	19	47			2	
	"	Ephiph.				1		1	1				
H73.140.A	B.Frags	?	?	12	6	7	Cut A			142			
H73.140.B	"	?	?	8		13	Cut B			130			
H73.140.C	"	?	?	22	8	24	Cut C			445			
TOTALS, LARGE MAMMALS, UNIDENTIFIED (BISON?) 7								23	56	717	--	2	
Large-Med. Mammals, Unid.													
H73.140.C (Deer Size)	Vert.	Frags.					Cut C			1			
H73.140.C (Dog Size)	Rib	Prox.					Cut C			1			
SMALL MAMMALS													
Snowshoe Hare (Lepus americanus)													
H73.140.A	Nasal	?	--				Cut A			1			

Species & Unit No.	Element	Portion	R/L	Cut Mk	Tth Brn	Grid Lo	C2G	C2W	RP	FP	C2E	D
Snowshoe Hare (Lepus americanus)												
H73.140.C	"	Comp.	?			Cut C			1			
H73.140.A	Mand.	Distal	R			Cut A			1			
H73.140.C	"	Prox.	R			Cut C			1			
H73.140.C	Crania Frags.					Cut C			5			
H73.140.A	Vert.	Comp.				Cut A			1			
H73.140.B	Vert.	Comp.				Cut B			1			
H73.140.C	"	"				Cut C			5			
H73.140.C	Ribs	[?]				Cut C			5			
H73.140.C	Inominate	Frag.	?			Cut C			1			
H73.140.C	Scap.	[?]	L			Cut C			1			
H73.140.C	"	[?]	R			Cut C			1			
H73.140.C	"	[?]	R			Cut C			1			
H73.140.C	Femur	Ball	?			Cut C			1			
H73.140.C	Humerus	Frag.	?			Cut C			1			
H73.140.C	Carpal	Frag.	?			Cut C			1			
SNOWSHOE HARE, GENERAL DISTRIBUTION							---	---	28	---	---	---
Muskrat (Ondatra zibethicus)												
H73.140.C	Inominate	Medial	R			Cut C			1			
H73.140.A	Scapula	Prox.	R			Cut A			1			

Species & Unit No.	Element	Portion	R/L	Cut	Tth Mk	Brn	Grid Lo	C2G	C2W	RP	FP	C2E	D
Muskrat (Ondatra zibethicus)													
H73.140.C	Femur	Prox.	R				Cut C			1			
H73.140.C	Femur	Epiph.	R				Cut C			1			
H73.140.A	Humerus	Distal	R				Cut A			1			
Small Mammals Unid. (Snow-shoe Hare?)													
H70.109.213E	Long B.	Medial					10S,5E		1				
H70.109.170A	Long B.	Medial	[?] R				ON,5W		1				
H70.109.156A	"	"					10S,0E		1				
Slightly Larger													
H70.109.178.1	Occip. Condyle	Distal	L				ON,0E, SE 1/4		1				
Unid.													
H70.109.118.1	Scapula	Medial					ON,15E		1				
H73.140.A	Bone Frags.	?	?				Cut A			3			
H73.140.B	"	?	?				Cut B			12			
H73.140.C	"	?	?				Cut C			23			
TOTAL, SMALL MAMMALS, UNIDENTIFIED								--	5	39	--	--	-
BIRDS													
Canada Goose (Branta canadensis)													
H73.140.C	Vert.	Comp.	--				Cut C			1			

Species & Unit No.	Element	Portion	R/L	Cut Mk	Tth Mk	Brn Mk	Grid Lo	C2G	C2W	RP	FP	C2E	D
Canada Goose (Branta canadensis)													
H73.140.C	Furcula or Clav	Near. Comp.					Cut C			1			
Snow Goose (Chen caerulescens)													
H70.109.213A	Humerus	Prox.	R				10S,5E & 10E		1				
Sharp-Tailed Grouse (Pediocetes phasianellus) (Possible)													
H73.140.B	Carina of Sternum	Distal					Cut B			1			
H73.140.B	Femur	Distal	?				Cut B			1			
Unid. Bird, ca. Yellow-Headed Blackbird Size (Order Passeriformes, Family Icteridae)													
H70.109.281D	Tarsal	Comp.					ON,25E	1					
Unid. Birds													
H73.140.A	Frag.	?	?				Cut A			1			
H73.140.C	Frags.	?	?				Cut C			25			
TOTAL BIRDS								1	1	30	--	--	-

Species & Unit No.	Element	Portion	R/L	Cut Mk	Tth	Brn	Grid Lo	C2G	C2W	RP	FP	C2E	D
AMPHIBIANS													
Wood Frog?													
H70.109.214	Scapula	Prox.	R				15S,0E		1				
TOTAL BONE DISTRIBUTION								23	63	828	--	2	7

TABLE 15

DISTRIBUTION OF SHOT SIZES, CABIN 2

Distribution by .05 mm Increments						Clustering	
Size	No.	Size	No.	Size	No	Size Range	No.
2.70	1	3.45	0	4.20	15	2.70-2.80	7
2.75	2	3.50	3	4.25	1	2.85-2.95	15
2.80	4	3.55	0	4.30	9	3.00-3.10	119
2.85	4	3.60	1	4.35	1	3.15-3.25	173
2.90	8	3.65	0	4.40	3	3.30-3.40	61
2.95	3	3.70	2	4.45	2	3.45-355	3
3.00	32	3.75	0	4.50	3	3.60-3.70	3
3.05	21	3.80	4	4.55	4	3.75-3.85	4
3.10	66	3.85	0	4.60	5	3.90-4.00	2
3.15	26	3.90	0	4.65	2	4.05-4.15	9
3.20	105	3.95	0	4.70	3	4.20-4.30	25
3.25	42	4.00	2	4.75	0	4.35-4.45	6
3.30	51	4.05	1	4.80	1	4.50-4.60	12
3.35	4	4.10	7			4.65-4.75	5
3.40	6	4.15	1	Total	445	4.80-4.90	1
						Total Shot	445*

* Note that total varies slightly from figure in text.

TABLE 16

DISTRIBUTION OF SHOT BY STANDARD SIZES, CABIN 2

Montreal Rolling Mill Co. Sizes (Greener 1910; Logan 1959			
Size	Diameter (mm)	Pellets/Ounce	Number
A			0
BBB	4.83	44	10
BB	4.57	49	13
B	4.32	58	33
1	4.06	69	3
			7
2	3.81	82	13
3	3.56	98	
4	3.30	121	290
5	3.05	166	72
6	2.79	209	3
7	2.54	278	0
8	2.29	375	0
9			0
		Total Shot	444

TABLE 17

RANKING OF FUNCTIONAL CATEGORIES,
CABIN 1 AND CABIN 2

RANK	CABIN 1	CABIN 2	CABIN 1 AND 2	NUMBERS
1	Construction and Blacksmithing	Hunting	Hunting	470
2	Domestic, House-hold Activities	Construction and Blacksmithing	Construction and Blacksmithing	211
3	Clothing and Ornament	Clothing and Ornament	Domestic, House-hold Activities	129
4	Hunting	Domestic House-hold Activities	Clothing and Ornament	95
5	Transportation *	Native Industries	Native Industries	11
6	Recreation *	Transportation	Transportation	8
7	Native Industries	Recreation	Recreation	2
			TOTAL	926

* Numbers are equal.

TABLE 18

COMPARISON OF FREQUENCY OF CERTAIN COPELAND PATTERNS IN NINETEENTH CENTURY WESTERN CANADIAN ARCHAEOLOGICAL SITES

Sites

	Buffalo Lake, ca. 1872 to 1878	Cypress Hills Cabins B and E, ca. 1840 to 1885	Cypress Hills Cabin A, ca. 1840 to 1885	Lac La Biche, ca. 1870's	Rocky Mountain House II, 1835 to 1861	Rocky Mountain House III, 1868 to 1875	Fort Victoria (Alberta), 1864 to 1897	Fort Pitt, 1829 to 1885	Fort Carlton, 1810 to 1885	Battleford, 1876 to 1885	Last Mountain House, ca. 1869 to 1871	Lower Fort Garry, 1830 to 1911	Upper Fort Garry, 1835 to 1892	Number of Sites where found	Percentage	Ranking
Alhambra	x				x			x	x			x	x	6	46	5
Beverly	x											x		2	15	9
British Flowers	x				x		x	x	x			x	x	7	54	4
B 700	x				x		x	x	x		x	x	x	8	62	3
B772	x	x	x	x	x		x	x	x	x	x	x	x	12	92	1
Continental Views	x			x	x	x	x	x	x	x	x	x	x	11	85	2
Corinthian	x							x						2	5	9

Sites

	Buffalo Lake, ca. 1872 to 1878	Cypress Hills Cabins B and E, ca. 1840 to 1885	Cypress Hills Cabin A, ca. 1840 to 1885	Lac La Biche, ca. 1870's	Rocky Mountain House II, 1835 to 1861	Rocky Mountain House III, 1868 to 1875	Fort Victoria (Alberta), 1864 to 1897	Fort Pitt, 1829 to 1885	Fort Carlton, 1810 to 1885	Battleford, 1876 to 1885	Last Mountain House, ca. 1869 to 1871	Lower Fort Garry, 1830 to 1911	Upper Fort Garry, 1835 to 1892	Number of Sites where found	Percentage	Ranking
Flower Vase	x	x	x	x		x	x	x	x	x	x	x	x	12	92	1
Grapevine	x					x	x	x	x					5	38	6
Honeysuckle	x			x		x	x	x	x	x		x		8	62	3
Ivy	x	x		x		x	x	x	x	x	x	x	x	11	85	2
Meander	x	x							x					3	23	8
Osborne	x							x				x		3	23	8
Pagoda	x		x	x			x	x	x	x		x		8	62	3
Pergola	x						x	x	x					4	31	7
Ruins	x	x				x	x		x		x	x	x	8	62	3

Sites

	Buffalo Lake, ca. 1872 to 1878	Cypress Hills Cabins B and E, ca. 1840 to 1885	Cypress Hills Cabin A, ca. 1840 to 1885	Lac La Biche, ca. 1870's	Rocky Mountain House II, 1835 to 1861	Rocky Mountain House III, 1868 to 1875	Fort Victoria (Alberta), 1864 to 1897	Fort Pitt, 1829 to 1885	Fort Carlton, 1810 to 1885	Battleford, 1876 to 1885	Last Mountain House, ca. 1869 to 1871	Lower Fort Garry, 1830 to 1911	Upper Fort Garry, 1835 to 1892	Number of Sites where found	Percentage	Ranking
Turco	x						x	x	x					4	31	7
Violet	x								x			x		3	23	8
No. of Similar Patterns	18	5	3	6	5	6	12	14	15	6	6	13	8			
Comparative Frequency in per cent	100	28	17	33	28	33	67	78	83	33	33	72	44			

Page	Para.*	Line	Present Reading	Correction
iii	2	5	remains	remains.
iii	4	5	Lynn	Lynne
iii	5	1	archives	Archives
iii	5	11	preceeded	preceded
7	1	6	three-dimensions	three dimensions
7	4	2	Cultures	Culture
10	4	10	dictated.	dictated
13	4	5	St.	Ste.
16	6	7	Red River	Red Deer River
17	5	4	sovereignity	sovereignty
20	1	5	upper	Upper
20	2	5	Moise	Moïse
21	5	11	freeman's	freemen's
23	6	6	Red River	Red Deer River
25	2	2	freeman	freemen
31	4	6	Saskatchewan.	Saskatchewan
33	7	2	Councellor	Counsellor
33	8	9	descrlbe	describe
34	1	1	interspered	interspersed
38	2	3	Freeman	Freemen
42	Table 4	2	98	78
42	Table 4	8	No. 309, below, should be	at end of this line.
48	3	2	Red River	Red Deer River
54	4	8	Selby Smith	Selby-Smith
61	3	1	therfore	therefore
80	1	3	Horon	Horan
80	6	5	as whole	as a whole
93	3	2	halfway	half way
95	Paragraphs 1-2		Remove space between paragraphs.	
96	1	11	(Finlayson 1972:52-53)	[Finlayson 1972:52-53]
102	4	5	172	175
107	2	6	3/4	3/4.
113	5	3	flourescent	florescent
115	1	10	worn	woven
121	3	4	(45.72)	(45.72 m)
135	3	1	40f)	40f).
142	2	6	western	eastern
149	5	1	Chapter III	Chapter IV
176	5	3	a many	as many
177	2	9	137)	137).
178	1	2	page 171	page 174
187	7	2	is 1.24 feet	was 1.24 feet
192	7	3	surfaces	surfaces.
194	1	5	designation	designation.
196	3	4	oxidized	oxidized.
207	6	1	button, is	button is
215	5	1	Hill	Hills

* Partial paragraphs are counted as number one.
Major headings are not counted.

Page	Para.	Line	Present Reading	Correction
220	7	1	north	south
227	3	5	numbers	number
228	6	4	Lynn	Lynne
228	6	9	1979	1979a
228	6	12	1979	1979a
231	6	2	historic	historical
231	6	6	historic	historical
235	9	4	Provinical	Provincial
236	6	3	London	London.
238	9	1	Geneologies	Genealogies
240	4	3	Winnipeg	Winnipeg.
243	4	1	1871	1871.
246	1	2	Superintendant	Superintendent
247	1	3	Cultura	Culture
247	10	1	Ste	Ste.
248	6	3	Enironment	Environment
249	2	4	Ottawa	Ottawa.
250	12	5	Edmonton	Edmonton.
253	3	2	Jeffery S. Murry	Jeffrey S. Murray
253	3	5	Season	Seasons
255	2	2	Gary	Garry
287	1	3	Tupe	Type
308	b	--	knife inlay does not appear in photograph	
322	g	--	cup sherd	cup sherds
334	5	1	meassurements	measurements
336	3	2	H75.100.600	H75.101.600
336	5	1	H74.101	H75.101
336	7	1	H76,89.263	H76.89.263
342	1	9	constrasts	contrasts
343	2	11	parallelled	paralleled
347	3	5	horzontal	horizontal
347	4	15	1978)	1978).
348	4	11	1981: 193	1981:193
363	bottom line		2 - x	3.87 2 - x
369 ff.	Incomplete measurements of fragments are indicated by x.			
370	--	6	70S,14.2E	7.0S,14.2E
370	---	18	15.6E	15.7E
370	--	29	ON,5E	10S,10E
371	--	30	Cut Nail	Cut Nail,
375	--	6	Domestic, Household	Household, etc.
379	--	13	"Birdcage	"Birdcage"
379	--	22	Outer Band refers to width measurement.	
380	--	11	Domestic and Household	Household, etc.
392	--	26	Domestic and Household	Household, etc.
394	--	1	H73.14.107	H73.140.107
394	--	9	Out. S. Wall	Out. N. Wall
394	--	26	H70.107.277	H70.109.277
400	--	10	Domestic and Household	Household, etc.
402	--	9	Number 7, below, should appear under D	
402	--	16	Number 7, below, should appear under D	
404	--	24	39	38
408	--	3	Domestic, Household	Household, etc.

PROVINCIAL MUSEUM OF ALBERTA HUMAN HISTORY OCCASIONAL PAPERS

1. Faunal remains from Fort White Earth, NWCo. (1810-1813). Prepared by Isobel Hurlburt, pp. 107, 1977.
2. The Boss Hill Site (FdPe 4) Locality 2: Pre-Archaic Manifestations in The Parkland of Central Alberta, Canada. Prepared by Maurice F.V. Doll, pp. 225, 1982.
3. Archaeological Excavations at the Probable Site of the First Fort Edmonton or Fort Augustus, 1795 to Early 1800s. Prepared by Robert S. Kidd, pp. 149, 1987.
4. The Buffalo Lake Métis Site: A Late Nineteenth Century Settlement in the Parkland of Central Alberta. Prepared by Maurice F.V. Doll, Robert S. Kidd, and John P. Day, pp. 411, 1988.