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THE FORMATION AND MAINTENANCE OF THE CANADA - UNITED STATES BORDER IN THE ST. MARY'S RIVER AND LAKE HURON BORDERLANDS, 1780 - 1860

VOLUME I

By

Paul Andrew Demers

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ABSTRACT

THE FORMATION AND MAINTENANCE OF THE CANADA - UNITED STATES BORDER IN THE ST. MARY'S RIVER AND LAKE HURON BORDERLANDS, 1780 - 1860

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The purpose of this study is to investigate the formation and maintenance of the Canada-U.S. border in the St. Mary's River and Lake Huron borderlands. The temporal focus spans the border negotiations in the late 1770s and early 1780s, through the resolution of the major border disputes and emergence of a nascent Great Lakes economy in the 1850s. The study examines the proposition that processes of political border formation and maintenance in this region, such as cross-border contact and permeability, can be understood via a series of non-directional stages of border relations. The model of border formation developed by Oscar Martinez was employed to determine whether Canada-U.S. border relations in the region followed patterned stages of interaction. This model is unique because it posits both developmental stages of political border formation and corresponding sets of relations among border social/ethnic groups. The applicability of this model was tested initially by qualitative analysis of primary source accounts of border relations during this time frame. The results clearly demonstrated that periods of regional history could be ascribed to the Alienation and Coexistent Stages. In fact, vacillation between these two stages aptly characterized the sequence of occupation for the region prior to the middle of the nineteenth century.

The archaeological data set utilized in this study was composed of eight components from sites along the Canada-U.S. border in the Straits of Mackinac, St. Mary's River, and

Lake Huron Basin region. The archaeological data from sites in this region was used to test how well the model expectations of cross-border social relations fit with their material expression on these sites. A series of specific hypotheses was generated for frequencies of military and domestic items for each stage. Logistical regression analysis was used to model the relationship between observed and expected frequencies of diagnostic materials, while chi-square analysis was employed to test the significance of these relationships.

Archaeologically derived patterns revealed a growing consciousness among manufacturers toward their products, formal identification of such products, and the expansion of markets. In fact, while some industries embraced the expanding regional and international cross-border markets, others either did not flourish, or chose not to participate in the atmosphere of this newly emerging market capitalism. Further, issues of nationalism and its material expression did not supersede the market forces of supply, costs, and personal preferences.

The power of this approach lies in its applicability for the study of border situations worldwide. It facilitates the identification of diachronic patterns of cross-border contact and permeability, while incorporating more specific regional patterns and chronologies. Clearly, this study has shown that processes of border formation and maintenance are not simply a matter of idiosyncratic historical accidents. Rather, they can be understood as a series of general behavioral regularities that impact social relations along borders in a predictable fashion.

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To My Three Wise Men:

Bucky Demers, Maurice "Rocket" Richard, and Tommy Douglas

Dedication, Passion, and Measure

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Chapter One - Introduction

The purpose of this study is to investigate the formation and maintenance of the Canada-U.S. border in the St. Mary's River and Lake Huron borderlands. The temporal focus spans the border negotiations in the late 1770s and early 1780s, through the resolution of the major border disputes and emergence of a nascent Great Lakes economy in the 1850s. The study examines the proposition that processes of border formation and maintenance in this region, such as cross-border contact and permeability, can be understood via a series of non-directional stages of border relations. The model of border formation developed by Oscar Martinez was employed to determine whether Canada-U.S. border relations in the region followed patterns of interaction similar to those stages identified for the U.S.-Mexico border. [1]

The Martinez model has several advantages over other models of border classification. This model is relatively unique because it posits both developmental stages of political border formation and corresponding sets of relations among border social/ethnic groups. Hence the material culture components derived through archaeology can fit easily into its relational framework. The Martinez model attempts to derive generalities of cross-border contact despite worldwide variations in border area size, politics, religion, ethnicity and language. The model is composed of four stages of border relations referred to as "paradigms" of border interaction: alienated, co-existent, interdependent, and integrated. This model will be presented in detail in chapter two.

In order to determine whether these model stages and corresponding sets of social relations were appropriate for this study, primary and secondary documentary sources on

[1] Martinez 1994, 1-15.

the occupation of the region were examined to evaluate the nature of cross-border interaction. The result was that specific time periods in the region clearly represented the stages of alienation or coexistence. Hence, the archaeological components of sites occupied during those time periods were assigned to either the alienation or coexistent stage. Prior to the late nineteenth century, border relations never exhibited the intense levels of interaction necessary for inclusion into the interdependent stage or integrated stages of this model as defined by Martinez.

The archaeological data set utilized in this study was composed of eight components from sites along the Canada-U.S. border in the Straits of Mackinac, St. Mary's River, and Lake Huron Basin region. These components are presented in Table 1 below. All components have been attributed to the coexistent stage, and further subdivided into pre and post War of 1812 periods for analytical and testing purposes.

Table 1: Archaeological Components and Dates

Prewar Components	
Storehouse Site 1: Mackinac Island, Michigan	U.S. (1796-1812)
Fort St. Joseph 1: St. Joseph Island, Ontario	British (1796-1812)
Wooden Officers' Quarters: Mackinac Island, Michigan	U.S. (1802-1812)
Postwar Components	
Fort Drummond: Drummond Island, Michigan	British (1815-1828)
Rains Point: St. Joseph Island, Ontario	British (1837-1853)
Fort Gratiot: Port Huron, Michigan	U.S. (1814-1870's)
Storehouse Site 2: Mackinac Island, Michigan	U.S. (1815-1827)
Fort Brady: Sault Ste. Marie, Michigan	U.S. (1822-1870's)

Military sites were chosen for this study because they were the largest and most highly populated historical site type in the region during this time period. Further, these military sites have been studied archaeologically, and well documented historically by primary and secondary sources. In addition, using a single site type cuts down on possible sources of variation such as functionality. These specific contexts were chosen because they were relatively undisturbed and their matrices were not contaminated with fill representing earlier stages of site occupation. Unfortunately, given the magnitude of construction and subsequent disturbances on military sites, very few contexts met the above criteria. The components from Forts Brady, Drummond and Gratiot were excavated under the direction of Dr. Charles E. Cleland, Professor of Anthropology at Michigan State University, in cooperation with the Michigan State University Museum.

This research has been as part of a long-term project designed to interrogate the nature of the Canada-U.S. border in the region. The objectives of this project were to explore: 1) the ways in which the border affected the distribution of material culture across the various social groups; 2) to understand the changing relationship between borders and the definition of social groups; and 3) how political borders affect social boundaries.[2] The author served as field supervisor on the Fort Brady excavation for one field season, and supervised the survey and excavations at Fort Drummond Site for four field seasons. The author's report on the archaeology of Fort Drummond is presented in Appendix 1.

In terms of testing the model with archaeological material, it was crucial to identify a material correlate indicative of levels of cross-border interaction. The material correlate that represents cross-border interaction is an item diagnostic of cross-border manufacture.

[2] Cleland 1995.

While it might be impossible to determine the precise mechanisms for such cross-border contact, the presence of material culture diagnostic of cross-border manufacture indicates some form of direct or indirect cross-border contact. Diagnostic cross-border artifacts are those that could be attributed directly to either British/Canadian or U.S. origin, on the basis of attributes such as maker's marks or insignia, diagnostic of such origins. These diagnostic attributes of national origin fell into one of two categories: military variables or domestic variables.

The bridging argument presented here is that there is a direct relationship between levels of cross-border interaction and frequencies of cross-border materials present in archaeological assemblages. The general material expectation is that as levels of cross-border interaction increase, there is a concomitant increase in the frequencies of cross-border materials within site assemblages. The archaeological data from sites in this region was used to test how well the model expectations of cross-border social relations fit with their material expression on these sites. Originally, a series of specific hypotheses was generated for frequencies of military and domestic items for each stage. However, the alienation stage pattern of regional dominance by a single center, to the exclusion of cross-border sites, precluded hypotheses on the presence of cross-border materials. Hence, only the coexistent stage could be tested. Three sets of hypotheses were generated to examine the significance of frequencies of cross-border materials for both the prewar and post war phases of this stage. Logistical regression analysis was used to model the relationship between observed and expected frequencies of diagnostic materials, while chi-square analysis was employed to test the significance of these relationships.

For the purposes of this study, it is important to define several key terms in order to address the larger theoretical constructs in a clear fashion. While the terms *borders*, *boundaries*, and *frontiers* have become ubiquitous spatial metaphors in popular and academic literature, there is a danger that they can be employed interchangeably and uncritically.[3] Hence, it is essential to define and differentiate between these processes and their relevance to the issues presented in this study.[4]

Borders

While the focus of this study is the modern nation-state, it is important to note that in a pre-state or non-state context, borders can be less fixed and more transient in nature. These borders often correspond to the geographical extent of group influence and control over a territory. A more detailed discussion of prehistoric and non-state border concepts is contained in chapter two. Within the context of the modern state, a border will be defined as an artificial line representing the limits of state jurisdiction and sovereignty.[5] In this case, the political border marked the territorial limits of the United States and British North America (Canada). It is a political separation represented by fixed lines on maps. By the Treaty of Paris in 1783, the border line for this region was drawn roughly through the center of the Great Lakes, excluding Lake Michigan which remained entirely in U.S. territory.

Indeed, the term "political" becomes implicit in the concept of border. These limits are an interactive part of the state system, and may be demarcated in a variety of forms. In fact, since the entire Canada-U.S. border in this region was drawn through waterways,

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[3] Silber 1995.
[4] Minghi 1963; Adejuyigbe 1989; Rumley and Minghi (eds.) 1991, 2-3.
[5] Glassner 1993, 72.

a series of military installations were constructed by both sides at strategic points. These installations came to delineate the respective sides of the border.

Borders may be instituted to separate states for defensive, economic, or administrative purposes, as well as to separate groups based on cultural differences such as language or religion. In the case of the Canada-U.S. border, a series of ideological differences over colonial status and ties with Great Britain spurred the founding of the United States as a new sovereign state.

A nation-state may impose borders to its territory, but friction may occur if a bordering state does not accept the delineation. Such a case occurred in this region after 1783, when the British continued to occupy Great Lakes forts in U.S. territory. The resultant friction was characteristic of a stage of alienation as described in the Martinez model. Borders may also be imposed upon states by third parties, especially in the case of imperial powers such as the British Empire negotiating borders for her colonies in North America.

A border usually takes the form of a vertical plane, illustrating the limits of jurisdiction and sovereignty, from subsoil through the land or water surface, and into airspace.[6] Degrees of permeability and contact along borders can vary tremendously depending on a variety of political and social circumstances. While borders can be sources of friction, they can also be reminders of acknowledged and accepted differences between groups.[7] In this way, the Martinez model provides a framework for categorizing the nature of cross-border relations, and charting subsequent changes and ramifications for such relations.

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[6] Ibid., 75.
[7] Rumley and Minghi (eds.) 1991, 1-2.

Frontiers

Frontiers can be understood as a transitory stage of settlement that exists at the physical edges of settlement systems. They usually depend on energy, materials, and information links to those systems.[8] A frontier is usually located outside the settled, integrated region of a political unit and into which expansion takes place. While frontiers and borders may share various features, it is crucial to underscore the differences between these two processes. Unlike borders, frontiers do not necessarily separate two or more nation-states. Frontiers are also an historic process measuring the relative degree of settlement and economic exploitation in a region. Conversely, borders are often situated without regard to the nature of demographic or economic development and are not a reliable gauge of such processes. While both witness cultural interaction, the absence or weakness of formal political structures on frontiers tends to blur those distinctions, such as delineation of territory and sovereignty, that borders are designed to impose on a region. In sum, frontiers are a transitional phase of settlement and development with few formal political structures in place. They can be difficult to delineate, whereas borders tend to be more precisely defined, and separate the formal structures of nation-states.

Boundaries

Perhaps the most complex and elusive social process is that of boundaries. For the purposes of this study, boundaries will be defined as the limits or barriers that differentiate social groups. Contrary to the use of the term "boundary" in the discipline of geography, the anthropological use of this term involves statuses that determine group membership, and the barriers which influence the nature of contact between various

[8] Hardesty 1984, xx.

groups. Social boundaries are ubiquitous features within all societies, and may or may not involve a spatial or territorial component. The setting of boundaries is a means by which groups identify themselves, and in turn, are identified by others. In border and frontier situations, boundaries can to be blurred, as social units are often more fluid, overlapping, and crosscutting.[9] This study addresses social boundaries through the evaluation of cross-border contact and permeability on the level of nation-states, loci along the border, and for specific individuals when possible.

Any discussion of social group differentiation must consider the problems associated with trying to know the thoughts of past peoples. Cordell and Yannie criticized studies that have focused too closely on the normative aspects of Barth's concept of the unity of cultural forms.[10] Indeed, Barth clearly underscored the "frequently quite complex organization of behavior" and "continual expression and validation" involved with social group boundaries.[11] Ethnic groups themselves are diverse, overlapping, and sometimes factional. They often crosscut traditional stereotypical colonial-indigenous boundaries. Like the state, the border itself is a metaphor for competing perspectives and agenda for a variety of social groups within and beyond the borderlands. Many of these groups may have inhabited the border area for a considerable period of time and it cannot be assumed that they are simply passive recipients in a core-periphery relationship with the state. One must identify the myriad groups participating in border issues, and understand how each of the groups define themselves and their boundaries, and in turn how these groups are viewed by others. Certainly, among such groups, a national identity is a

[9] Lightfoot and Martinez 1995.
[10] Cordell and Yannie 1991, 97.
[11] Barth (ed.) 1969, 15.

legitimate form of group ethnicity that can signal important boundaries for inclusion and interaction with other groups. While Anderson has proposed several aspects of a collective "imagined" community or national identity, such ideas nevertheless can become powerful and cohesive social forces.[12]

Within academia, another set of forces propelling border studies into prominence challenges exclusive definitions of culture and its constituents, and advocates strategies to "deterritiorialize" culture[13] and to "denaturalize and decenter scholarship" in order to eliminate nationalist issues of "self" and "other."[14] Moreover, border studies have experienced a renaissance through a variety of explorations emphasizing the individual voices of borderlanders, as well as issues of morality and social justice involved in cross-border contact.[15]

To this end, a variety of techniques including ethnohistory, and foci such as postcolonial, hybridity, diasporia, subaltern, and critical international and migration studies, have sought out other voices to elucidate how national or imperial policies affected borders and the construction of various identities. Such techniques challenge a reconstruction of the past solely from an intellectual landscape of "Euro-modernity". In addition, such voices facilitate multiple versions of history within a society and uncover the politics of reconstructing the past.

Yet, simple deconstruction of state agenda and exclusive emphasis on individuals can obscure the complexities of state involvement and competing perspectives in border issues. Indeed, Barber has uncovered the irony that "the two axial forces of our age--

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[12] Anderson 1991.
[13] Michaelsen and Johnson 1997, 11.
[14] Desmond and Dominguez 1996.
[15] See Anzaldúa 1987; Rosaldo 1993; Behar 1993; Hann and Bellér-Hann 1998.

tribalism and globalism--clash at every point" as simultaneous and conflicting processes in the evolution of modern states.[16] Contrary to the supposition of the erosion of the modern state, many scholars including Dicken,[17] Harrop,[18] and Castañeda[19] have underscored the increasing role of the state in domestic and world affairs. Regardless, there is little doubt that a series of new and often simultaneously contradictory articulations exist between local, national, and global orders.[20] Indeed, Lightfoot and Martinez have discussed a form of "boundary arbitration" whereby people are more likely to interact with proximal yet foreign groups more often than more geographically distant members of their own groups.[21] Such tensions are most keenly felt, and thus theoretically observable, along borders. In this way, social or ethnic boundaries can transcend borders.

Certainly the state is but one social force exerting pressure and influence in order to advance an agenda along its borders. Yet, the internal complexity of its various levels and the idiosyncrasies of the officials representing the state, provide ample opportunities for the development of agenda which may run counter to the official state policy. Hence, the state itself cannot be considered as a monolith of consistent, coordinated, or well-executed policies.

Within the last two decades, border studies have experienced a powerful resurgence within academia, popular literature, and the media. Certainly, this renewed interest has been sparked by a number of world events including the subsequent social reorganization and displacement these phenomena have unleashed at the end of the twentieth century.

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[16] Barber 1992.
[17] Dicken 1992.
[18] Harrop 1992.
[19] Castañeda 1995.

Yet, political instability, changing economic patterns, and challenges to conceptions of identity and culture are by no means a new phenomenon. Borders, as the limits of state sovereignty and legal authority, are constantly redrawn to keep pace with the ever-changing sets of relationships between nation-states.

The political vacuum and chaos left in the wake of the former Soviet Union and the breakup of relict European empires in Africa and Asia have not only caused border lines to be redrawn but have reintroduced terms such as "refugee", "war crime", and "genocide" into the popular lexicon. Place names such as Bosnia, Chiapas, Kosovo, Rwanda, and the West Bank, and social groups such as Kurds, Palestinians, Hutus and Tutsis, Quebecois, and Zapatistas have all become synonymous with ethnic and territorial struggles and attempts to redefine power relationships symbolized by borders. These associations underscore the critical link between social group identity and a group's perceived geographic territory, often expressed as "homelands".

Political borders have also come under intense scrutiny vis-à-vis new economic patterns heralded by the emergence of the "global economy" and speculation over the "New World Order" of socioeconomic relations. Regional trading blocs such as the European Union and NAFTA seem to strive for socioeconomic integration and the erosion of individual state policy, calling into question the primacy of the modern state as the organ of social, political and economic organization. Hobsbawm has even suggested that the pursuit of capital accumulation and the administration of national territory are not

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[20] Stokes 1998.
[21] Lightfoot and Martinez, 1995.

compatible, leading to inevitable conflicts and a redefinition of political and economic relations for the private versus public sector.[22]

This study of political border formation and maintenance provides several methodological and theoretical contributions to the field of anthropology. Perhaps the most important contribution of this study is designing and testing a set of archaeological and documentary methods for investigating the processes of border formation and maintenance. The utility of this approach is highlighted by the ability to apply it to any border situation worldwide, and subsequently refine it, in order to reflect the generalities of border situations while incorporating more specific regional patterns. In this manner, this approach addresses the call for "re-integrating a structural approach which looks at individual decisions, cultural choices, a*nd* structural constraint"[23] This desire for multiple foci in border research was echoed by Donnan and Wilson who posit an "anthropology of borders" which:

> Simultaneously explores the cultural permeability of borders, the adaptability of border peoples in their attempts ideologically to construct political divisions, and the rigidity of some states in their efforts to control the cultural fields which transcend their borders. Anthropologists thus study the social and economic forces, which demand that a variety of political and cultural boundaries be constructed and crossed in the everyday lives of border people.[24]

Similar to the approach taken by Martinez, these authors also highlight the diachronic nature of social processes associated with border maintenance. The operating assumption is that even though a border situation might be considered peaceful and stable at one point in time, degrees of permeability and suites of identities are constantly negotiated over time.

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[22] Hobsbawm 1987.
[23] Green 1997.
[24] Wilson and Donnan 1998.

Archaeology is in a unique position to elucidate the nature of such changes. Despite the complexities of material flow and attribution, material culture is an active symbol in communicating forms of identity. Construction techniques, food ways, symbolic representations and the cultural values placed upon them, can indicate affiliations, social relations, and alliances.[25] Archaeology can generate data derived from material culture to assess the nature of interaction across borders in a diachronic fashion. On a regional scale, settlement pattern data helps to demonstrate how groups organized over space, and to reconstruct the dynamic social processes of border formation and maintenance. The paradox of border studies is that while nation-states have delineated borders on every continent, the vast number of historical sequences and events discourages many scholars from evaluating this behavioral regularity. As an independent data source, archaeology can be used to generate and test hypotheses on the behavioral regularities that underlie border formation and development.

This study has generated an archaeological and documentary approach to the study of borders. Specifically, it was applied to address the nature of the formation and maintenance of the Canada-U.S. border from the late eighteenth through middle nineteenth century, with an emphasis on cross-border contact. Firstly, the Martinez model was evaluated for its applicability examining the documentary record of the region. Having found a close fit between the levels of interaction described in the model and the regional historical record, time periods were assigned to the alienation and coexistent stages.

[25] Lightfoot and Martinez 1995.

The material correlate for these levels of interaction was the cross-border artifact. A series of material expectations and specific hypotheses were generated to assess how closely between these stages of interaction and their material expression. The value of this approach is that it can be employed and refined for border studies worldwide. Diachronically, it can illuminate changes in border relations on national, local, and in some cases, for individuals. Further, it can incorporate and give a voice to all groups that inhabited the borderlands. Its regional focus can have the effect of reducing nationalist interpretations by thoroughly examining cross-border bodies of literature, thus eliminating the subtle tendency for the border to function as an intellectual boundary.

Chapter two of this study examines various schema developed by scholars to address patterns of border development and maintenance, assessing various strengths and weaknesses and potential applicability for this study. Chapter three presents the macro-regional and subregional historical background, discussing the development of political borders while emphasizing interplay between national, local and corporate agenda. Chapter four presents the documentary evaluation of the Martinez model, the material expectations for its applicable stages, and the statistical methods for hypotheses testing. Chapter five reports on the results of the documentary evaluation and statistical testing. In addition, there is an examination of test results and their implications in light of the various industrial and market forces that influenced the form and distribution of cross-border material culture. Chapter six examines the results of this study and its potential contributions to an overall anthropology of borders.

Chapter Two - Theoretical Background

This chapter examines the various goals and classification systems developed through border studies in various disciplines. The purpose of this chapter is to determine to the extent to which various works have addressed the central themes of this study. Particular emphasis will be placed on the issues of universal applicability; patterns of cross-border contact over time; and multiple foci of national, local, and individual levels. In addition the latter portion of this chapter examines the use of archaeological and material culture evidence as an independent data source for assessing the material expression of boundaries and borders.

Certainly, almost every border situation past or present, in a pre-state or modern state context, has received at least some academic attention. Prescott has provided an extensive discussion on the origins and development of border studies.[1] Indeed, the author cites the late nineteenth century perspective of Lord Curzon of Kedleston, Viceroy of India, in what has become a mantra of border studies: "Frontiers are indeed the razor's edge on which hang suspended the modern issues of war and peace."[2]

Border classification models form the basis by which patterns of cross-border interaction are described and interpreted. The extent to which a model can be applied to border situations worldwide rests with its ability to pose sets of border relations and their evolution, as well as incorporating multiple foci and diverse data sets. The following models will be assessed for their ability to meet these intellectual specifications.

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[1] Prescott 1987.
[2] Curzon, 1907, 7 (cited in Prescott 1987, 5).

Biological Analogies

Among the earliest works discussed by Prescott is that of Ratzel, who in 1897 used a biological analogy of growth, stasis, and decay to project that larger organisms (i.e. nation-states) would eventually absorb smaller ones.[3] Ratzel also held that political balance between countries was dependent on the characteristics of the borders between them.[4]

In the late 1920s, Haushofer ushered in the concept of "geopolitik", a school of political geography developed to emphasize the role of geography in creating policies to return Germany to its former military glory. Similar to the work of Ratzel, Haushofer used a border classification of attack, defense, growth, and decay.[5] Semple echoed this organic interpretation and suggested borders were prone to stress from both cultural and environmental factors.[6]

The generalized nature of these early organic models of border classification would have allowed a limited form of applicability. Yet, the deterministic emphasis on conflict precluded the study of border areas characterized by sustained peaceful relations. Further, these conflict-oriented models focused on national issues such as war, without considering the complexities local cross-border relations, especially in wartime.

Borders As Barometers of Social Relations

Prescott noted that since few borders have remained unaltered through time, they are frequently viewed as barometers of international relations and the causes of war. By the late 1930s, Ancel, and Spykman and Rollins had advocated the concept of borders as

[3] Ratzel 1897.
[4] Prescott 1987, 9.
[5] Haushofer 1927.
[6] Semple 1911.

political barometers or indicators.[7] Yet, this concept which attained its zenith prior to World War II, had been criticized because of numerous examples illustrating that changes in the balance of power do not necessarily result in changes in borders. Conversely, these authors also did not consider changes in border location as a result of factors other than the relative strength of nations.[8] Numerous later works have criticized the focus on the wartime border situations and their aftermath. Prescott noted that in times of international tension or war, such studies occur with a much higher frequency than in peacetime.[9]

Mechanical Models of Border Development

By the end of World War I, a series of unilinear evolutionary approaches to border studies began to challenge the concept of borders as political barometers. These tripartite schemes emphasized the mechanics of demarcation and organization along borders. Brigham defined tribal, transitional, and ideal stages of border development.[10] The tribal stage involved a border area as a zone not yet fully demarcated, whereas the transitional stage represented changes in border position. The ideal stage realized a permanent, fixed border marking a reduction in strategic activities along the border.[11] Lapradelle outlined a series of three stages that also equated border evolution with demarcation.[12] The preparation stage included an outline or sketch of a proposed borderline. The decision stage solidified the placement of borderlines while the execution stage witnessed the imposition of physical markers along the border.[13]

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[7] Ancel 1938; Spykman and Rollins 1939.
[8] Prescott 1987, 10.
[9] Prescott 1987, 160.
[10] Brigham 1917.
[11] Prescott 1987, 68.
[12] Lapradelle 1928.
[13] Prescott 1987, 12-13.

These tripartite models viewed demarcation as indicative of stability and permanence along the border. In a sense, demarcation represents the transition from alienation stage to the coexistent stage in the Martinez model. However, in terms of directionality, this demarcation is no guarantee that peaceful relations will continue. Certainly, changes in international relations can erode periodically and lead to war and invasion regardless of whether or not borders are demarcated. Further, demarcation is not necessarily a prerequisite for peaceful relations. For example, many miles along the western portion of the Canada-U.S. border are not physically demarcated.

Jones employed a similar system in a text on border delineation. However, the use of these three stages, allocation, delimitation, and demarcation emphasize technical and legal negotiations without reference to social relations. Indeed, Jones asserted that "each boundary is almost unique and therefore many generalizations are of doubtful validity.[14] Jones considered each border "as a special case with individuality more pronounced than resemblance to a theoretical type.[15] Ironically, these three stages can actually represent patterns in border development based upon regularities in cross-border interaction and therefore they can be attributed to theoretical behavioral stages for testing.

The 1936 landmark study by Hartshorne categorized borders according to the mechanics of border placement and the relationship to the cultural landscape through which borders were situated.[16] "Antecedent" borders were those that preceded most recognizable cultural features such as significant settlement of the area, whereas "subsequent" borders were placed in reference to various cultural boundaries such as

[14] Jones 1945, vi (cited in Prescott 1987, 12).
[15] Jones 1945, 11 (cited in Prescott 1987, 12).
[16] Hartshorne 1936.

ethnicity, language or religion. Conversely, "superimposed" borders forced a political separation between areas that previously shared a high level of cultural homogeneity. Such areas are often referred to as "irredenta". Finally, "relict" borders were those historical divisions that no longer function as such, but can still be detected on the cultural landscape through place names or border maintenance structures.

This model was the first to recognize different sets of regional social relations and how the imposition borders could affect these patterns. It represented the beginnings of a cultural geographic approach that was to incorporate multiple levels of foci, and departed from the traditional emphasis on war and conflict. However, the model did not expand on the nature of cross-border relations following its placement, or subsequent evolutionary patterns.

Fakolade took a similar approach by classifying borders according to the bases of their separation and added perspectives that guide their maintenance.[17] Borders divided on cultural or linguistic concepts allow little permeability and promote outward antagonism. Borders placed by coercion can be peaceful or tense depending on the level of perceived equity on both sides. Yet, as the ability to impose authority along the border diminishes, mutual antagonism can arise or resurface in the borderlands.

Conversely, borders that are mutually accepted rarely become agitated. These three border scenarios were controlled by the prevalence of either cosmopolitan or provincial perspectives. Cosmopolitan views were more global in nature emphasizing the movement of people and goods across borders. Provincial perspectives saw this same capitalist system as the root of both political and economic problems. According to this

[17] Fakolade 1989.

perspective, policies of internal development and self-reliance resulted in barriers to access and territorial closure.

Adejuyigbe proposed seven stages of community border evolution ranging from community expansion and initial contact with other communities, ranging from the process of mutual recognition of territorial limits through eventual border maintenance.[18] Reminiscent of the tripartite models discussed previously, this model fused stages of community border development with geographical and treaty-making approaches highlighting border allocation, delimitation, and demarcation. The author stressed that the study of frontiers and borders reveals "patterns and paradigms of behavior, actions, experience, and through which man, irrespective of race, color, religion, or ideology has displayed, again and again, over time and space."[19]

Prescott encouraged the search for such regularities in behavior regarding the formation and evolution of political borders. According to Prescott, borders undergo an evolutionary process of definition, position, and the application of state functions at the border.[20] Further, Prescott did not posit a unidirectional model where borders neatly passed through each of these stages sequentially, but rather outlined the circumstances under which subsequent negotiations might occur.

Rumley and Minghi suggested Prescott's four main concerns involved borders as an element of the cultural landscape, the effects of borders upon the landscape and economic activity, the impact of borders on area inhabitants, and the effect of borders for state policy.[21] These authors praised Prescott for avoiding what they considered the two

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[18] Adejuyigbe 1975.
[19] Ibid., 56.
[20] Prescott 1987, 63.
[21] Rumley and Minghi 1991.

extremes utilized in many geographical border studies: overly descriptive and classificatory, or treating all border situations as unique cases.

Strassoldo put forth three models for border relations that correspond to the modern development of African, Mexican-U.S., and European borders.[22] The nation-building model involved more recent issues of nation-state integration and control of physical environments creating a tendency for states to "harden" their borders. The historic partitioning of previously homogeneous areas on the part of colonial powers was cited as a major factor in modern African border issues. The superimposition of such borders encouraged the disintegration of local social units and eventually created a new and complex set of identities and corresponding social boundaries. The "co-existence" model featured internal integration and no major identity questions for either border state. There is peaceful coexistence with regulated interaction and policies of avoidance, dislocation, and separation leading to the marginalization of the borderlands.

However, it should be noted that since the above work was published in 1989, international relationships such as NAFTA and an increasing scholarship on the U.S.-Mexico borderlands have since argued against high levels of avoidance. Borders of "Integration" were characterized by mutual penetration, devolution of national government powers, and transnational integration. While Strassoldo suggested the countries of the European Union (EU) are representative of integrated border situations, it was also noted that legal and political integration have lagged behind economic or community integration.[23]

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[22] Strassoldo 1989.
[23] Ibid., 32.

In general these models focused primarily on the mechanisms responsible for physical changes in borders, and only secondarily with the effects on social relations. Further, the reliance on changes such as demarcation demonstrated that these features were not reliable indicators of future social trends along borders.

Ethnographic Studies and Local Foci

Donnan and Wilson have criticized the focus of anthropology and the social sciences regarding border studies because it ignores individual and small group agency in favor of large-scale theories, causes, and events. [24] Moreover, the authors were surprised at the relative absence of anthropological interest in international borders, as border situations powerfully reflect the historical and cultural construction of nations. Yet, they found that overwhelming amount of attention has been paid to symbolic constructs of group boundaries, rather than the political border and its role in social differentiation. Hence, while anthropology has a long ethnographic tradition in border regions, minimal attention has been paid to the pressures international borders have exerted on the groups residing in these regions. The authors call for anthropologists to address border issues through the study of local-level social interaction incorporating the invention, negotiation, and flexibility of cultural boundaries via the study of daily interactions with other border groups.

While border relations may not have been recognized as a major anthropological research focus, anthropologically oriented border ethnographies and case studies figure prominently within global border literature. A monograph on border villages in Israel by Cohen described the upheaval and social change in Arab villages in "The Triangle" along

[24] Donnan and Wilson 1994, 10-13.

the Israel-Jordan border.[25] The resurgence of the Hamula patrilineal associations in politics and labor representation provided a mechanism for the preservation of Arab traditional values and maintenance of the political and social autonomy of villages. Cohen suggested this rise was facilitated by border insecurities, a lack of law and order, and inter-village alliances.

The Cole and Wolf study centered on two alpine villages on the relict Tyrol border of the Austro-Hungarian Empire, and presently a provincial border in northern Italy.[26] The authors skillfully relate several centuries of border realignment and shifting sovereignty over this area. Holding ecological imperatives and technological capabilities relatively constant, Cole and Wolf examined social and political differences among ethnic German and Italian borderlanders, noting that "even banal issues such as women wearing aprons to town became significant cultural expressions outlawed by authorities."[27] While spatial contiguity facilitated a convergence of local policies and social customs, significant social boundaries persisted despite the flow of goods and services across the border.

The complex and often conflicting web of national and local identities was the topic of Sahlins work on the historical development of the French-Spanish border in the Pyrenees.[28] Sahlins proposed four distinct stages of border development from defining the Pyrenees as the limit of the two kingdoms in 1659, to the demarcation of a formal border in 1868. While linguistic and cultural differences were clearly present the in the region before 1659, the trajectories of the borderland communities did not diverge radically until the imposition of the border in 1868. Sahlins noted "The Cerdans came to

[25] Cohen 1965.
[26] Cole and Wolf 1974.
[27] Ibid., 269.
[28] Sahlins 1989.

identify themselves as French or Spanish, localizing a national difference and nationalizing local ones, long before such differences were imposed from above."[29] The development and maintenance of both national and local identities varied through time. The non-unilinear nature of these processes was clearly evident as these identities conflicted or coalesced through forces within and beyond the communities.

Driessen examined the Spanish-Moroccan border emphasizing the expressions of symbolic boundaries and ethnicity in the borderlands.[30] Driessen described the region as a mediating bridge between Latin Europe and North Africa documenting centuries of competing ethnic and religious factions. Traditional ethnographic categories such as ritual, power, ethnicity provided a robust framework for charting diachronic changes in social structure.

The volume by Donnan and Wilson is a significant collection of border case studies from anthropological perspectives.[31] Tonkin addressed conflicting spatial aspects of ethnic boundaries, former imperial borders, and modern polities in Africa.[32] Along the Turkish-Syrian border, there existed a dichotomy between a modern Turkish nation-state identity versus a more traditional Islamic identity characterizing the Syrian portion of the borderlands.[33] Wilson based a study of the Ireland-Northern Ireland border on symbolic components of the political border and social boundaries, noting that these symbols represented both similarities and differences between social groups and larger political collectives.[34] Wilson concluded that the changes brought about by the emerging

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[29] Ibid., 286.
[30] Driessen 1992.
[31] Donnan and Wilson 1994.
[32] Tonkin 1994.
[33] Stokes 1994.
[34] Wilson 1994.

European Union should continue to provide challenges for discerning symbolic meanings within a variety of social situations.

Wilson and Donnan updated the above volume by identifying current trends in anthropological border research and editing a collection of border case studies employing a variety of research orientations.[35] The authors encourage anthropologists to venture beyond local and immediate area concerns, to elaborate different types of border schema and consider material consequences of state action on local populations. The articles in this volume reflect a wide spectrum of foci and contrasting perspectives on contemporary border studies.

Douglass emphasizes the variability of contrasting and overlapping national and ethnic identities encountered in his study of the Pyrenean border of Spain and France.[36] However, contrary to Sahlins'[37] observations in the Catalan borderlands, Douglass did not witness the primacy of local-level issues in the conceptions of national identities within this border region. Driessen has noted the formulation of new internal social boundaries and government restrictions as a response to increased migration to Spain from Africa within the context of European Union policies.[38] Rabinowitz examines Palestinians living within Israel illustrating the role of the state in maintaining uneven power distributions, rivalries, and political turmoil.[39] Arguing against "non-essentialism" and its emphasis on hybridity and creolization, the author underscored the agenda of the state and its mechanisms in applying core policies along the peripheries. In contrast,

[35] Wilson and Donnan 1998.
[36] Douglass 1998.
[37] Sahlins 1998.
[38] Driessen 1992.
[39] Rabinowitz 1998.

Bourneman stressed that a decentered perspective not only captured the stories and richness of the human experience, but also insured these voices were not muted simply to serve grand theories.[40] Carsten cautioned that western conceptions of borders and states did not apply to the traditional Southeast Asian negeri, which correspond to a vacillating geographical zone of influence rather than a fixed territory.[41]

The articles in this volume demonstrate the great variety of approaches to anthropological border studies. The above controversies over research scale and focus further accentuate the need to present "multivocal" perspectives, incorporating "multilocal" or multiple understandings of place.[42]

The increasing interest in all aspects of the border experience has stimulated numerous interdisciplinary works on both regional and global scales. Much of this interdisciplinary research has been conducted within a broad "conflict resolution" framework. Certainly, Africa has been a major focus for such interdisciplinary border studies.[43] In addition, the break up of the former Soviet Union and the advent of the European Union have also spurred numerous border studies.[44]

Rumley and Minghi included several border case studies relating to the historical and contemporary borderlands of Europe, Asia, and Africa.[45] The emphases of these studies centered on the changing set of interrelationships based on perceptions of the respective borders, behavior along and across borders, and the impact of borders on the landscape. The authors concluded that higher levels of participation, the resurgence of ethnically

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[40] Borneman 1998, 189.
[41] Carsten 1998.
[42] Douglass 1998, 90.
[43] Delancey 1979; Asiwaju and Adeniyi 1989; Schofield 1994; Asiwaju 1994; Nkiwane 1997.
[44] Collinson 1993; de Swaan 1994; O'Dowd and Wilson 1996; Ganster 1997; Kurti and Langman 1997.
[45] Rumley and Minghi 1991.

based identities, and economic interconnectedness will lead to new social interaction patterns and alterations in the perception and uses of borders.

The Borderlands Concept

The "borderlands" as a uniquely integrated region encompassing both sides of a political border has enjoyed an enduring popularity as a paradigm. Bolton[46] used this term in conjunction with exploration and early colonization of Florida and the southwest, while Jones[47] applied it to the study of the Cordilleran region of the Canada-U.S. border. Augelli also noted that borderlands are often areas where national identities and loyalties become blurred in favor of a more regional, cross-border interest.[48]

Ideally, the borderlands approach can facilitate observation on both regional and national scales while simultaneously allowing for the paradoxes of both regional and national interests and agenda.[49] McGee advocated this approach as a means of addressing the complex and integrated nature of ethnic affiliations amidst the uncertainty of a monolithic national identity in border areas.[50]

In an application of the borderlands concept, Momoh proposed three types of border situations based upon the extent of cross-border contact and the subsequent size of borderlands interaction zones.[51] "Minimal" borderlands are a product of interaction between groups with little or no cultural/ethnic affinity. Momoh suggests borderlands of this type radiate out from both sides of the border anywhere from two to five kilometers. Under the "Zero" borderlands scenario, dramatic cultural differences between groups

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[46] Bolton 1921.
[47] Jones 1937.
[48] Augelli 1980.
[49] Rumley and Minghi 199, 16-17.
[50] McGee 1989.
[51] Momoh 1989.

fuels an atmosphere of friction and tension resulting in no appreciable borderlands area. In contrast, "maximal" borderlands are expansive areas of cross-border contact and cooperation regardless of national core policies.

House addressed the evolution of the U.S.-Mexican border by charting interaction through the borderlands and provincial and national centers through a distance-decay effect.[52] The general trend was that border transaction flows integrated progressively through time and that local and regional border issues supplanted national paradigms. Once again, borderland interests conflicted with national policies resulting in more informal networks of exchange.

However, Buckner has criticized the borderland approach by stating that it minimizes or ignores the significance of national borders.[53] The borderland paradigm was described as portraying borders as meaningless, undesirable, and a hindrance to borderlanders. Yet, Bucker cited the perennial presence and maintenance of borders as evidence for their relative importance throughout the world. Buckner did not dispute that borderlands develop commonalties over time, but questioned the extent to which generalizations apply to an entire, imprecisely defined area. In addition, Buckner rejected that these commonalties are automatically more critical than differences for our understanding of border area social processes.

There is little doubt that the borderland approach has become the dominant paradigm guiding the study of border areas in North America. To a large extent, this debate is centered on which level of focus, namely national, local, or individual, will dominate such research. Buckner rejected a tendency to emphasize local and individual

[52] House 1981; 1982.
[53] Buckner 1989.

perspectives and agenda, while also trivializing the role of the border and vilifying national level policies. Buckner's criticisms imply that this approach has lead to a model of local level stasis in the midst of national level antagonisms.

Such emphasis on loci and individuals arose in part as postmodern critiques decrying the traditional academic emphasis on national policy and the diminution of local or individual agency. However, several of Buckner's cautionary comments are critical to the purposes of this study. If the role of the state is trivialized, and social relations in the borderlands are homogenized, multiple levels of foci and hence multivocality, will suffer. Ironically, an iconoclastic rejection and subsequent omission of the role of traditional mechanisms, such as the state, results in a new pattern of myopia within border studies. Hence, the general applicability of this approach will be a function of how well these various levels can be integrated into research. Obviously, individual and local foci provide the building blocks for larger scale modeling of social relations and the search for behavioral regularities. In turn, a reflexive approach is required to constantly inform and refine interpretations for each level.

Evolutionary Models

Martinez proposed four stages of border development derived from research on African and Mexican border regions.[54] Thus, a tautology can be avoided by using a general model developed from a data source outside of the Great Lakes region. The Martinez model has several advantages over other models of border classification discussed in this section. This model is relatively unique because it posits both

[54] Works by Oscar J. Martinez include: Troublesome Border (1988); "Research Activity on the U.S.-Mexico Borderlands," (1989); U.S.-Mexico Borderlands: Historical and Contemporary Perspectives (1996).

developmental stages of political border formation (alienated, co-existent, interdependent, and integrated) and corresponding sets of relations among border social/ethnic groups. Hence, it can easily incorporate a material culture component into its framework. The Martinez model attempts to derive generalities of cross-border contact despite worldwide variations in border area size, politics, religion, ethnicity and language.[55] While these successive stages represent higher degrees of border area social and economic integration, cross-border relations do not need to move through these stages in an orderly fashion. There is no set pattern of directionality as relations may never move out of a single stage, or perhaps vacillate constantly between stages.

In the alienation stage, interaction is almost non-existent. Unfavorable conditions such as political disputes, cultural differences, or war, exist in the area. These conditions lead to militarization and rigid controls on cross-border traffic. The resultant instability and tensions keep border area populations low and as a result, the region as a whole remains underdeveloped.[56]

The co-existent stage witnesses the reduction of serious conflicts to a manageable level. However, while a level of stability has been created, significant cross-border interaction does not take place. While there is a general agreement on borders, numerous local issues remain unresolved and there is still a significant degree of tension and mistrust. Martinez characterizes this as a "cooling-off" period. The economic development of the region is "put on hold" and borderlanders are permitted to interact

[55] Martinez 1994, 1-15.
[56] Ibid., 2.

within formal parameters established by the state. These parameters may reflect the desire of governments to control the amount of contact with foreigners.[57]

The interdependent stage represents the symbiotic linkage of the borderlands. Interdependence is a function of the stable relations and a favorable economic climate to stimulate growth and foster ties with foreign markets. The flow of capital and people across borders increases dramatically, creating cross-border economic and social bonds. Ideally, this relationship is based on relative socioeconomic equality but this is seldom the case. While most borderlands socioeconomic relationships are asymmetrical, a binational socioeconomic system is forged. The degree of interdependence is affected by the policies of either government to control immigration, trade, and ethnic nationalism.[58]

The integrated stage of political border development consists of the elimination of all major political differences between states as well as dismantling any barriers for the movement of goods and people. The result is a new international ideology where countries relinquish a great deal of their sovereignty for the benefit of the new union. Since this new relationship is one of relative equality, it would seem both sides must possess a relatively equal socioeconomic standing. Martinez states that to date, this stage has not been achieved in any border situation.[59]

Given the dramatic range of border situations worldwide, Martinez acknowledged that some borders have not experienced such sequential change. Yet, the most important factor in ascribing these stages to borders is their degree of permeability. Hence, one

[57] Ibid., 2-3.
[58] Ibid., 4-5.
[59] Ibid., 5.

must compare the nature of both binational and regional relations to assess border permeability.

Potential contradictions between national policies and regional cross-border interaction can arise, especially in times of international conflict. Border areas often become focal points in conflicts, pitting national interests and patriotism against the cross-border ties of an economic and social nature. Even in the alienation stage, characterized by militarization and rigid cross-borders controls, cordial cross-border relations can be maintained. While tension or conflict will always be present to some degree, the crucial difference is how both nations and regions respond to the tension. Changes in the nature of these responses provide a basis for stage differentiation.

Certainly, no single stereotypical set of relations can reflect the complexities of interaction over the broad range of social situations in border areas. Indeed, Strassoldo identified several conflicting currents of thought common to border areas including ambiguous and shifting identities, alienation from core areas, and an extreme defensive nationalism.[60] Obviously, the nature of such social complexity cannot be described through simple unilinear evolutionary modeling. Thus, the Martinez model was designed to accommodate the ebb and flow of international relations and the suite of regional sociopolitical identities. For example, border situations may vacillate between stages of alienation and coexistence, or perhaps never show evidence of integration. Conversely, other border situations may never show evidence for alienation and intense conflict. Perhaps the greatest irony of border studies is that while international borders are such a ubiquitous geopolitical feature of our world, local level complexities present a daunting

[60] Strassoldo et al. 1982, quoted in Martinez 1996, 19.

obstacle to understanding this icon of nation-state identity. The advantage of this model is that it can be applied to any border situation worldwide, while preserving the unique social circumstances underlying individual border formation and maintenance.

The discussion of these models illustrated several theoretical and methodological requirements for this study. First, the model needs stress cross-border social relations in a diachronic and non-directional fashion. Further, this model needs to be capable of incorporating and balancing national, local, and individual foci, and the multivocality inherent in these different levels. Only the Martinez model of incorporating all of these requirements.

Material Culture Studies Involving Borders and Boundaries

The identification of various boundaries through material culture studies has been a longstanding anthropological tradition. Archaeology is uniquely suited to address the development of borders as it can chart:

> how a polity forms, expands, meets another, and how settlement and artifact distributions reflect the changing activities taking place between the two larger polities. Archaeology's emphasis on the details of material culture and spatial patterning also allows more in-depth study of economic and social transactions as these are reflected in the archaeological data.[61]

Numerous approaches have been employed to elucidate the nature of borders and various social boundaries. Stylistic studies have sought to relate material culture differences to the nature of structured interaction in a variety of social contexts.[62] In particular, the concepts of information exchange and signaling for expressing identities

[61] Beekman 1996.

[62] Hodder 1977; 1982; 1985; Plog 1980; Sampson 1988; Conkey and Hastdorff 1990.

and boundaries have received a great deal of attention.[63] Cultural ecological frameworks have enjoyed a similar popularity in boundary studies.[64]

The number of volumes dedicated to material culture studies incorporating both borders and boundaries suggests that these processes have been viewed in a complementary fashion.[65] Certainly, both topics incorporate processes of exclusion within a broad framework of interaction. It may also be argued that a political border can be viewed as a particular form of social boundary. For studies of polities other than the modern state, the issue of scale can sometimes blur the distinction between social boundaries of a spatial nature and the development of some form of border.[66]

The border as a fixed line denoting the limits of state sovereignty is often seen as a relatively recent phenomenon. Issues of social organization, complexity, and territoriality raise the question of whether borders in this sense are a product of the modern state. Some have argued that for other than modern state social organization, it is more effective to distinguish between the limits of effective direct control known as controlled/unitary borders, and areas of increasingly indirect, negotiated or contested authority on segmentary/hegemonic borders.[67] This approach also acknowledged that forms of political, social, or economic control are seldom coterminous. Numerous studies have investigated the nature of interaction along hypothesized prehistoric borders

[63] Wobst 1977; Canouts 1986; Voss 1987; Sterner 1989.
[64] Rappaport 1968; Willey and Sabloff 1974; Flannery 1976; Ware 1983.
[65] De Atley and Findlow 1984; Green and Perlman 1985; Trinkhaus 1987; Shennan 1989.
[66] Kimes, Haselgrove, and Hodder 1982; Kowalewski, Feinman, and Finsten 1983.
[67] Kristof 1959; Trinkhaus 1987; Beekman 1996.

via: settlement distribution and patterning;[68] architecture and fortifications;[69] inscriptions, and hieroglyphics;[70] and trade.[71]

From the standpoint of the modern state and post-contact situations, there has been a tremendous amount of research on social boundary formation and maintenance.[72] Material correlates for the expression of ethnicity, socio-economic status, gender, and combinations thereof, have become the most popular foci in historical archaeology. While it is well beyond the scope of this chapter to provide a detailed discussion for all works on these topics, the following discussion will highlight major works pertaining to these sources of stratification and resultant social boundaries.

Ethnically oriented material studies have emphasized the conditions under which social boundaries are reinforced or permeable through material patterns representing domination, resistance, and mutual acculturation for various social groups. The experience of African diaspora in the Americas, both pre and post-emancipation, is a topic of considerable scholarship.[73] Material studies examining issues of pluralism, acculturation, and stratification for overseas Chinese groups have also become more prevalent.[74]

Studies of colonial and post-colonial social boundaries expressed via material culture patterning were one of the first foci in historical archaeology. The very nature of

[68] Renfrew and Level 1979; Brashler 1981; Kimes et al 1982.; Kowalewski et al.1983; Cherry 1987; Rowlett 1989.
[69] Gorenstein 1985; Topic and Topic 1987; Beardsley 1990; Beekman 1996.
[70] Lynch 1980; Cooper 1983; Marcus 1984.
[71] Renfrew 1975; Feuer 1981; Hodder 1982; Helms 1992.
[72] Rogers and Wilson 1993.
[73] Otto 1984; Kelso 1984; Singleton 1985; Orser 1990; Joseph 1993; Singleton and Bograd 1995.
[74] Beals 1980; Schuyler 1980; Wegars 1985; Praetzellis, Praetzellis, and Brown 1987.

interaction in the fur-trade necessitates discussion of material culture and social boundaries emphasizing their permeability in various forms.[75] Several recent synthetic volumes have provided excellent guides to the archaeological literature for colonial French studies,[76] and for British colonial studies for the sixteenth and seventeenth centuries.[77] In a similar fashion, the archaeology of Spanish and Mexican colonialism has also received increasing attention.[78]

Clearly, with the addition of written records as a data source, the above studies illustrate the incredible complexities of understanding ethnic identities and deciphering permeability.[79] Further, the concepts of creolization and syncretism facilitate our understanding of multicultural exchange of lifeways and discourage the attribution of a single immutable ethnic identity to individuals or groups.[80] Rather, these studies examine new hybrid identities as a polythetic set that may be triggered or called upon in differing contexts.

Issues of bounding socioeconomic statuses for Euro-American groups form another intensely popular focus in historical archaeology. Ceramics have been the most frequent artifact type to serve as a basis for economic scaling.[81] The assessment of status and boundaries has also been undertaken via the analysis of faunal remains and foodways.[82] Likewise, higher levels of social boundary maintenance on military sites have provided

[75] Brown, Eccles, and Heldman 1994.
[76] Walthall 1991; Waselkov 1997.
[77] Miller et al. 1996.
[78] Deagan 1983; 1985; Ewan, 1990; Farnsworth and Williams 1992; Ayres 1995.
[79] Lockhart and Schwartz 1983, 154-57.
[80] Groover 1994.
[81] Turnbaugh and Turnbaugh 1977; Sussman 1978; Miller 1980; 1991; Miller and Hurry 1983; Drucker, 1981; King 1984; Esarey 1991.
[82] Drucker 1983; Singer 1985; Ewan 1986 .

fertile ground for study.[83] The realm of gender studies has also become a major focus within archaeology, reexamining traditional roles, systems, and ideologies.[84] Obviously, the separation of the above social dimensions and material types was solely for descriptive purposes. In fact, several synthetic studies have tried to demonstrate how these social dimensions often reinforce each other, and have emphasized the contextual aspects of various material types.[85]

Globalism in historical archaeology is another important trend with implications for border studies. Orser has stressed the need for greater attention to large-scale intercultural webs of interaction.[86] Archaeological border studies can fit well into this framework. However, while incorporating Orser's individually based "mutualist" approach, it is also critical to assess the role of larger societal structures, such as the state, in these expanding networks of contact. Only then can we glean these intercultural connections, and the role of Orser's "haunts of historical archaeology...colonialism, ethnocentrism, capitalism, and modernity" can receive proper consideration.[87]

Ironically, while a great deal of archaeology has been carried out on sites along political borders and in borderlands, the nature of political borders and cross-border interaction has been treated as a peripheral topic. Much of the historical archaeological literature has treated border issues as anecdotal discussions of past hostilities or illegal activities. However, a growing number of historical archaeological studies have focused their attention on border issues.

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[83] Turnbaugh and Turnbaugh 1977; Sussman 1978; Feister 1984; Fisher 1987; Esarey 1991; Staski and Reiter 1996.
[84] Gero and Conkey 1991; Seifert 1991; Clements 1993.
[85] Dickens 1982; Spencer-Wood 1987; Leone and Potter 1988; McGuire and Paynter 1991.
[86] Orser 1994; 1996; Orser and Fagan 1995.
[87] Orser, 1995, 57-88.

Staski compared deposits dating before and after the construction of railroads in the border town of El Paso in order to assess changes in the cross-border flow of commodities and cultural traditions.[88] In turn, these results were compared with modern interpretations of cross-border dynamics in the late nineteenth and early twentieth centuries. The analysis of faunal remains indicated a dietary homogenization for all borderland groups as an obvious product of access to national markets facilitated by railways. The author felt that this observation contrasted with the commonly held view of increasing cultural divergence between Mexican and Euro-American groups after the introduction of the railways in the region in 1881. The ceramic patterns also provided a departure from this conception of increasing cultural differentiation.

In an analysis of pre and post railroad deposits representing all borderland groups, Staski found that railroad era ceramics of Mexican affiliation occurred in a higher frequency and with greater variation in styles and forms.[89] These findings prompted the author to call into question the "border culture" concept that held Mexican-American groups in the borderlands kept traditional beliefs but abandoned traditional material culture for items of Euro-American manufacture. Staski stressed that a wide range of material types and contexts must be reviewed into order to ascertain the degree to which numerous aspects of group identity and experience are affected by culture contact.

Recently, these themes were echoed by Cusick in a preliminary study on creolization and national agenda along the Spanish-British borderlands of southern Florida.[90] This study marked a significant departure from other studies of the region as Cusick addressed

[88] Staski 1987.
[89] Ibid., 55.
[90] Cusick 2000

creolization and syncretic processes and their material correlates with a focus on the St. Mary's River border and not simply through the filter of amorphous borderlands.

Andrén also incorporated multiple levels of foci in his study of the Danish-Swedish border in late medieval and early modern period.[91] Architectural and trade patterns, were analyzed in relation to the official stone cairn border markers. A clear set border region affinities was not in contrast to the patterns evident in other regions.

The archaeological components of these border and boundary studies have illustrated that material culture is a sensitive indicator of economic and social transactions. The key is to develop material culture correlates indicative of such interaction. Further, they have demonstrated the need to incorporate as many artifact forms and materials as possible to assess the nature of these transactions. Indeed, various kinds of materials and artifact attributes may suggest different patterns involving various foci and suites of identities.

The discussion of the documentary and material requirements for a model of cross-border interaction revealed that the Martinez model seems to be the only model that can accommodate these theoretical and methodological concerns. The next step in this study is to present the historical background for the development of the Canada-U.S. border. Chapter three will discuss the macro-regional and subregional historical sequences to address the critical issue of whether the history of this region, and ultimately other border situations, can be approached via a series of stages of cross-border contact.

[91] Andrén 2000

Chapter Three - Diplomacy and the Development of the International Border

This chapter traces the macro-scale development of diplomatic, territorial, and economic precedents on border issues, and presents the subregional sequence of occupation for the St. Mary's River and Lake Huron borderlands. The presentation of these two scales, or foci, is necessary in order to demonstrate how these diplomatic precedents and national policies affected local patterns of settlement and interaction. In turn, it is important to document how local level initiatives and responses to macro-scale policies affected the perspectives and subsequent actions of these core institutions.

In retrospect, it is not surprising that the first recorded claims and disputes over territory in the Americas began with the news of the discoveries of Columbus. Indeed, these "new" western lands simply fueled preexisting imperial controversies that had arisen from exploration dating back to the middle of the fifteenth century.

The founding of European colonies in northern North America beginning in the first decade of the seventeenth century foreshadowed three centuries of seemingly inevitable contests for land and commerce. The study of colonial borders in North America presents several unique interpretive challenges. First, borders between colonies within the same imperial system must be viewed in a different fashion from the borders that separate territories belonging to different and hence competing imperial systems.

Second, the mechanisms for creating and maintaining colonies did not necessarily include borders as an essential feature of the colony. Most early colonies were founded by means of a royal charter that defined its geographical area and the economic and settlement obligations of the grantee(s). Often, the geographical description of the

colonies did not contain a fixed western limit, allowing for subsequent economic exploitation and expansion. In addition, European countries claimed territory by virtue of being the first imperial power to explore and settle the area. Such claims were sometimes difficult to prove and rival claims to an area were common.

Third, treaty provisions such as border placement and maintenance were often deferred or ignored totally by at least one of the parties involved. Hence, borders became the transition between zones of imperial influence and control leading to the possibility of simultaneous *de jure* and *de facto borders.* Fourth, small populations and the demands of early colonial life would have made it extremely difficult to maintain and enforce borders in a modern sense. Hence, colonial borders generally are characterized as having a high degree of permeability. While borders may have been an abstract concept in the early colonial experience, colonists, officials, and entrepreneurs developed an increasing sense of territoriality vis-à-vis the Native American presence, and economic and military incursions by foreign powers.

By the 1630's, colonial conflicts requiring arbitration arose over disputed territories mutually claimed by right of exploration and settlement. The short-lived 1650 Anglo-Dutch Treaty of Hartford contained a clause fixing a temporary border between the United Colonies of New England and New Netherland[1]. In a similar fashion, successive treaties in the seventeenth century would avoid the contentious issue of border placement for the sake of an overall peace.

[1] Davenport 1967, 1-9.

During the negotiation of the Treaty of Breda in 1667, the definition of "Acadia" was called into question as the charters formerly issued under Louis XIV and Charles II conflicted spatially.[2] Yet, while Acadia was returned to France, it was never demarcated in the treaty. The Treaty of Breda also set the North American precedent for *status quo ante bellum*, or the return of conditions to their status before the war. The 1687 Treaty of Whitehall was designed to end Anglo-French hostilities in the vicinity of Hudson's Bay and deferred the placement of a permanent colonial border in the area for future negotiations.[3] The Treaty of Ryswick, which ended King William's War in 1697, provided for the restoration of Hudson's Bay installations, *status quo ante bellum*, but again deferred border placement to a future commission on commercial affairs.[4] Yet, this commission was never formed and both sides retained the captured posts.[5] However, the diplomatic concept of *status quo ante bellum,* or the situation prior to the war, became common in later treaties such as the Treaty of Ghent in 1814.

After the short-lived peace, European powers were engaged in Queen Anne's War or the War of the Spanish Succession beginning in 1702. The series of treaties between various European powers ending this conflict were signed at London in 1712 and Utrecht in 1713. Articles 9 through 13 of the Treaty of Utrecht detailed the French restoration of territory to Great Britain including Hudson's Bay and the Strait, Newfoundland, and the so-called ancient boundaries of Acadia. The British traced these limits through New Brunswick and Quebec to the St. Lawrence River including Cape Breton and the

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[2] Ibid., 139.
[3] Ibid., 324-27.
[4] Ibid., 357-58.
[5] Eccles 1974, 141.

peninsula of Nova Scotia. However, the French maintained Cape Breton, the Gulf of St. Lawrence islands, and the mainland to the Kennebec River using the Abenaki as a buffer zone.[6] The concept of a buffer zone would continue as a powerful theme in British strategy regarding colonial territories.

In spirit, this treaty also sought to fix more permanent Anglo-French border through an appointed commission. However, in the interim neither group was allowed to cross into the known territory of the other group.[7] Theoretically, this permeability stipulation represented a significant departure from the more informal attitudes towards borders established through previous treaties. In practice, both the French and British ignored this stipulation.

In article 15 of this treaty, subjects of either crown were not to interfere with the movement or trade practices of Indians who were subject to, or allied with the other group. Essentially, this provision meant that the French had to respect the British suzerainty or stewardship over the Iroquois.[8] Further, such provisions were designed to facilitate British trade and contacts with Native Americans further inland. Article 13 allowed the British to "enjoy full liberty of frequenting for the sake of trade the places and rivers called Ontario, Erie, Huron, and all the surrounding districts.[9] The imprecise phrasing, albeit wrought out of deceit, ignorance, or both, fueled a series of territorial disputes that would linger for more than a century.

While one of the major British goals for the Treaty of Utrecht was to gain access to

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[6] Ibid., 142.
[7] Davenport 1967 (vol. 3), 197.
[8] Eccles 1974, 141; Davenport 1967 (vol. 3), 206.
[9] Davenport 1967 (vol. 3), 198.

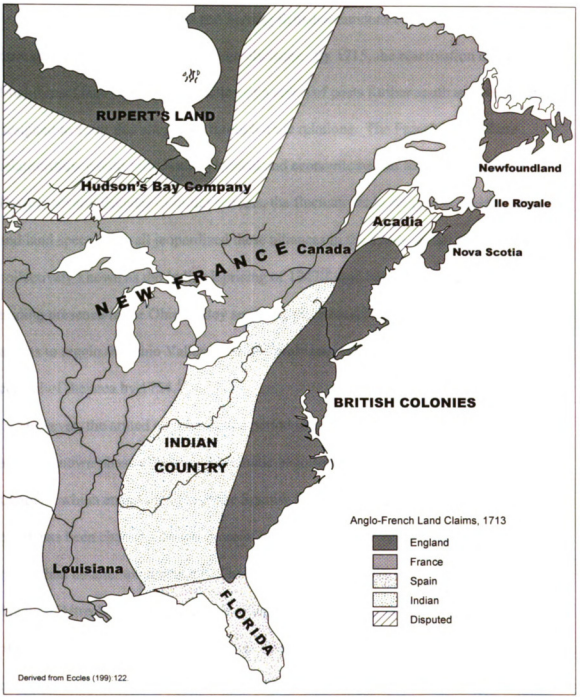

Figure 1: Land Claims in North America (1713)

interior of the continent, subsequent French policy was designed to thwart this endeavor.

Success in holding the west and barring British incursions could only be achieved through Native American support and alliances. By 1715, the reactivation of Michilimackinac and the construction of a series of posts further south and west were designed to court this allegiance through trade relations. The French hoped these relationships would form both a physical and economic barrier to British expansion. Despite several decades of initial success, the fluctuations in fur prices, trade rivalries, and land speculation all jeopardized these alliances in the 1740s. A series of incidents collectively known as the Indian Uprising of 1747[10], and increasing Anglo-American fur trading presence in the Ohio Valley seriously threatened French control. Yet, French efforts to regain the Ohio Valley were relatively successful and the French regained control of the area by 1754.[11]

However, the armed conflict of this period in the Great Lakes region was paralleled by a lesser known phase of intense diplomatic negotiation pursuant to the Treaty of Aix-la-Chapelle which ended the War of the Spanish Succession in 1748. In retrospect, this treaty has been characterized as more of a truce and preparation for a larger conflict, rather than an attempt at peace.[12] The *status quo ante bellum* clause relating back to the Treaty of Utrecht seemed ridiculous in light of the efforts of both sides to occupy the area of the western Great Lakes and beyond. Yet, this predictable provision to set up a commission to oversee claims and fix a border seems to have been taken more seriously than in the past.

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[10] Tanner 1987, 44.
[11] Eccles 1974, 162-65.
[12] Eccles 1998, 187.

A four-person committee was appointed to look into the border issues and claims including Nova Scotia, the St. Lawrence River, and the Ohio Valley. Pease conducted a comprehensive and revealing study of these negotiations and their impact on North American territorial borders.[13] Pease emphasized that these negotiations were not simply a *fait accompli* superceded by the peace of 1763. Rather, this study analyzed territorial claims and responses to reveal historic perceptions of the strategic and economic position of the Great Lakes vis-a-vis other colonial possessions, as well as various statuses held by Native Americans prior to the American Revolutionary War.

The British cited the Treaty of Utrecht as the basis of their own claims and the repudiation of French claims. In addition, the British cited a cession of Iroquois lands in 1701 as a further basis to claiming all lands the Iroquois possessed including the Ohio Country.[14] This cession is somewhat mysterious as the only commonly noted Iroquois land transaction in 1701 was a deed of trust given to New York for the Susquehanna Valley.[15] However, Pease maintained there were authenticated treaties in the British archives acknowledging British "overlordship" and a 1701 treaty ceding their hunting grounds, all the country of the lakes, to the British.[16] However, he gives no reference for this treaty. Alliances such as the Covenant Chain and the above deed, coupled with the British suzerainty or stewardship clause of Utrecht, were the vehicles for land demands. The British claimed Iroquois control, by occupation or conquest, for the headwaters of the Ohio, around the shores of Lakes Erie and Ontario, through New York and

[13] Pease (ed.) 1936.
[14] Ibid., xxxiv.
[15] Jennings et al., 1985, 40.
[16] Pease 1936, lix.

Pennsylvania, and the Mississippi Valley and Virginia. Hence, all French settlement on the Great Lakes ran counter to the Treaty of Utrecht, at least in the eyes of the British.

Certainly, French claims of exploration and settlement dated well before Utrecht. For the western Great Lakes and Ohio Country, the French advanced the 1679 LaSalle exploration and subsequent communication between Louisiana and Canada as the bases of their claim. The French rejected the south shore of the St. Lawrence as a border, claiming that this river was actually the geographical center of Canada. The French also claimed the Ohio River Valley on the basis of dependence and communication with Canada. The issue of the Iroquois land cession was rejected on several counts including the lack of definition in treaties, non-sedentary occupation, and treaty suzerainty over the persons but not the lands of the Iroquois.[17]

There were a number of proposals and counter-proposals but little consensus in actual border placement. Both sides suggested areas that would serve as neutral zones where traders would be allowed, but all forts and settlements would be abandoned. The French rejected a zone from the Appalachians to the Wabash River, whereas the British authorities rejected a British-sponsored proposal to include the Lake Ontario-Niagara River-Lake Erie region. Lord Halifax realized that this latter proposal would sacrifice portions of New York and Iroquois territory.

The Pease study begs the question whether consensus over borders could have been achieved if the French and Indian War had not broken out in 1755. In fact, while this conflict is classified as a part of the larger European-based Seven Years War, it actually broke out in North America before the beginning of hostilities in Europe. Ironically,

[17] Ibid., lviii.

these territorial negotiations were continued by correspondence in the early years of the war, only to be rendered moot by the outcome of the conflict and the subsequent Treaty of Paris in 1763.

Historical maps of North America, especially those produced during the conflict, provided a graphic representation of these territorial aspirations and perceived borders. While these maps were not official government documents, they portray a variety of nationalistic and commercial agenda communicated through period journals such as *Gentleman's Magazine*, and *Political Magazine*. Given private agenda such as land speculation, it is not surprising that the proposed "neutral zones" as areas of zero-growth were typically not represented on period maps.

Numerous British maps showed the Province of New York extending north, well beyond the charter border of the St. Lawrence, to the Ottawa River, through Lake Nipissing, to points unknown in the west. In a similar fashion, the territories of Pennsylvania and Virginia were pushed west to a border on the Mississippi River. Evans' 1755 *Analysis* included a map outlining border areas that needed permanent settlement to bolster British claims against the French. [18] However, no map was to have more impact on border negotiations that the *1755 Map of the British Colonies in North America* by John Mitchell.[19] Indeed, it was not only a standard by which the Canada-U.S. border was based in 1783, but it continued to be cited in border negotiations as late as 1932.[20]

While tribal placement on maps was common in the seventeenth and eighteenth centuries, their placement took on additional importance to legitimize land claims devised

[18] Goss 1990, 128-29.
[19] Ibid., 130-31.
[20] Ibid., 130.

through complex webs of alliances, treaties, and cessions. Hence, an Iroquois label became the rationale for a British territorial claim. While the base maps were freely copied from many sources, notes on the legitimacy of claims and counterclaims were often included. In one case, a map by Jefferys was modified by Bellin to show the "pretendues" (pretensions) or the false claims of Britain and a description of the historic basis of French claims.[21] Given the intensity and disparity of these claims it is difficult to imagine a diplomatic solution. The subject of borders would be determined by conquest.

From Colonies to Country

The Treaty of Paris and Royal Proclamation of 1763 had a profound effect upon settlement and future border determinations. For all intents and purposes, France lost its vast North American empire as Canada was ceded to Britain and Louisiana to Spain. The British defined the borders of Canada as an area from the headwater of the St. John's River, southwest through Lake St. Jean to the southern tip of Lake Nipissing, and southwest skirting the Ottawa River to Lake St. Francis near St. Regis, New York. Questions over Canada's "ancient borders" and this British border configuration would become a source of tension during the United States border negotiations.

After the Seven Years' War, the British government issued the Royal Proclamation, which prohibited settlement west of the Appalachian Mountains pending a solution to the problems of incursions into Native American territory. The British also wanted to channel settlers from the thirteen colonies north into Canada in order to dilute the French speaking, Catholic population of Quebec and gradually assimilate them into an English speaking Protestant majority. Hence, the British promised to impose English law and

[21] Portinaro and Knirsch 1987, 246-47.

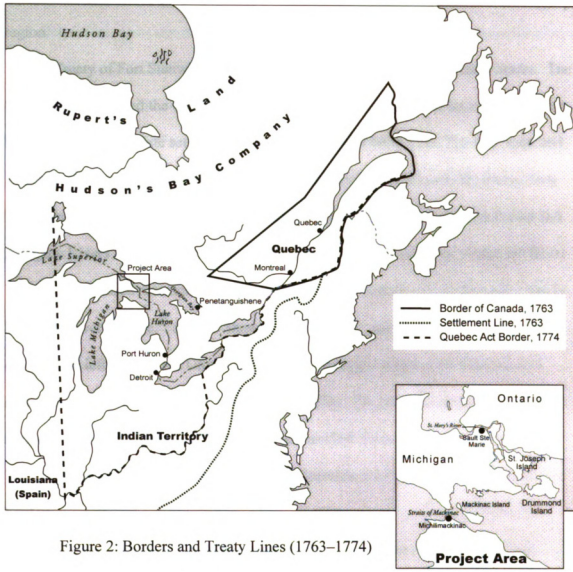

Figure 2: Borders and Treaty Lines (1763–1774)

representative institutions to entice English speaking settlers. However, the lure of the Ohio Valley proved too powerful and a steady stream of settlers illegally poured into the region.

The Treaty of Fort Stanwix in 1768 was designed in part to address these issues. The Stanwix Line situated the Ohio River as the permanent border, or buffer zone, between Indian country and white settlement along the frontier of New York, Pennsylvania, and Virginia. The line actually ran a few miles west of the fort, in present day Rome, New York, southward to the Delaware River, along the west branch of the Susquehanna and Allegany Rivers to the Ohio River from Pittsburgh to the mouth of the Tennessee River. Yet, this line caused resentment among the Oneida who lost control of the Lake Oneida-Mohawk River portage,[22] and the Shawnees, Delawares, and Cherokees who lost their claim to the left bank of the Ohio River.[23] The line further angered land speculators already livid over the settlement prohibitions of 1763. In the south, the 1768 Treaty of Augusta between Georgia and the Creek, and the 1768 Treaty of Hard Labor and 1770 Treaty of Lochaber between Virginia and the Cherokee imposed similar settlement borders.

The Quebec Act of 1774 reflected growing British concerns over economic and territorial relations with the thirteen colonies and the desire to maintain Canada as a base of operations should hostilities break out. In part, the act was designed to court the allegiance of the French Canadian elite seigneurs and clergy in hopes that the rest of this insular society would support the upper class and by extension, British rule. The

[22] Tanner 1987, 62.
[23] Calloway 1987, 16.

authorities guaranteed the French Canadian settlers freedom of religion and French civil law, and denied the colony an elected assembly that would have excluded Catholics by law. The British were also hesitant to grant a representative assembly to the colony based upon their experience with the cantankerous assemblies in the thirteen colonies.

Despite the denial of an elected assembly, this act enticed English merchants with its expanded territorial provisions. The Quebec Act expanded Canadian territory to include the rich fur trade area from the junction of the Ohio and Mississippi Rivers, extending north through western Lake Superior and bordering on the Hudson's Bay Company reserve known as Rupert's Land. Acquisition of this newly opened area reduced the competition from other colonial fur trade centers such as Albany, New York.

The reaction to this act in the thirteen colonies was extremely bitter and was hailed as one of the infamous "Intolerable Acts" compelling the colonies into revolt. The precedents set by the denial of a colonial assembly and Catholic emancipation were objectionable to many in the thirteen colonies. Yet, the renewed prohibition of westward expansion and subsequent land speculation losses caused by these colonial Canadian border modifications were particularly difficult to accept for American colonials.

Indeed, many people in the thirteen colonies thought the imperial abuses mentioned above also inflamed colonists in Canada and other colonies and territories which later would become part of Canada[24]. However, early Revolutionary War military expeditions against British colonial centers such as Quebec City, Montreal, and St. John's revealed that the thirteen colonies overestimated both the anti-British and pro-U.S. sentiment in these areas. Yet despite dissatisfaction with British policies and a degree of ambivalence

[24] Mancke 1997, 3.

toward the Revolutionary War, these Canadian and maritime colonies and territories refused to take up arms against the Crown.

Realizing that armed conquest would be more difficult, costly, and time-consuming than previously imagined, the Continental Congress employed more peaceful strategies to court the Canadian colonies. On June 1, 1775, the Congress with "nothing more in view than the defense of these colonies" considered a bill "that no expedition or incursion ought to be undertaken or made, by any colony, or body of colonists, against or into Canada.[25] Indeed the eleventh Article of Confederation, originally drafted in 1778, guaranteed the immediate admission of Canada, waiving the customary approval vote from at least of nine states for admission into the United States. Henceforth, Canada was to be courted through diplomatic means and not coerced through force of arms.

Forging a Border

The subject of U.S. borders with imperial powers had been discussed repeatedly in Congress prior to the end of the American Revolution.[26] However, the mechanics of territorial description and debate proved to be a long and complicated process. The fourteenth Article of Confederation, debated October 15, 1777 but never ratified, initially addressed the issue of borders:

> The United States, in Congress assembled, shall have the sole and exclusive right and power to ascertain and fix the western boundary of such states as claim to the Mississippi or South Sea, and lay out the land beyond the boundary, so ascertained, into separate and independent states, from time to time, as the numbers and circumstances of the people may require.[27]

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[25] JCC 23 (1782), 75.
[26] Soule 1896; Callahan 1967.
[27] JCC 9 (1777), 806.

Spurred by military successes, the Treaty of Alliance with France, and the rejection of a peace offer from Britain (April 22, 1778), Congress contemplated the demands it would make while negotiating a new peace treaty with more favorable terms. On February 23, 1779, it was proposed the border of the United States would run:

> Northerly by the ancient limits of Canada, as contended for by Great Britain, running from Nova Scotia, south-westerly, west, and north-westerly, to lake Nepissing, thence a west line to the Mississippi; easterly by the boundary settled between Massachusetts and Nova Scotia; southerly by the boundary settled between Georgia and East and West Florida; and westerly by the river Mississippi.[28]

Members debated and revised the wording of the border provision throughout March 1779. Another configuration originally entered only in the Secret Journal of the Continental Congress, by Gouverneur Morris depicted the border as running:

> ...to the River Mississippi along the middle thereof to the River Illinois, thence up along the middle thereof to the source thereof, thence to the southwest part of Lake Michigan or Illinois thence due north to the northern shore of the waters of the Lakes Superior and Huron, thence along the said shore eastwardly up the River called the Rivière des François to the mouth of Lake Nipissing, thence a Line drawn to that part of the St. Lawrence, which lies in the latitude of 45 degrees north, thence east to the Connecticut River...[29]

The above description roughly corresponds to one of the infamous "red line" border routes debated by the British, and United States, in consultation with Spain and France.[30] The above-mentioned route, and the "middle of the lakes" route seem to have been possible borderlines marked in red on several contemporary authoritative maps during treaty negotiations. However, the function and exact context of the "red lines" it is not

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[28] JCC 13 (1779), 240.
[29] Originally, this border description was entered only in the Secret Journal, Foreign Affairs. This description was added as a footnote for JCC 13 (1779), 341.
[30] McElroy and Riggs (eds.) 1943.

well known. Historians still ponder exactly who marked each route, and if these marks were meant as points of clarification, proposals, or counter proposals.[31]

In August of 1779, the provision of February 23rd was refined and instructions were issued to the treaty commissioners. The Great Lakes segment of this instruction was outlined as:

> ...due west in the latitude of forty five degrees North from the Equator to the North Westernmost side of the River St. Lawrence or Cadaraqui; Thence, straight to the South end of Lake Nipissing, and thence Straight to the Source of the River Mississippi; West by a line to be drawn along the middle of the River Mississippi from its source to where said line shall intersect the 31st degree of North Latitude. South by a line to be drawn due east from the termination of the line last mentioned in the latitude of 31 Degrees...[32]

However, this same document carried instructions on borders and other issues as an alternative that allowed for some latitude for negotiation purposes:

> ... if the line be drawn from the mouth of Lake Nipissing to the Head of the Mississippi cannot be obtained without continuing the war for that purpose, you are hereby empowered to agree to some other line between that point and the River Mississippi, provided the same shall in no part thereof be to the Southward of the latitude 45 [degrees] North.[33]

While French interests also expressed doubt over further military expeditions against Canada, the Continental Congress and its commissioners in Paris continued to appeal for Canada to join the new nation. Diplomatically, commissioners such as Benjamin Franklin openly sought Canada as reparation for wartime losses and as a buffer zone for security. The Congress also felt that their claim to at least a portion of the Canadian

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[31] Jones 1977.
[32] JCC 14 (1779), 958-59.
[33] Ibid., 959.

territory was strengthened by the military successes in the Ohio country.[34] Congress was presented with a number of memorials of land tenure and pleas to press for the greatest amount of territory. Memorials from states such as Massachusetts, Virginia, New York, and on behalf of land speculators in the Ohio and Indiana countries all detailed the need for strength in negotiation and expansive border demands.[35] These memorials also traced the historical bases for states' land claims and were a prelude to many interstate border controversies that would follow the demarcation of national borders.

The topic of borders resurfaced once again in the spring of 1781 as Congress took up the issue of instructions to its ministers regarding a peace treaty. Proposals of June 7, 1781, included: i) holding steadfast to previous border demands, but if unobtainable; ii) allowing ministers to make peace without fixing western limits; and iii) obtaining as advantageous a settlement as possible on borders.[36] On June 8, Virginia wished to add a qualifying clause that the border could only be modified:

> "from the intersection of the forty-fifth degree of north latitude with the river St. Lawrence to the mouth of the Illinois river, from which you are to recede so far as to agree that the boundary of the states between these two points shall run from the intersection aforesaid, through the middle of the said rivers, of Lake Ontario, of the Strait of Niagara, and of Lake Erie, to the mouth of the Miami river, thence in a direct line to the source of the river Illinois, and thence down the middle of the said river to its confluence with the Mississippi.[37]

A further amendment by Virginia that day concerned U.S. ministers not ceding any territory lying on the southeast side of the river Ohio, or territory between it and the

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[34] Callahan 1967, 6-9.
[35] For Indiana see JCC 15 (1779), 1063; For Massachusetts see *JCC* 23 (1782), 473
[36] JCC 20 (1781), 608-610.
[37] Originally these instructions were entered only into the Secret Journal, Foreign Affairs. It was subsequently added into JCC 20 (1781), 611-612.

Mississippi and Illinois, and Lakes Erie and Ontario. Any cessions in these areas would have impeded Virginia's territorial aspirations.

These proposals bore a resemblance to the Gouvernuer Morris instructions mentioned above, but they were voted down. Nevertheless, it would seem that this proposal is the first congressional reference to splitting the lakes, and a first step in the "middle of the lakes" border compromise. Soule aptly noted that the "middle of the lakes" solution was a territorial compromise between the borderlines established by the Treaty of Paris and Royal Proclamation of 1763, and the Quebec Act of 1774[38]. The congressionally approved instructions simply referenced those issued on August 19, 1779, with instructions to commissioners to exercise their own judgment.

Yet, in a secret draft of a letter to Louis XVI, Congress declared it would:

> not give the Enemy any lands South of the River Ohio, the Lakes Erie and Ontario, and of a line to be drawn from the North east end of Lake Ontario parallel with the River Irrequois [St. Lawrence], till it intersects the 45th degree of North Latitude...[39]

Thus, the "middle of the lakes" compromise was acceptable to Congress, if not publicly, than at least in chambers in order to preserve their position in negotiations. Regardless of nineteenth century border disputes, John Jay maintained that a borderline through the middle of the lakes "would form an unmistakable line" for the future.[40]

From the point of view of the British Government, the topic of borders was intertwined with other issues, such as compensation for the Loyalists and the mounting

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[38] Soule 1896, 612.
[39] Originally, this letter was entered only into the Secret Journal, Foreign Affairs. It was subsequently added into JCC 20 (1781), 639.
[40] Morris 1983, 369.

British war debts. The consensus was that if the conflict continued, the debts would grow larger and the United States would only grow more intransigent, especially on the issue of borders. Yet, the British needed to secure eastern and southern Ontario along the St. Lawrence, and Lakes Ontario and Erie, in order to preserve the Loyalist communities that had sprang up since the 1770s. In essence, Britain would accept the "middle of the lakes" proposal in exchange for land and compensation for the Loyalists.

This line was also rationalized as better than the "Nipissing Line" for the Canadian fur traders whose traditional routes were not placed in U.S. territory. However, fur traders did complain that traffic would be diverted from Montreal to Albany as a result of this border placement. The British press also bemoaned the surrender of a part of the empire, and called on the government to continue the war.[41]

Nevertheless by the end of the Revolutionary War in 1783, a new international border had to be formulated, at least in principle, between British North America and the United States. However, other imperial powers in North America were also concerned over the placement of a border between Britain and the United States. After tumultuous negotiations replete with the intrigue of secret talks and alliances involving Britain, the United States, France, and Spain, the Treaty of Paris between Britain and the United States was signed on September 2, 1783.

The 1783 Treaty of Paris contained ten articles that cover a variety of issues including border placement, navigation access, and fishing rights, and estate and debt recovery. The second article defined the border in terms of a route survey based on coordinates and supposed "fixed points" of land. The Great Lakes border segment was delineated as:

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[41] Ibid.

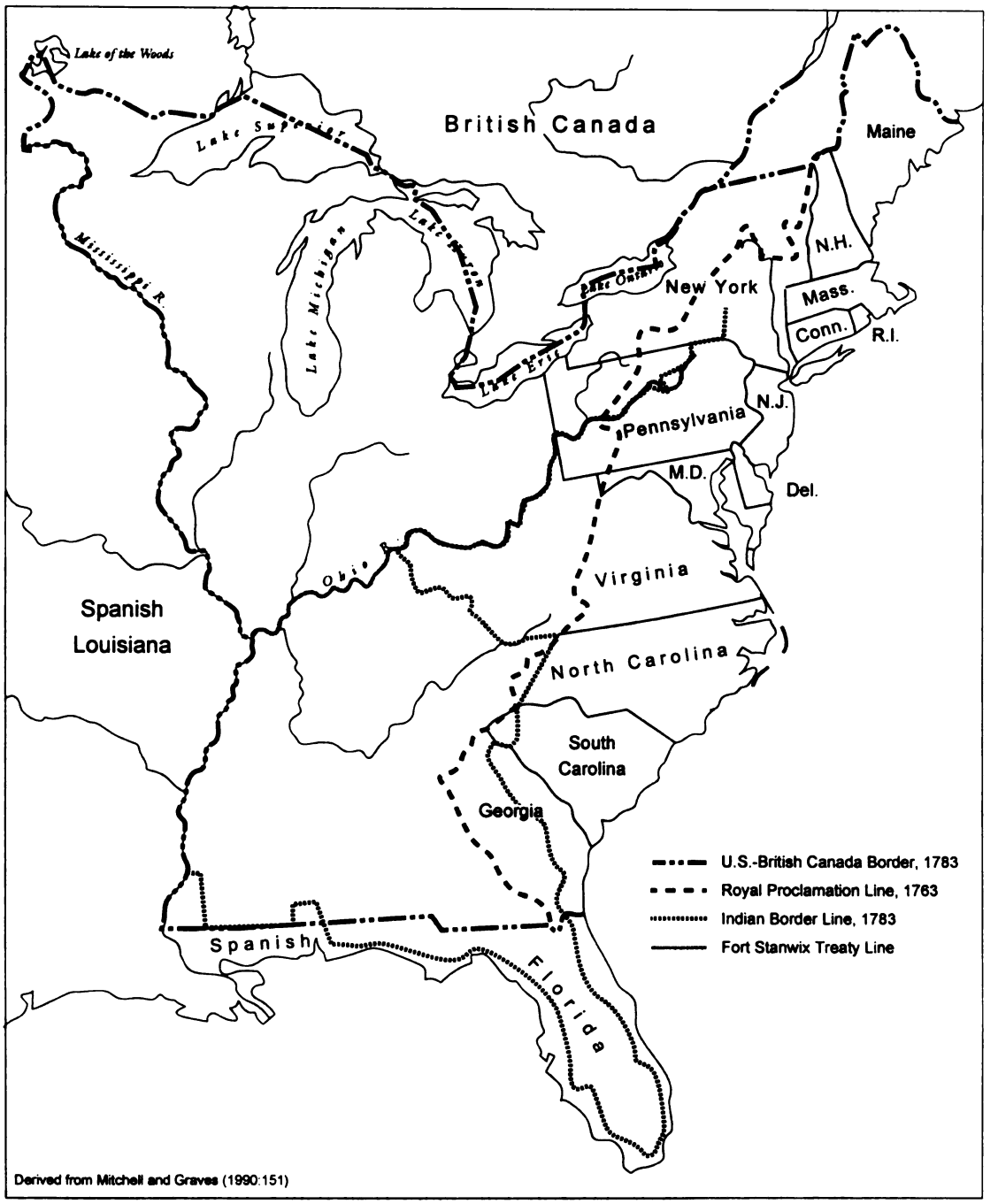

Figure 3: The International Border (1783)

> ...from thence by a Line due West on said Latitude until it strikes the River Iroquois or Cataraquy; Thence along the middle of said River into Lake Ontario; through the middle of said Lake until it strikes the Communication by Water between that Lake and Lake Erie; Thence along the middle of said Communication into Lake Erie; through the middle of said Lake, until it arrives at the Water Communication between that Lake and Lake Huron; Thence through the middle of said Lake to the Water Communication between that Lake and Lake Superior, thence through lake Superior Northward of the Isles Royal and Philipeaux to the Long Lake; Thence through the Middle of said Long-Lake, and the Water Communication between it & the Lake of the Woods, to the said Lake of the Woods; Thence through the said Lake to the most northwestern Point thereof, and from thence on a due west Course to the River Mississippi...[42]

While the above border description provided a temporary diplomatic solution to the question of borders, the vagaries would prove to be a source of conflict for decades. The phrase "middle of the river" could be interpreted as the equidistant point between riverbanks or the middle of the navigable channel. Since only two islands were mentioned and one of these proved fictitious, the status of the other islands in these bodies of water could be questioned. Another issue pertains to the accuracy of contemporary maps used in the negotiations. While maps such as those of Mitchell and D'Anville, and Bolton represented the state of the art in mapmaking for North America, gross inaccuracies, due to the lack of detailed measurements, were still present. Imprecise geographical knowledge of the region would persist until almost the middle of the nineteenth century.

For example, the true course and the source of the Mississippi River would not be discovered until the expeditions of Henry Rowe Schoolcraft in 1832.[43] Determining whether physical features such as "Long Lake" and the "Philipeaux" Island actually existed would require detailed survey and interpretation. In addition, the segment of the

[42] Ibid.; for the text of the treaty see 461-65.
[43] For a narrative of the Schoolcraft expedition see Mason (ed) 1993.

border from Lake of the Woods due west to the Mississippi River was a geographical impossibility, since the source of the Mississippi River is located approximately 150 miles south of Lake of the Woods. Yet the Lake of the Woods functioned as the southern limit of Hudson's Bay territory and conveniently straddled the 49th parallel. While this vague border was outlined on paper, its imposition and maintenance would not be realized immediately.

The Border as Theory versus Practice

The postwar period was characterized by a high degree of mutual fear and suspicion between British North America and the United States. From the U.S. perspective, Canada played the role of an obstructionist in U.S. economic pursuits and an agitator in U.S. domestic affairs.[44] Many regarded Canada as the British base of operations for continuing unofficial hostilities and intrigue. Canada was seen as a threat to restrict trade in the Great Lakes area, and its privileged economic status as a British colony prevented the United States from entering the West Indies trade. The Loyalists, as the bitter enemies of the Republic, were viewed with suspicion and loathing. They were accused of spearheading the military build-up along the border, promoting insurgency by enticing Vermont to join Canada, and fueling Shay's Rebellion of 1786.

Much of this cross-border tension stemmed from the surprising terms of the Treaty of Paris land settlement that infuriated many Canadian-based British military, merchants and furs traders, as well as many Native American groups. While the United States was awarded the expansive territory south of the "middle of the lakes" line, it did not have the

[44] A detailed discussion of the U.S. perception of Canada's obstructionist role in U.S. affairs can be found in Stewart 1992.

power and resources to police these borders immediately after the Revolution. Hence, the British were able to maintain their posts in U.S. territory, such as Oswego, Niagara, Detroit, and Mackinac, to continue their military and trade alliances with Native American groups and protect fledgling Loyalist communities along the border. Many merchants and officials in Canada also feared possible violent Native American attacks if the British suddenly withdrew from these areas. While this action was in violation of the Treaty of Paris, the British justified it by stating that the United States had not yet satisfied their treaty obligation to compensate the Loyalists for their wartime losses. Historiographically, compensation is treated simply as a stalling tactic by the British, but in fact the United States never honored its treaty obligation to compensate the Loyalists.

In addition to the retention of posts, political realignment in Canada was also seen as a prelude to hostility. In order to entice further U.S. immigration and reduce the French-Canadian power base, the Constitutional Act of 1791 split Canada into mostly Catholic francophone Lower Canada, and English-speaking Protestant Upper Canada complimented by British troops, militias, and elected assemblies. John Graves Simcoe, the first Governor of Upper Canada, urged the retention of border forts, constructed Fort Miamis in the Ohio County, and pressed for a new border well south of Lakes Erie and Ontario.[45] In the United States, these acts were perceived as hostile, and a prelude to a possible invasion.

The Native American reaction to the terms of the peace treaty was one of horror and disbelief. Many groups had fought successfully for the British cause, but more importantly to stem the tide of incursions into their legally recognized territories as per

[45]Callahan 1967, 29-30.

the Royal Proclamation and Quebec Act. The war had taken its toll on Native Americans who fought on both sides, fostering hostility and fragmentation within and between groups. The peace settlement made no specific mention of the Native American lands. Yet, the British forfeited their rights to negotiate with tribes for treaty land titles in the new U.S. territory. The United States became the political power that would negotiate title over aboriginal lands. However, Native Americans who had scored victories against the United States in the Hudson and Mohawk Valleys, Sandusky and Blue Licks, did not see themselves as vanquished.

Following the Treaty of Paris, official British policy was one of neutrality where Native Americans formed a buffer zone between the British and the United States. In the Great Lakes, the British Indian Department unofficially encouraged a number of cooperative military ventures, referred to as Indian confederacies, in the 1780s and early 1790s.[46] Indeed, Indian victories over the United States expeditionary forces led by Josiah Harmar in 1790, and Arthur St. Clair in 1791, effectively challenged U.S. control of the western borderlands. However, these successes were overshadowed by the defeat at the hands of the United States under General "Mad Anthony" Wayne at Fallen Timbers in 1794. The construction of U.S. posts in the Ohio country such as Forts Hamilton, Jefferson, St. Clair, Greenville, Adams, and Defiance was a signal to Native Americans and European powers alike, that the United States intended to police this border territory. The subsequent Treaty of Greenville imposed an Indian-U.S. settlement borderline from

[46] Details of various Indian confederacies can be found in Calloway 1987; Dowd, 1992; Allen 1993.

Cleveland south along the Cuyahoga River to Fort Laurens, west to Fort Recovery, then south to the junction of the Great Miami and Kentucky Rivers.[47]

Steps to Reconciliation

By the mid 1790s, British-U.S. relations were strained by a variety of border issues, trade restrictions, and a possible U.S. obligation, through a mutual assistance agreement of 1778, to assist France in a war against Britain. The resultant Jay's Treaty of 1794 (proclaimed February 29, 1796) was designed to address such controversies.[48] The second article provided for the June 1, 1796 withdrawal of British troops from all posts located in territory awarded to the United States by the Treaty of Paris. While this provision forced the evacuation of border forts in U.S. territory, it also stimulated the construction of new installations on the British side of the border to maintain a military presence. On the Ontario side of the Great Lakes, the British constructed Fort Wellington at Prescott, Fort George at Niagara-on-the-Lake as a replacement for Fort Niagara, Fort Malden at Amherstburg to replace Fort Detroit, and Fort St. Joseph in the St. Mary's River to replace Fort Mackinac.

Additional border issues in the treaty maintained free mutual access across the border, and the establishment of joint commissions to clarify border placement at the St. Croix River, and the western end of Lake Superior through to the source of the Mississippi River. The treaty also guaranteed duty-free cross-border trade in pelts and for "regular" items carried by Indians, and for goods in transit moving through portage on established trade routes. The mutual right to navigate the Great Lakes and their communicating

[47] Stanley 1983, 22.
[48] The text of The Treaty of Amity Commerce and Navigation, known as Jay's Treaty, see Bemis, 1962.

waterways was reiterated, as was the restriction on U.S. vessels to penetrate Canadian seaports, harbors, bays or creeks, except for bona fide trade between Montreal and Quebec. British vessels were also restricted from passing from the sea into U.S. rivers beyond the highest ports of entry for foreign ships. There were no provisions for limiting naval armaments or numbers of troops along the border.

Other articles addressed compensation for debts owed, navigation rights including limited trade with the West Indies, and tariff equity. Britain maintained its harsh "trading with the enemy" policies by defining the rights of search and seizure while the United States agreed to such terms. The treaty was much less explicit about the maritime rights of neutral countries, or the rights of individuals accused of offenses such as desertion and thus removed from ships. These maritime issues became a rallying point for the "war hawks" anxious for another war with Great Britain.

While this treaty relieved tension over the occupation of posts in U.S. territory, U.S. authorities were still concerned over the fact that the British merely located new posts a very short distance across a river or lake. Hence, British influence among the Native American groups manifest through the British Indian Department and fur traders was still a significant threat. Canada continued to be viewed by U.S. officials as the springboard for British interventionist policies of inciting Native American groups and attempting to block westward expansion.

The Louisiana Purchase of 1803 created further questions regarding the territorial borders of the United States and the presence of alien traders in its territory. Certainly, the territorial possessions of Spain and France in North America were an impediment to U.S. growth. Navigation of the Mississippi River and the occupation of the port of New

Orleans were two nagging examples of foreign intervention in U.S. affairs. The purchase would not only double U.S. territory but also reduce the influence of France and Spain. The Senate immediately halted negotiations on the segment of border from the source of the Mississippi to Lake-of-the-Woods citing the uncertainty of the actual size of the Louisiana Purchase. Further, the U.S. Territorial Governor of Louisiana, General Wilkinson, prohibited foreign citizens involved in the Indian trade from entering the Missouri or conveying foreign goods on the river. While trying to negotiate a continuation to Jay's Treaty, both sides presented numerous cases of abuses and illegal trade practices by the other.[49]

Rekindling Tensions

Many historians view the path to another war between Great Britain and the United States as inevitable by 1808. Maritime issues such as impressments and the Embargo Act, a desire to end Native American strife and foreign interference, and the conquest of Canada, provided sufficient ammunition for the pro-war forces in the United States. Ironically, the states most affected by maritime issues opposed the war. In the vote on the declaration of War in the House of Representatives, Massachusetts and Maine, Rhode Island, Connecticut New York, New Jersey and Delaware voted against declaring war.[50] Regardless of the situation, these areas still profited from the legal and illegal trade relations with British North America. Conversely, states with territorial aspirations in the west and/or "Warhawk" dominance such as Pennsylvania, Virginia, Kentucky, Tennessee, Georgia, and South Carolina voted in favor of war.

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[49] Callaghan 1967, 51-52.
[50] Stanley 1983, 40.

An Uneasy Peace

The Treaty of Ghent, which ended the War of 1812, restored all conquered territory *status quo ante bellum*.[51] Both parties felt that they had achieved victory in the war. While the United States could claim that this war ended European trade interference and impressments, British North America could claim that it repelled a series of invasions from the U.S. In any event, residual border issues of the Treaty of Paris and Jay's Treaty once again commanded attention.

Articles four through seven of the Treaty of Ghent appointed one commissioner from each side to oversee the border survey and division of contested territory. Article six assigned two commissioners for the area from where the 45th degree of latitude strikes the St. Lawrence River near St. Regis, New York, through the middle of the lakes to through Lake Superior. The commission was charged with determining the middle of the waterways and determining possession of all the islands not mentioned in the Treaty of Paris. The seventh article continued the responsibilities of the commission for the same duties from the water communication between Lakes Huron and Superior through to the northwestern point of the Lake-of-the-Woods.

U.S. Army Major Joseph Delafield provided a valuable narrative on the workings of this commission. This narrative was painstakingly edited by McElroy and Riggs, and the following discussion of that commission is derived from that work.[52] The commission faced several difficult challenges including inaccurate maps, vague treaty terms, the

[51] 51. The text of the Treaty of Ghent can be found in Heidler and (eds.) Encyclopedia of the War of 1812 1997, 583-86.
[52] McElroy and Riggs (eds.) 1943.

interpretation of the "true spirit" of the Treaty of Paris, and various personnel issues.[53] The U.S. delegation consisted of commissioner and former warhawk General Peter Porter, with Colonel Samuel Hawkins as Agent, Major Donald Fraser appointed Assistant Secretary by lot, and David P. Adams as Principal Surveyor. Delafield accompanied the commission as an observer but would later head the commission. The British Commissioner, John Ogilvy, died and was replaced by Anthony Barclay in June of 1820. John Hale became the British Agent at the end of 1817, while British Secretary Stephen Sewell resigned in 1819, leaving U.S. Major Fraser the Secretary and Dr. John Bigsby as Assistant Secretary. David Thompson was the chief of the British surveyors. Personality conflicts with Porter led to Hawkins resignation, so he was replaced by Delafield.[54] The commission held its first joint meeting May 23, 1817.

The independent surveys continued for several seasons so that by late June 1820, they had reached the Detroit area. By early August, both parties had begun their survey of the northern portion of Lake Huron.[55] Delafield commented on the importance of this area: "Drummond's Island and Isle St. Joseph are of the most considerable interest, as well on account of their positions as of territory; and more particularly Drummond's Island. To this island, now in possession of the British, the United States have reasons to maintain a claim."[56] In actuality, the survey work was completed in early July of 1821 and reported on in early August of that year.

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[53] Ibid., 34-47, for commission staffing issues.
[54] Ibid., 36-37.
[55] Ibid., 44.
[56] Ibid., 44, n. 133.

Not surprisingly, when both sides met on November 12, 1821, there was little initial agreement on their respective findings.[57] Terms such as "the middle of" rivers and lakes could represent an equidistant point between shores, or the middle of the navigable channel. There was further disagreement over the position of many islands. However, there was a general agreement on the line from St. Regis, New York, to the mouth of the Detroit River. An agreement over the islands in the mouth of the Detroit River was reached during a joint session held on June 18, 1822.[58] An extremely detailed island by island description of the placement of the border was presented at this meeting. This report was accompanied by a multitude of maps and legends with unnamed islands simply assigned a number.[59] The principle employed here was that islands situated on the border line were not to be cut in half, but rather awarded to one of the parties as a whole.[60] The foot of the Neebish Rapids in the St. Mary's River was judged to be the termination point for the sixth article of the treaty.

The commission would adjudicate the border according to the seventh article of the treaty. While it was hoped this portion of the border would be settled on as quickly as article six, this would not to be the case. Ironically, commissioners felt that the trigonometric method previously employed would not be required for this leg. Yet, several controversies arose over the identity and position of certain islands, rivers, and lakes during the joint commission. Once again, the inaccuracy of the maps and accounts that formed the basis of the 1783 Treaty provisions proved problematic. The stretch from

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[57] Ibid., 48.
[58] Ibid., 58.
[59] Ibid., 59-61.
[60] Ibid., 58, n. 179.

the Neebish Rapids to Lake Superior proved more difficult than expected and was not finalized until the Webster-Ashburton Treaty of 1842. The next controversy involved Philipeaux Island, as named in the 1783 Treaty. While no island by this name existed, the commission designated the Keweenaw Peninsula to take the place of Philipeaux Island for border placement.[61]

The next issue was to discover the position of Long Lake, which also had been named in the treaty. The search for this lake consumed an entire field season.[62] The treaty called for the border to continue from the middle of Long Lake through the water communication between it and the Lake-of-the-Woods. There were three possible routes out of Lake Superior. These included i) the most southerly route through Fond du Lac and the River St. Louis, and used by many U.S. traders, ii) a middle route through the Pidgeon River judged to be the "Grand Portage" in use until 1802, and iii) the northerly newer route through the Kaministikwia River used after 1803 by Canadian fur traders evading U.S. duties levied at the Grand Portage.[63] As the British had pressed for the southerly route, the U.S responded for the more northerly route even though Delafield believed the middle route was the correct one.[64] This situation was yet another issue that would not be solved until the Webster-Ashburton Treaty of 1842.

Still another problem involved identifying the northwestern point of Lake-of-the-Woods and its intersection with the 49th Parallel as per the treaty terms. A discrepancy of approximately 1/2° was found leading to a controversy that once again was not settled

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[61] Ibid., 70.
[62] Ibid., 71.
[63] Morse 1969, 71-77.
[64] McElroy and Riggs 1943, 81.

until the 1842 treaty when the border line was placed at 49° 23'55".[65] The reports of both commissioners were exchanged on December 24, 1827 but did not reach Secretary of State Henry Clay until March of 1828.[66] While agreeing on article six, they each stated their cases regarding the disputes in article seven complete with maps and testimonials. Ironically, it proved easier to negotiate the border from the Lake-of-the-Woods all the way to the Pacific Ocean. The United States proposed to extend the border along the 49th parallel but Britain rejected this placement in order to retain its claim on the Columbia River. As a compromise, the Convention of 1818 held the Oregon Territory beyond the Rocky Mountains an open area for ten years, subject to renewal. However, accepting this Lake-of-the Woods line meant the British were still shut out of the headwaters of the Mississippi River and a direct route to interior U.S. markets.

The Rush-Bagot Agreement of 1817 was designed to address growing post-war tensions by limiting naval forces.[67] Each side was allowed four armed vessels, one each for Lake Champlain and three reserved for the Great Lakes, none of which could exceed 100 tons nor have armament larger than a single 18-pounder gun. The arrangement was created largely to reduce the costs of maintaining armed Great Lakes fleets. The agreement also was initiated in part, over U.S. apprehension maintaining standing armed forces, and over British reluctance to maintain a western Great Lakes fleet. The British were investing heavily in the defense of the eastern Lake Ontario, Rideau Canal, St. Lawrence River, and Atlantic regions.[68] While historians have debated the relevance of

[65] Treaty text in Jones 1977 181-87. See Article Two for the degree measurements.
[66] McElroy and Riggs 1943, 110-11.
[67] Annals of Congress, 1st Cong., 2nd sess., 1943-53.
[68] Craig 1966, 151-53.

this treaty in Canada-U.S. border relations, it did reduce the military presence in border waters, thereby reducing at least one source of border tension. Prior to this agreement, both sides had also complained about the frequency of boardings by the other nation. In addition, by the close of the 1820s revenue cutters had disappeared west of Lake Huron and a number naval installations were closed down.[69]

A Test for the Peace

Another tense episode in Canada-U.S. border relations involved the quest for more representative "Responsible Government" as well as imperial control of lands and trade that turned violent in both Upper and Lower Canada in 1837-1838. This internal Canadian struggle took place in the context of resisting U.S. aggression while remaining within the British colonial system. Yet, many in the United States saw the struggle as another "Revolutionary War", and an opportunity to eliminate British interference and emancipate their Canadian neighbors. The rebel leader, William Lyon Mackenzie, drew heavy support from U.S. citizens through organizations such as the Hunters Lodges of New York and Michigan, and he established a camp along the border on Navy Island in the Niagara River. A detachment of the Royal Navy was ordered to attack the U.S. ship *Caroline* that had been supplying the Rebels. This force crossed the river, seized and burned the ship, and killed a U.S. citizen. The authorities in Lewiston, New York responded by arresting one of the participants for murder.

In 1838, government officials in both countries were concerned about a series of bloody but unsuccessful raids on Canadian border towns such as Prescott, Niagara, and Windsor. Clearly, while these were the acts of private citizens, a presidential declaration

[69] Callahan 1967, 101.

against the secret societies that eliminated them as a threat to peace along the border. It is critical to note that U.S. federal authorities dispatched troops to thwart planned invasions of Canada, and the United States arrested its citizens involved in these raids. This point illustrates the danger of dealing with a monolithic category such as the nation as a whole, especially in a border or frontier situation.

Completing the Peace

The Webster-Ashburton Treaty of 1842 represented another significant step in Canada-U.S. border relations. As discussed earlier, this treaty adjusted several areas of contention in the Great Lakes region. However, this treaty is best known for finally resolving the longstanding, and sometimes violent, New Brunswick-Maine border dispute. Neither side was particularly pleased with the outcome. In the United States, Daniel Webster was criticized for being fooled by his British counterpart even though the British conceded to most of the U.S. demands. British North American colonists felt Lord Ashburton's financial and family ties to the United States were a conflict of interest that led him to exceed to U.S. demands. Further, there was a sense that Britain sacrificed this territory "on the altar of Anglo-American rapprochement" [70]

This sentiment was solidified when the terms of the treaty of 1846 were announced. Britain agreed to extend the border along the 49th Parallel to Puget Sound through the Straits of Juan de Fuca to the Pacific Ocean, ceding the richest portion of the Columbia Valley and several excellent harbors to the United States.[71] Despite the inflammatory rhetoric in Polk's presidential campaign slogan of "54° 40' or Fight", Britain realized that

[70] Stewart 1992, 44.
[71] Cook and McNaught 1963, 92.

such an extreme position would not garner a great deal of support. Nevertheless, Britain once again seemed to sacrifice Canadian territory with amazing ease. These decisions signaled to British North America and the United States that Britain was eliminating the expense of her imperial interests.

Indeed, the repeal of the Corn Laws in 1846 signaled the end of the old system of colonial preferences and the British shift toward free trade. In language that foreshadowed the pro-NAFTA arguments of the 1980s, proponents of the 1854 Reciprocity Treaty called for a continental trading system and access to Canadian markets, while also deflecting annexation arguments. The treaty received less attention at the beginning in part because of the U.S. preoccupation with Mexican border issues and the overarching issues of slavery. However, in the following decade, the United States came to resent the apparent advantages the treaty bestowed on the British colonies.[72]

In 1867, the British Colonies of Nova Scotia, New Brunswick and the Canadas formed the Dominion of Canada. By 1871, the vast Hudson's Bay territory and British Columbia were added to the Dominion creating a unified entity whose motto would become "A Mari Usque Ad Mare" (from sea to sea). British forces also officially withdrew from Canada that same year.[73] Yet, the reasons for unification stemmed as much from mutual advancement as from mutual fear. Contacts with the Confederacy during the Civil War, and a fear of the largest standing army in the world at their doorstep prompted a great concern from these Canadian colonies. It would now be their task to promote an east-west political and economic alliance in the shadow of the United States.

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[72] Stewart 1992, 45-53.
[73] Whitfield 1981.

This examination of the formation of the Canada-U.S. border has demonstrated that vacillation between periods of war and peace characterized a great deal of North American diplomatic history. Further, it is clear that macro-scale and subregional levels did not necessarily coincide in the realm of international diplomacy and accommodation. Thus, one must examine the dynamics of subregional occupation, and its implications for cross-border contact.

Subregional Sequence of Occupation

This section outlines the historic sequence of occupation for the study area encompassing the St. Mary's River and Lake Huron borderlands. It describes both the individual sites used in this study, and provides a regional framework for understanding how these sites articulated with international border policy and practice.

The St. Mary's River has functioned as a transportation gateway into the heart of the North American continent for several thousand years. During the Contact Period, the area had first attracted European attention in the early seventeenth century. The French visited Sault Ste. Marie in 1641 and reported that approximately 2000 Native Americans had gathered at the Rapids.[74] In 1668, Pere Marquette established the Jesuit mission of Sault de Sainte Marie near the rapids located in present day Sault Ste. Marie, Michigan. Yet the threat of Iroquois attacks forced many to flee the area forcing the closure of the mission in 1689. The French shifted their focus to the Straits of Mackinac, constructing Fort du Baud in 1685, and the settlement at Fort Michilimackinac in 1715.

By the middle of the eighteenth century, the British were actively competing in the lucrative fur trade of the Northwest Territory. Fort Repentigny was constructed at Sault

[74] Thwaites 1959, vol. 52:201.

Ste Marie in 1751 to counter British influence in the region. The British regime in the area began after 1760, when they defeated the French in the French and Indian War, or the Seven Years War. Yet, the transfer of power was not to be smooth. By the summer of 1762, war belts had been circulating through Great Lakes Native American groups. During the spring and early summer of 1763, every British fort in the Great Lakes was attacked.[75] The details of the attack on Michilimackinac, staged in the midst of a lacrosse match, have achieved legendary proportion in history and folklore. While peace was made the following year, tensions and sporadic violence continued on for several years.

The British occupation of Michilimackinac that began in 1761 continued until 1780. In light of U.S. military successes in the Illinois and Ohio country, the fort was deemed indefensible and the garrison was moved to Mackinac Island. The construction of Fort Mackinac attested to the continued strategic importance of the Straits area in the eighteenth and nineteenth centuries.

After the American Revolutionary War, the British retained their Great Lakes posts in direct violation of the 1783 Treaty of Paris in order to maintain both their alliances with the Native Americans and their fur trade interests. However the posts, including Mackinac Island, were vacated in 1796 under the terms of Jay's Treaty, which specified the restoration of all territory according to the Treaty of Paris. From the 1790s through the War of 1812, there was a great deal of debate over the size of the U.S. forces and the utility of frontier posts to guard the border. Despite these controversies, Fort Mackinac became the sixth largest post in the U.S. in 1803.[76]

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[75] Cleland 1992, 34.
[76] Porter 1991, 31.

The British also turned over the Great Lakes posts of Oswego, Niagara, and Detroit. Hence, the British were forced to relocate their Straits of Mackinac area post to nearby St. Joseph Island. Despite the loss of Mackinac, the British hoped that the post at St. Joseph Island would become the center of the fur trade and protect British North America from possible attacks from more westerly U.S. posts including Mackinac Island.

Throughout the late eighteenth and early nineteenth centuries, European conflicts fused with North American issues culminating in the War of 1812. When war broke out the British used Fort St. Joseph as a staging area, quickly capturing Mackinac Island by taking the heights above Fort Mackinac. The British held the island for the duration of the war. Realizing this inherent weakness, the British also began construction of Fort George on the heights above Fort Mackinac.

The War of 1812 was officially ended by the Treaty of Ghent signed in December of 1814. Articles 6 and 7 provided for the return of several key posts, including Mackinac Island. The loss of this post was a crucial blow to British hopes for control of this area. The treaty reflected an attempt on the part of the British to scale down military operations in North America in order to concentrate on the Peninsular War.

This policy was not popular with the military and civilians in the Western Great Lakes who had fought to consolidate the fur trade territory. In fact, the exportation and profitability of furs reached a peak between the end of the War of 1812 and the late 1820s.[77] When the treaty terms were announced, Robert McDouall, British Commandant of Mackinac, commented "Our negotiators as usual have been egregiously duped...they have shown themselves profoundly ignorant of the concerns of this part of

[77] Cleland 1992,179.

the Empire."[78] McDouall expressed further concern over the loss of influence with Native American groups: "It will retire us out of the reach of the Indians altogether, and give the finishing blow to whatever influence we yet possess amongst them. The surrender of this most important island, the key to the whole western country."[79] The British viewed the Native Americans as a buffer between the United States and the territory of trading establishments such as the Hudson's Bay Company and the Northwest Company. Despite these local protests, Mackinac Island was handed over to the United States on July 18, 1815. Pressure to evacuate Mackinac Island increased as the United States refused to return Amherstburg to the British until Mackinac Island was returned in kind.

The British already had been searching for a nearby strategic site for a post to counteract the influence of Fort Mackinac in the northern Lake Huron basin. While most of the Fort St. Joseph buildings were burned by U.S. troops, the British repaired several structures and reoccupied the island briefly during the summer of 1815. Yet, St. Joseph Island was never well suited to fortifications and did not provide a deep, sheltered harbour. However, Drummond Island, as part of the Manitoulin Chain of Lake Huron, seemed an ideal site on the British side of the border.[80] This island, approximately 45 miles northeast of Mackinac Island, commands approaches both to the Straits from the north and the entrance to the St. Mary's River from both the east and west. For the British, the strategic value of the Detour area had been underscored by both the

[78] Lt. Col. Robert McDouall to Captain A. Bulger, May 2, 1815, NAC, RG 8, Vol. 688.
[79] Lt. Col. Robert McDouall to Lt. Col. Foster, May 15, 1815. **MPHC** 16:104.
[80] archaeological and documentary evidence for Fort Drummond is discussed in Appendix 1.

disruption of their supply lines, and the capture of the U.S. vessels ***Tigress*** and ***Scorpion*** in the late war.

A correspondence from McDouall to Sir George Murray described the site:

> The new post on Lake Huron has been at length fixed upon by Capt. Payne, R. Engineers (who arrived here the 13th) Capt. Collier, R.N. and myself. The situation combines several important advantages viz- an admirable harbour, proximity to the Indians, and will enable to command the passage of the Detour, giving our vessels the double advantage of a good anchorage in that strait in addition to the fine harbour adjoining. The ground fixed upon for the new post, and which was best calculated for the protection of the harbour.[81]

Among the approximately 350-400 people evacuated to Drummond Island were a number of soldiers, Indian Department officials, and traders. The British Indian Department was a crucial element in frontier politics and a number of Indian Department officials were an important part of the contingent that arrived at Drummond Island. The British Indian Department had been founded in 1755 on order to gain the allegiance of Native American groups. This formal unit of the British Army sought such allegiances and engaged in gift-giving and trade relationships to cement a British-Native American union. The nature of this relationship was born out of the mutual need for protection and survival. The economic and social aspects of this alliance became increasingly important to both parties. The Indian Department spent vast sums of money for gifts and annuities issued during councils in order to court allegiance and protect fur trade interests.

During an Indian Council held on the island on June 29, 1816, Lieutenant Colonel William McKay, Superintendent of the Indian Department, told the Native Americans

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[81] Lt. Col. Robert McDouall to Sir George Murray, June 24, 1815. NAC, RG8, Vol. 688:138-140.
[82] Lt. Col. W. McKay "Minutes of an Indian Council at Drummond Island, June 29 1816", **MPHC** 16: 479-486.

that they would offer no assistance to an Indian confederacy against U.S. fort-building in Indian territory. The Native Americans were told to remain peaceful with the United States, but to continue visiting the British.[82] The Native Americans continued to visit British posts such as Drummond Island and Amherstburg in an effort to place pressure on the British to take a more active role against the United States. During a Council held in August 1817, Sauk Chief Blackhawk admonished the British:

> You was not afraid to bring us our Great Father's bounty when our hatchet was still red with blood. Why can you not do it when our women and children are poor and we are threatened with the loss of our lands?[83]

Despite the British record as unreliable allies, the British-Native American connection, emphasized through such councils, was but one of the strategies used by Native American groups to manipulate both powers against each other. The Native Americans were easily able to fuel the suspicions of Michigan Territorial Governor Lewis Cass and U.S. Secretary of War John C. Calhoun. Both individuals were War of 1812 veterans and saw British-Native American rendezvous as opportunities to plot against the United States.

The strategy of pitting Britain and the United States against each other was somewhat successful in temporarily altering U.S. Indian policy in the Northwest Territory. While the United States was forced to offer the Native Americans increased rations and other incentives at Mackinac Island, it also threatened to withhold any benefits from Native Americans who visited British posts.[84] However, British Indian Department records

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[83] Drummond Island Council, August 1817. NAC, MG19, McKay Papers F29: 1-7; also in NAC, RG 10, Vol. 32: 19172-19177.
[84] John C. Calhoun to Lewis Cass, August 30, 1819, Vol. 10:854 in C.E. Carter (ed.) **The Territorial Papers of the United States**, Government Printing Office, Washington, D.C.

show that in the year 1823, for example, a total of 3,333 Native Americans visited Drummond Island and received gifts and rations.[85] The British military, through the Indian Department, spent vast sums of money on these gifts in order to court Native American allegiance. The crossing of the border to receive British presents continued on Manitoulin Island until the early 1840s.

Certainly there was no single uniform set of responses or strategies employed by Indian groups to address the complex events that threatened their culture. In fact within most Algonquin tribes, there was disagreement over allegiances and strategies to deal with the U.S. and British. Yet, the act of simply crossing the border caused great concern for both British and U.S. officials. Native Americans groups skillfully manipulated these fears by visiting both sides and threatening more permanent moves to one side or the other.

From a geopolitical standpoint, Great Lakes groups especially those further from the border and deep in U.S. territory, did not view the British as a viable ally and negotiated treaties with the United States. These groups recognized the growing military power of the United States through its increasing ability to engage the British successfully and to enforce territorial sovereignty after the War of 1812.

Neither the United States nor the British were anxious to go back to war, but both were concerned about cross-border trade and the Native American presence. While local British authorities were sympathetic to the Indian cause, colonial officials had been ordered not to construct any new fortifications. The western Great Lakes installations

[85] Col. William Claus "A Return of Indian of Upper Canada for Whom Presents Specified in the Annexed Estimates (1823)", NAC, RG 10, Vol. 15: 12184-12188.

were put on hold while a new emphasis was placed on fortifications and canals in the eastern Great Lakes and the Maritimes.

Moreover, the United States realized that the British presence was also tied to the fur trade. Luring away Native American economic ties and allegiance from the British would simultaneously reduce British influence along the border while bolstering the U.S. position in the region. The U.S. policy simultaneously was to exclude the British from trading in the United States, and replace the British with U.S. companies. Firms such as the American Fur Company headed by John Jacob Astor, and Alexander Ewing of Fort Wayne, Indiana, were called on to implement this policy to wrest the fur trade away from British interests.

This lobby was influential in creating the 1816 law interdicting trade with U.S. Indians and licensing only U.S. citizens for this trade. This law enabled Astor to buy out his Canadian partners in the Southwest Company. The irony of this cross-border trade regulation lay in the fact that both Astor and the U.S. government knew British and Canadian field personnel were critical to U.S. commercial success. In 1817 and 1818, Ramsay Crooks, Chief Factor for the American Fur Company, employed more than 125 traders from Montreal. Crooks himself was a British subject and needed a special passport to travel in the United States.[86] Upper Canada also imposed a protectionist measure through the Tariff Act of 1816, as retribution for U.S. trade policies, but more importantly in order to preserve its share of the carrying trade amidst talk of free trade.[87]

Continuing in the policy to avert direct military confrontation, the United States also

[86] Haeger 1991, 195.
[87] Stewart 1992, 40-41.

reoccupied old forts and constructed a chain of new forts in the Western Great Lakes to monitor the border. The United States reoccupied Fort Mackinac and continued the construction of the fort on the heights renaming it Fort Holmes. In May of 1820, an expeditionary force under Governor Lewis Cass left Detroit to investigate the source of the Mississippi River and secure a site for a military post at Sault Ste. Marie to counteract British influence in the area. After much heated debate, the Chippewa ceded a tract of land on the south side of the St. Mary's River. The fort was garrisoned from 1822 through the 1840s. After that time, the post was occupied sporadically by militia and regulars.[88]

Construction of Fort Gratiot at present day Port Huron, Michigan actually began in 1814.[89] It was built to control shipping access through the St. Clair River at Lake Huron, and simultaneously protect Detroit from British attacks from the north while serving as a base from which to launch attacks on the British. While the fort did not function as a trading post, military staff nevertheless monitored Native American activities such as trade and fishing. It was abandoned briefly in 1821, as forts were constructed further north and west to counter British influence and trade. A second fort was constructed on the same site in 1830, and it continued in service until 1879. Similar to Fort Brady, it was occupied sporadically in times of conflict with Indians, Canada, or Mexico.[90]

As British-U.S. relations steadily improved, the need for border installations to maintain a full garrison gradually decreased from the 1820s to the 1850s. In addition, the Boundary Commission had determined in 1822 that Drummond Island was belonged the

[88] Demers 1990.
[89] Archaeological and documentary evidence for Fort Gratiot is discussed in Esarey 1991.
[90] Ibid., 49-54.

United States. Assessing the state of British installations in Canada, the Smyth Commission of 1825 recommended that the Drummond Island garrison should relocate to the military and naval establishment at Penetanguishine on the eastern shore of Lake Huron. The report also suggested diverting the Native Americans to Fort Malden Amherstburg for their annual visits.[91]

The evacuation of the post on Drummond Island took place in November of 1828. The British occupied this post until the Boundary Commission released the agreement on the placement of the border under Article 6 of the Treaty of Ghent. On November 14th, the United States took possession of the island and the brig carried the garrison to Penetanguishene, arriving a week later. The evacuation of Drummond Island drew to a close the final episode of the struggle of the Old Northwest Territory. The long-term importance of this area has been highlighted by several centuries of struggle between Native Americans, France, Britain, and the United States. Yet, for all of its former strategic importance it was never again occupied as a military post.

There do not seem to be any references in the documentary record for U.S. forces occupying the installation after the British evacuation. Indeed, U.S. military correspondence mentioned that only one U.S. officer was sent to accept the public buildings upon the evacuation, and a local resident was to be appointed as the caretaker.[92] However, there are sporadic references to the island in the 1830s, and at least one Indian council held on the island on September 21, 1831.[93] Even in the late 1830s, U.S.

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[91] Sir James Carmichael Smyth "Report to the Duke of Wellington Relative to His Majesty's North American Provinces (1825)", NAC, RG8, II, Vol. 6.
[92] Captain R.A. McCabe to Colonel R. Jones, Adjutant General, November 3, 1828, NAC, MG24, F60:35.
[93] Henry R. Schoolcraft to G. Porter, September 26, 1831, NAM, M234, Reel 420:657.

Government officials expressed concern over the British influence from Manitoulin Island with Indian groups living in the border region.

In terms of military threats, since the international border in the western Great Lakes had stabilized by the middle of the nineteenth century, fort garrisons comprised a handful of regulars and state or provincial militias carrying out training exercises. Occasionally, forts were reactivated during times of tension such as the Rebellions of 1837, the Mexican-American War, and the Civil War. The Webster-Ashburton Treaty of 1842 settled the territorial questions associated with the area between Neebish Island and Sugar Island. The "Soo Canal" at Sault Ste. Marie, Michigan was opened in 1855, fostering further cross-border economic and social contacts.

The above presentation of the subregional sequence is an outline of the occupation of prominent sites in the area and the significant events that generated their founding and affected their subsequent development. Both the macro-regional and subregional discussions highlighted the shifting sets of relations, and cases of diverging perspectives between these foci which directly influenced the placement of sites, the nature of interaction between sites, and formed the basis of subsequent international border policies.

These discussions reveal that following the formation of the border in 1783, four distinct time periods of Canada-U.S. border relations can be identified. These are 1) the period from 1783-1796 when posts when the British continued to occupy Great Lakes posts in U.S. territory; 2) the period between 1796-1812 when the U.S. began to occupy these posts by treaty and the border became relatively stable; 3) the War of 1812; and 4) the postwar era between 1815 and the middle of the nineteenth century.

In order to assess the applicability of the Martinez model for the historical sequence of this region, these patterns will be examined in closer detail in the next chapter. Primary and secondary documentary sources will be discussed in order to determine whether cross-border relations at sites in the region during these periods are consistent with those posed in stages of the Martinez model. The degree of consistency will determine the level of model applicability, and provide the basis for assigning corresponding archaeological components into these stages.

Chapter Four - Documentary and Archaeological Methods and Analysis

This chapter presents the methods employed to assess the nature of social group interaction in the context of the political border in this region. The preceding chapter established the historical sequence for this region and identified four major periods of cross-border interaction. These periods will serve as the basis for further examination of patterns in cross-border relations and their material expression. The approach taken in this study consisted of five steps outlined below: 1) model applicability assessment; 2) time period and site placement; 3) present corresponding archaeological contexts and develop material correlates; 4) present data sets and develop/test material expectations; and 5) analysis and reconciliation of data sources.

1) *Model Applicability Assessment*:

This step involves comparing the four periods of border interaction identified in the preceding chapter to the sets of cross-border relations proposed in the Martinez model. The comparison utilizes primary and secondary documentary sources on cross-border interaction in the region for these time periods. Essentially, this step assesses the applicability of model stages to the patterns revealed by the documentary data from the region.

2) *Time Period and Site Placement*:

If the model is deemed applicable based upon sufficient documentary evidence, then the time periods, and the sites occupied during these periods, will be assigned to the appropriate model stage. This placement reflects a high degree of similarity between cross-border relations observed in the region, and those posed for specific model stages.

3) *Present Corresponding Archaeological Contexts and Develop Material Correlates*:

This step details each archaeological component, and provides a discussion on the nature of the material culture. Further, it develops the expected material correlates of the Martinez such as materials, artifacts, or artifact attributes diagnostic of cross-border manufacture, and hence, indicative of some form of cross-border interaction. In addition, the respective military supply chains will be outlined. Within the context of this discussion, it is important to note that the precise mechanisms responsible for this interaction often remain undetectable.

4) *Present Data Sets* and *Develop/Test Material Expectations*:

The archaeological data sets are presented as tables with an accompanying textual explanation of table categories and units of measurement. A series of general material expectations, based on stage-specific levels of interaction, will be posed for the distribution and relative frequencies of cross-materials. This step must also determine the appropriate inferential statistical testing methods based on the nature of the data. Finally, specific hypotheses regarding the distribution and frequencies of materials will be generated and statistically tested.

5) *Analysis*:

This step involves analysis of the outcomes of material hypothesis tests and their implications for the study of cross-border material culture. This interpretive discussion focuses on the factors affecting the outcome of testing such as sampling issues, and the historical issues surrounding material production and marketing.

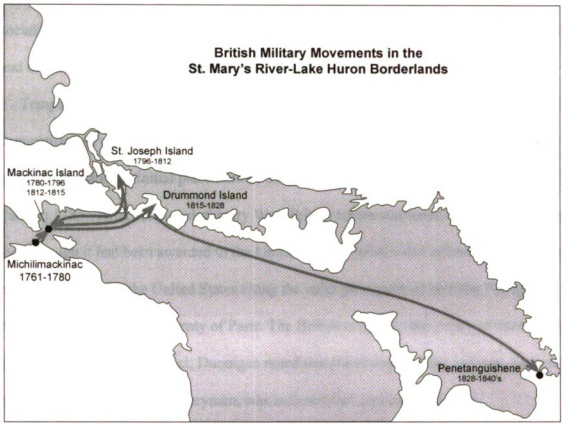

Figure 4: British Military Movements in the St. Mary's River-Lake Huron Borderlands (1761-1828)

Model Applicability Assessment

Since individual sites often function as the interface between political, economic, and social issues, a regional framework must be adopted to incorporate all parties concerned, and to discover how these groups interacted over time and space.

Temporally, the first site component to be placed into the Martinez model is the occupation of Fort Mackinac by the British from 1781 through 1796. This occupation actually overlaps the initial placement of the political border according to the Treaty of Paris in 1783. After the Revolutionary War, British forces continued to garrison the post even though it had been awarded to the United States. Britain also refused to normalize trade relations with the United States citing the strict provisions of both the Navigation Acts and the terms of the Treaty of Paris. The British continued the policy of controlling shipping on the lakes. In fact, Dunnigan noted that the strength of the garrison, especially the increased number of artillerymen, was indicative of continuing tension.[1]

The British continued to monitor the fur trade through the issuance of licenses while post commanders and lieutenant governors of areas such as Niagara, Detroit, and Mackinac kept track of traders' activities and cross-border contacts. Tensions between British North America and the United States continued as the British unofficially encouraged Indian confederacies, while the United States mounted several expeditions in the 1790s against Native American groups to assert their sovereignty over their newly acquired territories. However, the United States did not feel it had the military capability to dislodge the British from the chain of occupied border posts from Oswego, on the southern shore of Lake Ontario, to Mackinac Island. The mutual suspicion and controls

[1] Dunnigan 1973, 26.

on cross-border trade, created unfavorable conditions for cross-border contact during this period. These conditions argue strongly for placing this Mackinac Island occupation into the alienation stage of the Martinez model.

However by 1796, British-U.S. relations seemed to be improving in nature. Jay's Treaty provided for the return of British occupied Great Lakes posts in U.S. territory, including Fort Mackinac. While the British respected the border, they strategically situated posts such as Fort St. Joseph to counter the newly occupied U.S. installations. While the mutual right to navigate the Great Lakes had been reiterated in the treaty, both sides continued restrictions on foreign vessels accessing their interior waterways.

The treaty also provided mutual cross-border access for individuals, pelts, and goods in transit along established trade routes. British-owned firms such as the Michilimackinac Company and the Northwest Company continued to dominate the fur trade in the Upper Great Lakes, utilizing posts on both sides of the border. In order to control this British influence, the United States passed new and sweeping regulations regarding the collection of import duty and securing revenue.[2] However, these duties failed to deter British cross-border fur trade commerce. Upper Canada itself had resisted the establishment of customs until 1801.[3] The vast border, delineated mostly through waterways, presented numerous difficulties for customs collection and enforcement. Until the 1840s, much of the duty was collected in Lower Canada, due to its control of access on the St. Lawrence River.

Emerson et al. and Vincent both noted these two phases of relations between Forts

[2] U.S. Department of Treasury 1988, 23.
[3] McIntosh 1984, 186. An interesting discussion of early customs issues can be found on pages 186-199.

Mackinac and St. Joseph in that decade.[4] The first phase was characterized by good relations and cooperation between the posts. In 1799, George T. Landman, a British officer at Fort St. Joseph, traveled to Mackinac Island order to obtain specie to pay the contractors constructing the post.[5] Further, both sites offered assistance in arresting the deserters of the other group. In April 1805, Lieutenant Colonel Jacob Kingsbury, the U.S. commandant of Mackinac, offered his assistance in apprehending 12 deserters from the 49th Regiment of Foot who deserted by stealing a boat and sailing to the Straits of Mackinac. In July 1805, Captain Alexander Clerk, commandant of Fort St. Joseph reciprocated after nine U.S. soldiers deserted from Mackinac Island.[6]

Since Upper Lakes military posts occasionally experienced supply shortages and communications problems, they cooperated in terms of logistics and supplies. Several instances of forwarding or loaning provisions such as salt pork had been documented between 1796 and 1807. [7] The U.S. post on Mackinac even handled correspondence between Fort St. Joseph and Upper Canada via Detroit.

Yet, it would seem that relations were deteriorating by 1807. While the United States tried unsuccessfully to counter the British fur trade with its factory system, John Jacob Astor's American Fur Company began to challenge British control with the endorsement of the U.S. government. Jefferson's Embargo Act of 1807 furthered these aims, but threatened the maritime trade along the eastern seaboard. Even though this act was repealed in 1810, it was reinstituted in March 1811. Canadian merchants also submitted

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[4] Emerson et al. 1977, 142-147; Vincent 1978, 171-176.
[5] Vincent 1978, 172.
[6] The correspondence between Fort St. Joseph and the British Military Secretary in Quebec regarding these incidents have been documented in Vincent 1978, 293.
[7] Major Alexander Campbell to Military Secretary James Green, January 15, 1807. **MPHC** 15: 39-40.

formal complaints in 1808 regarding their exclusion from the Louisiana Territory, illegal maritime searches and seizures by U.S. officials, and exclusion from ocean ports.[8] British citizens recorded several incidents of bad treatment, seizures of goods, and arrests by U.S. authorities at Mackinac from 1805 onwards. By 1809, both sides were actively courting Native American allegiances and suggesting they would attack the other in the near future.[9] Despite the continuing tensions, many individuals still maintained their family and fur trade contacts. In June of 1812, the United States declared war on Great Britain and its dependencies. Once again, the region was at war.

The examination of the period from 1796 through 1812 for this region demonstrates the volatility of international relations played out through the complex web of local ties and affiliations. In this period, the first phase of relations spanning 1796 to1808, brought a level of stability to the border. While cross-border traffic was regulated by both national governments, the fur trade was able to manipulate or ignore these regulations successfully in order to maintain cross-border contact. It would also seem that while the U.S. and British military installations in the region were on cordial terms, there was not a great deal of official cross-border contact. The second phase from late 1807 through 1812 witnessed a rapid deterioration in British-U.S. relations at the national level spurred by events outside of the Great Lakes region. Yet, growing competition in the fur trade and the quest for land nevertheless articulated this region with international political competition. Overall, this period is best classified as a stage of coexistence with a relatively quick deterioration toward alienation after 1808, and culminating in the War of

[8] Callaghan 1967, 54.
[9] The comments of Governor Hull of Michigan are contained in NAC, RG10, 5b, Volume 28. Indian Department policy was discussed in Lee 1966, 10; Emerson et al. 1977, 147; and Vincent 1978, 174-176.

1812. During this second phase, official cross-border contact seems to have occurred in lower frequency than the first phase.

Clearly, the state of war in the region would be classified as a stage of alienation in the Martinez model. Yet since there were no site components that could be exclusively dated to a wartime context, War of 1812 contexts as a stage of alienation could not be archaeologically tested.

Following the return of posts such as Fort Mackinac and Amherstburg to their prewar status, the border area stabilized once again. However, the "shooting war" was replaced with a "war of words" waged between local officials such as Lieutenant Colonel Robert McDouall, former commander of Mackinac and subsequently Drummond Island, and Mackinac-based U.S. Indian Agent William Puthoff. One such controversy involved the land claims, commerce, and influence of Elizabeth Mitchell.

Elizabeth Mitchell was raised at L'Arbre Croche and was a member of both the Ottawa and Chippewa communities.[10] She married Surgeon's Mate David Mitchell in 1776, and the couple settled on Mackinac Island. While David resigned from the British Army, he remained on the island tending to the garrison and community. The couple developed a thriving fur trade business and become the center of social life at Mackinac. They were British partisans and marshaled native and fur trade assistance for the British in the War of 1812. After the war, David left for Drummond Island while Elizabeth and several children tended the business on Mackinac.

The Chippewa gave her Round Island in 1814 as a token of their affection. However, Puthoff later disputed her claim on the basis that the entire Straits area was U.S. property

[10] Armour 1982. In addition, a detailed study of Metis identity during this period can be found in Jarvis 1998.

following the Treaty of Ghent. He further accused her of inciting Indians against the United States.[11] By November 5, 1815, McDouall referred to Puthoff as "insignificant, puerile, and absurd" and felt that additional correspondence was futile.[12] Further, a notice from Puthoff, posted on the door of the parish church on Mackinac Island, banned Elizabeth Mitchell from dealing with any Indians and threatened a civil tribunal. Puthoff also forbade the Mitchell children George and Daniel from similar dealings.[13]

Elizabeth fled to Drummond Island to visit her husband while the situation diffused itself. Ironically, Puthoff was later dismissed for not issuing trading licences to foreign nationals in the employ of the American Fur Company, while McDouall would retire several years after the war. Moreover, in 1816, Elizabeth Mitchell hosted the wedding of Captain Benjamin K. Pierce, U.S. Commandant of Mackinac, and the brother of future U.S. President Franklin Pierce.

U.S. accusations of inciting Indians, buying scalps, and conspiracy to attack Mackinac were leveled against British Indian Department Lieutenant Joseph Cadotte. The British held a court of inquiry in October 1815 to address these allegations, but found no postwar misconduct and Cadotte was not charged.[14]

In the spring of 1816, the Earl of Bathhurst instructed Lieutenant Governor Gore that all post correspondence with the United States must first be directed to the British Minister in Washington who would take up the matter accordingly.[15] These instructions

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[11] McDouall to Major General F.P. Robinson, K.L.B., December 2, 1815. NAC, RG8, Vol. 260: 71-73.
[12] McDouall to Lt. Col. P.L. Chambers, November 5, 1815, NAC, RG8, Vol. 515: 82-87.
[13] William Puthoff to Elizabeth Mitchell, October 5, 1815, NAC, RG8, Vol. 515:92-96.
[14] Robert McDouall, G.G. Cochrane, W.R. Payne, R. Stephens, and T.G. Anderson co-authored "Proceedings of a Court of Inquiry held at Drummond's Island Oct 10, 1815", **MPHC** 16:327-41.
[15] Earl of Bathurst to Lieutenant Governor Francis Gore, March 13, 1816, NAC RG8, Vol. 674:25.

were issued, in part, to diffuse cross-border incidents and antagonism. Unfortunately, these orders were disregarded following events surrounding the British search of the U.S. Brig **Union** off Amherstburg in July 1816, creating an international incident magnified well out of proportion. In fact, the head of British naval forces, Commodore E.W.C.R. Owen, received an "unfavourable reception" when he visited Fort Gratiot in the summer of 1816, prompting other British officers to avoid this post.[16] Yet, against this negative picture of early postwar British-U.S. relations, it must be emphasized that U.S. ships routinely were hired to carry correspondence and supplies to British posts.

U.S. Boundary Commissioners and staff made several trips to Drummond Island and were treated cordially. Colonel Hawkins and several U.S. officers visited the post Drummond Island and stayed for an entire week in November of 1816.[17] In 1818, a U.S. merchant schooner and the U.S. armed schooner **Porcupine** visited the Island. While several officers paid a short visit to the island, Major General Macomb declined an invitation.[18] Commissioner Major Joseph Delafield spent several days on the island in the fall of 1820, and was impressed by the hospitality of Mrs. Solomon, the wife of British Indian Department interpreter William Solomon.[19] Another glowing account of Drummond Island hospitality came from the journal of Thomas McKenney on his way to negotiate the Treaty of Fond du Lac in 1826.[20]

Yet, the Cass expedition to the Lake Superior country encountered border tension when it arrived at Sault Ste. Marie in the summer of 1820. Cass sought to assert U.S.

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[16] Lt. Col. E.W.Durnford to Military secretary Lt. Col. Addison, September 3, 1816, NAC, RG8, Vol. 559:98-100.
[17] Lt. Col. J. Maule to Major General J. Wilson, November 9, 1816, NAC, RG8, Vol. 260:490-92.
[18] Major T. Howard to Lt. Col. C. Foster, August 12, 1818, NAC, RG8, Vol.516:16.
[19] McElroy and Riggs 1943, 317-319.
[20] McKenney 1827 [1972].

sovereignty over the area and eliminate Indian resistance, as well as negotiate a treaty for building a post to counter the influence of Fort Drummond. After the initial pleasantries, land cession talks broke down and both sides felt armed confrontation was imminent. The bloodshed was averted by the political and spiritual sway of Ozhawguscodaywaquay or Susan Johnston, the influential Ojibwa wife of fur trader John Johnston.[21] Cass later obtained a session and Fort Brady was constructed on the U.S. side of the St. Mary's River in 1822. After 1820, social relations in the area seemed to improve. The Ermatinger trading family who resided on the Canadian side of the St. Mary's River hosted many regional social events, including a lavish New Year's Eve party in 1823.[22] Expedition member and U.S. Indian Agent, Henry R. Schoolcraft, later married Jane Johnston, the daughter of John and Susan Johnston.

After the War of 1812, Native Americans employed various strategies to minimize the loss of territory and alter the trajectory of assimilation. Yet, while Native Americans realized that armed conflict was increasingly less viable, the threat of such conflict was a powerful tool. Groups visited posts on both sides of the border to continue trading relationships and play-off both sides against each other. U.S concerns over Indian allegiances in the region continued until at least 1840.

While the Rebellions in Upper and Lower Canada in 1837-1838 sparked tension and violence, it is critical to note that U.S. federal authorities dispatched troops to thwart planned invasions of Canada, and both Britain and the United States arrested their citizens involved in these cross-border raids. This conflict underscored not only the U.S.

[21] Cleland 1992, 181-86.
[22] Ermatinger Family Correspondence (1821-1909), NAC, MG19, A2, Series 4, Vol. 1, File 1:21.

federal government's commitment to peace with the Canadas, but also the internal conflict between this national policy and the agenda of many border area residents.

After attending a gift-giving ceremony on Manitoulin Island in 1839, Lieutenant Andrew Agnew of the 93rd Highland Regiment and several other British army officers toured several U.S. Great Lakes military posts. Upon visiting Fort Brady, he noted the soldiers were "really very clean and smart" and was "delighted with the whole days amusements." Agnew also stated "The American officers sent us several joints of beef and a large quantity of ice, both very acceptable."[23] The party also visited Mackinac Island and spoke positively of the officers. They made several purchases at island stores, including a quantity of Dublin porter, and visited the home of Henry Schoolcraft.[24]

Yet, Agnew's account of the landing at Sarnia illustrated underlying tension in this area of the border: "Our formidable appearance occasioned our being challenged and nearly fired into by the Militia, however, we convinced them we were not Yankees and allowed to land."[25] It would seem the attack by a U.S. based civilian force against Pelee Island, near Amherstburg, the previous year lead to heightened suspicion and increased border patrols. However, the party did not encounter any such difficulties when they visited the bustling commercial center of Detroit.

The postwar relations in the region can be characterized as a stage of coexistence, consisting of an intermittently hostile phase from 1815 through to 1820, and a more peaceful phase from the 1820s through the 1850s. The only major challenge to the peace

[23] Agnew's account is presented in McLean 1999. His description of the Sault area is listed on pages 39-46.
[24] Ibid., 48-49.
[25] Ibid., 55.

was the Rebellions of 1837-38, but the joint policy of punishing citizens for engaging cross-border violence squelched the possibility of war.

Hence, the postwar occupation of Forts Brady, Mackinac, Gratiot, and Drummond represent a stage of coexistence. Overall, the post-War of 1812 stage of coexistence was characterized by higher degrees of both official and personal contacts between sites. Even though the U.S. Government tried to control foreign participation in the fur trade, firms such as the American Fur Company hired hundreds of Canadians to staff their operations. To this end, the U.S. government reduced cross-border participation in the fur trade, but certainly did not eliminate the Canadian fur trade presence in the United States. As the fur trade waned in the late 1830s, newly emerging economic patterns embraced foreign markets and trade, thus encouraging cross-border contacts.

Time Period and Site Placement

The initial alienation stage of this study was represented by only one site; the British occupation of Fort Mackinac from 1781 through 1796. This site became the dominant regional center, and British forces continued to garrison the post even though it had been awarded to the United States. While the United States occupied territory south of this border region, it did not feel it had the military capability to dislodge the British. The inability to populate a region and assert national sovereignty reflected a high degree of alienation between nations.

Yet, the combination of a diplomatic solution and a growing U.S. military presence to the south propelled border relations into a stage of coexistence. In fact, the coexistence stage could be further subdivided into two phases reflecting periods of higher versus lower levels of tension along the border. The first phase, spanning the period from 1796

to1807, brought mutual acknowledgment and a level of stability to the border. While cross-border traffic was regulated by both national governments, the fur trade was able to manipulate these regulations successfully in order to maintain cross-border contact. It would also seem that while the U.S. and British military installations in the region were on fairly cordial terms, there was not a great deal of official cross-border contact.

Yet, the second phase from late 1807 through 1812 witnessed a rapid deterioration in British-U.S. relations. National policies such as the Embargo Act and the Orders-in-Council, and regional actions such as courting Native American alliances for war and the harassment of cross-border trade, symbolized this deterioration. The documentary evidence also suggested official cross-border contact occurred in lower frequency than during the first phase.

The onset of the War of 1812 plunged the region into a stage of alienation. The British quickly seized an unsuspecting Mackinac Island, and held it for the duration. Once again, this site became the dominant regional center as the British vacated Fort St. Joseph to concentrate on the strategic Straits of Mackinac.

In both cases of alienation, the region was dominated by a single regional center. This situation raises the question of whether a single regional center is a potential geopolitical feature of the alienation stage, or an historical coincidence within this region. This question can be addressed via the nature of social relations expected for this stage. For regions not developed extensively prior to an alienation stage, the high degree of tension and occasional armed conflict would discourage permanent settlement and hinder the development of industry. These conditions lead to an isolated and sparsely populated region dominated by the military because of its strategic position. Hence, it would seem

that low numbers of domestic and military sites, and domination of the region by the military are geopolitical characteristics of this stage, especially for regions sparsely populated or underdeveloped prior to the advent of an alienation stage. Subsequently, these conditions were also reflected in the documentary record by a lower number of cross-border accounts for this alienation stage than for the subsequent coexistent stage.

Following the War of 1812, postwar relations in the region represented a stage of coexistence. Once again, the coexistence stage could be subdivided into two phases reflecting periods of higher versus lower levels of tension along the border. The documentary record suggested an intermittently hostile phase from 1815 through at least 1820, and a more peaceful phase from the early1820s through the 1850s. Even though the U.S. Government tried to control foreign participation in the fur trade, firms such as the American Fur Company hired hundreds of Canadians to staff their operations. Ironically, William Puthuff, the Indian agent at Mackinac, was recalled because he protested the use of so many Canadian nationals in the employ of the American Fur Company. Yet, as the fur trade waned in the late 1830s, newly emerging economic patterns encouraged cross-border contacts.

Following the establishment of Fort Brady and the initial reports of the Boundary Commission in 1821 and 1822, the only major challenge to the peace came with Rebellions of 1837-38. However, the joint Canadian-U.S. goal of maintaining peace diminished the possibility of war between the United States and the Canadas.

While this study has taken a regional approach elucidating the nature of social processes along the border, it is also important to examine the different sets of relations evident at various posts along the border. To this end, contemporary accounts of visits to

these posts provide valuable insights into these relations. The 1839 account of Lieutenant Andrew Agnew proves particularly valuable in this regard. Agnew visited the Canadian side of Sault Ste. Marie, Fort Brady on the U.S. side, Fort Mackinac, the port of Sarnia across from Fort Gratiot, and both sides of the Windsor-Detroit border area.

While his accounts of Forts Brady and Mackinac, and the Detroit area reflect a positive tone, the events surrounding his landing at Sarnia illustrated the tension between this port and its cross-border counterpart of Fort Gratiot. Similarly, British Commodore E.W.C.R. Owen had experienced a negative reception at Fort Gratiot in 1816. While these two accounts are by no means conclusive, they suggest that postwar cross-border relations at the mouth of Lake Huron may have been more strained than at other posts. There are several factors that could potentially explain this pattern.

One such factor was the difference in function between Fort Gratiot and other posts in the Upper Great Lakes. As Esarey pointed out, the post was designed to guard the mouth of the St. Clair River and monitor shipping, but it never took on a trading function like most other Upper Great Lakes posts. The post did not even have an Indian agent stationed there.[26] Yet while this location was a strategic crossing point, it did not receive the scenic "tourist traffic" associated with Mackinac Island or the Sault Rapids. Since the post did not receive much of this type of traffic, its staff may not have viewed cross-border traffic in a positive light. Moreover, the fort was unoccupied for years at a time and only reactivated in times of border tension. This pattern had the double effect of hindering the development of enduring cross-border social networks, and garrisoning the fort only during times of tension and mutual suspicion. Further, the absence of a

[26] Esarey 1991, 49.

corresponding military installation at Sarnia did not allow for cross-border military socializing during more peaceful periods.

Yet while cross-border military issues may have been tense in the late 1830s and early 1840s, the port of Sarnia was a regularly scheduled stop for U.S. ships traveling to the Upper Lakes and down to Detroit.[27] This dichotomy between commercial versus military relations in the area underscores the complexity of assessing the nature of social relations in a cross-border context, as these two aspects of social relations seem contradictory. Yet overall, the documentary evidence indicated that the postwar occupations represent a stage of coexistence, with higher levels of cross-border contact in the 1820s-1850s phase.

Corresponding Archaeological Contexts

The documentary analysis of sites in the border region has demonstrated that portions of the Martinez model of border formation are applicable for the Great Lakes region from the 1780s to the Civil War. Portions of this model can also be tested independently using the archaeological record. The data set consists of eight relatively undisturbed site components from the western Great Lakes border region with archaeological deposits dating from approximately 1796 through the late 1850s. These specific contexts were chosen because they were relatively undisturbed and their matrices were not contaminated with fill representing earlier stages of site occupation. Unfortunately, given the magnitude of construction and subsequent disturbances on military sites, very few contexts met the above criteria. Table 2 presents the site components, date ranges, and their stage affiliations.

[27] Smith 1846.

Table 2: Archaeological Site Components

	Archaeological Component	Occupation	Stage	Reference
	Prewar Components			
1	Storehouse Site 1: Mackinac Is., Michigan	U.S. (1796-1812)	coexistence	Grange (1987)
2	Fort St. Joseph 1: St. Joseph Is., Ontario	British (1796-1812)	coexistence	Phillips (2000)
3	Wooden Officers' Quarters: Mackinac Is., Michigan	U.S. (1802-1812)	coexistence	Clifford (1990)
	Postwar Components			
4	Fort Drummond: Drummond Is., Michigan	British (1815-1828)	coexistence	Demers (2001)
5	Rains Point: St. Joseph Is., Ontario	British (1837-1853)	coexistence	Maltby n.d.
6	Fort Gratiot: Port Huron, Michigan	U.S. (1814-1870's)	coexistence	Esarey (1989)
7	Storehouse Site 2: Mackinac Is., Michigan	U.S. (1815-1827)	coexistence	Grange (1987)
8	Fort Brady: Sault Ste. Marie, Michigan	U.S. (1822-1870's)	coexistence	Demers (1990)

There are several advantages to using military posts for this study. Certainly, military posts tend to be among the largest and most common site type along the international border during the historic period. The military also had an important role in the civilian settlement of the area. Military records provide a great deal of information on supply logistics and consumer patterns. Further, correspondence generated from posts and government headquarters provides insights on the nature of policy formation and implementation along the border. Also, the spatial segregation of military sites can often reduce functional and status ambiguities in the archaeological record. In order to minimize variation as a result of functional variability, only quarters and storehouses were selected for this study.

Pre War of 1812 Contexts:

Storehouse Site 1:

The Provision Storehouse was originally constructed at Michilimackinac but moved when the British garrison moved to Mackinac Island in 1781.[28] It measured 115 feet long by 32 feet wide, and was divided into two separate stores. The storage function continued during the U.S. occupation beginning in 1796. However, the large size of the building was conducive to several additional functions including barracks and a hospital. After a fire that destroyed the building in 1827, a new hospital building was constructed on the site.

The occupation was divided into 8 major stratigraphic periods. Unfortunately, only a small portion of the excavation could be concentrated within the building. The two undisturbed and uncontaminated levels were incorporated in this study. These were dated

[28] The site history and excavation details can be found in description of Grange 1987.

to the 1796-1812 period. These levels were the lower floor designated as I/J2 and the middle floor as stratum J. [29]

The hypothesized terminal date for this level was problematic. One line of evidence concerned the dating of a British military button of the 49th Regiment of Foot. While this regiment was never stationed at Fort Mackinac, it was stated that "it was in the United States and the Upper Great Lakes area during the War of 1812."[30] This supposition was used to extend the terminal date to the end of the British occupation in 1815. However, this supposition is not entirely correct. Stewart's exhaustive compilation of British regimental service records shows that the 49th was not in the Western Great Lakes during the war.[31] They were stationed in the Niagara Peninsula and did not take part in occupying Amherstburg, Mackinac Island, or Fort St. Joseph. However, the 49th had been stationed at Fort St. Joseph between 1803 and 1805. The proximity of the two posts and their record of correspondence indicated the potential for a cross-border presence of some kind. One such contact involved 12 men of the regiment who deserted by stealing a boat and sailing to the Straits of Mackinac in April of 1805.[32] Hence, it would seem this deposit containing temporally sensitive British and U.S. regimental material could predate the British takeover of the island in 1812.

Yet, the presence of a U.S. Rifle Regiment button of the 1796-1812 period also presented a dating problem. While the Rifle Regiment did not officially serve at Mackinac until 1815, it is possible that smaller detachments cycled through the post on their way to western or southern posts. Hence, the 1812 terminal date is still plausible.

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[29] Ibid., 231-234.
[30] Ibid., 234.
[31] Stewart 1962, 223-225.
[32] Clerk 1805.

Fort St. Joseph:

Fort St. Joseph on St. Joseph Island in the St. Mary's River was established in 1796, Treaty. The post became the headquarters for the British military in the Great Lakes prior to the War of 1812. A large seasonal fur-trade population was also associated with the military occupation. Archaeological collections from numerous contexts were examined for the presence of cross-border materials such as: the old bakehouse and kitchen, the new bakehouse and southern traders' huts, blockhouse, and powder magazine. Unfortunately, no diagnostic cross-border materials were recovered from any of these contexts.[33]

Wooden Officers' Quarters:

This building was constructed by the U.S. personnel on Mackinac Island between 1815 and 1817.[34] Within the excavation area, only one undisturbed U.S. occupation layer could be identified. Ironically, this layer which dated between 1802 and the War of 1812, actually predated the construction of the quarter. Clifford noted that the intense building on the island in the late 1790s resulted in a great deal of redeposition of earlier material. Hence, while a layer itself might not have been disturbed, it could be composed of fill from earlier deposits. The 1802-1816 occupation layer comprised of MS3D1L05, MS3D1M04, MS3D1M10, MS3D1N04 did not show evidence of fill or mixing with earlier British occupations. Unfortunately, none of these contexts yielded any contemporary British material making comparisons difficult.

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[33] A comprehensive list of all diagnostic materials from Fort St. Joseph is contained in Phillips 2000.
[34] Clifford 1990.

Post War of 1812 Contexts

Fort Drummond:

The British constructed Fort Drummond in 1815, following the return of Mackinac Island to the United according to the Treaty of Ghent. It was occupied 1815 and 1828, when the joint British-U.S. Boundary Commission agreed that Drummond Island was property of the United States. It became the center of British activity in the Upper Great Lakes following the return of Mackinac Island to the United States in 1815. There is no documentary or archaeological evidence of previous Euro-American occupation of the site. The excavations centered on 6 buildings believed to have been occupied by both British military staff and fur traders.[35] Two of the three U.S. military buttons were found within structure 17, while the other example was discovered in a refuse pit south of this structure. The structure measured 20 feet north-south by 50 feet east-west. It is interesting to note that both British and U.S. buttons were found in this building. The size of this structure and its central chimney suggested that it could have been partitioned into a living quarter and storehouse. The documentary analysis for this site revealed several visits by U.S. military staff attached to the Boundary Commission from 1817 through 1826. There is no documentary or archaeological evidence for U.S. occupation following the evacuation of the island in November 1828. In fact, the post was handed over to a single U.S. officer who hired a caretaker to monitor the site.

Rains Point (St. Joseph Island):

When U.S. forces landed on St. Joseph Island in July 1814, they burned all of the fort buildings but did not torch the Southwest Company buildings on nearby Rains Point. [36]

[35] A detailed site history and details of excavation were presented in Demers 2001.
[36] A description of the historical background and archaeological excavations can be found in Maltby n.d.

However, postwar restrictions on foreign nationals trading within U.S. territory ruined the company's commercial base, forcing the company to sell their buildings to the British military.

Following the War of 1812, the British army used these buildings for temporary shelter while quarters were prepared on Drummond Island. Eventually several structures were moved from the fort and Rains Point for use on Drummond Island. The remaining old Southwest Company warehouse/quarter remained abandoned until 1837, when retired British Army Major William Kingston Rains built a house and a barn on the site. In 1846, Rains left to live on the Michigan side of the St. Mary's River. He returned in 1853 and lived there until his death in 1874.

The 1983 excavations centered on the warehouse/quarter designated as 1H62 and the remains of Major Rains' house designated as 1H56. This latter context revealed an original builder's trench, and subsequent subterranean alternations to the building in the 1840s through possibly the 1860's.

Fort Gratiot:

Fort Gratiot was located on the western bank of the St. Clair River at Port Huron, Michigan. It was begun in 1814 and garrisoned continuously until 1821.[37] However, changes in U.S. military organization and an emphasis on more westerly posts forced the closure of the post. This period is referred to as the "first fort" occupation. From 1822 to 1824, the site was leased to a mission school. The fort was once again garrisoned in 1828, and the dilapidated buildings were torn down and "second fort" was constructed. The fort's defensive works and its garrison were strengthened in the late 1830s as a result

[37] The contextual description of fort occupation was derived from Hawkins and Stamps 1989. The archaeological contexts and findings used in this study were taken from Esarey 1988; 1989.

of political tension in the Canadas. After the removal of the garrison to the Texas frontier in 1845, the fort was occupied sporadically until it was again garrisoned during the Civil War. Although the post was expanded during and after the Civil War, it was abandoned in 1879 and fort property was sold-off by 1881.

Several first fort contexts contained cross-border materials. Structures 1A and 1D were quarters demolished circa 1830. Features 271 and 355 were the respective cellars for these structures. While the cellars were filled-in circa 1830, no other structures were built on top of them. Feature 251 represented portions of a defensive ditch that was also filled in around 1830, as a result of second fort construction activities. Feature 0010 was a deposit relating to the construction of the quarters designated Structure 2A, built in the middle of the 1840s. While a portion of this deposit was disturbed during the demolition of the fort in the 1880s, no late nineteenth century material was recovered.

Storehouse Site 2:

This designation was used to distinguish the postwar component from the prewar component of the Storehouse Site on Mackinac Island, Michigan. After a fire destroyed the building in 1827, a new hospital building was constructed on the site in 1828. However, several deposits relating to the prior U.S. occupation prior were intact within strata F, G, H, and partially in I.[38] These strata were present in sub-operations or grid units E, G, H, J, K, L, M, N, R, S, T. Collectively, these deposits were classified as the 1827 fire feature. These deposits included the builders' trench, clay loam and gravel, fire rubble, first floor boards, and the rubble/floor levels. Disturbed contexts that were not

[38] These contexts were discussed in Grange 1987, 236-260; the artifacts were listed on pages 434-465.

considered were mottled clay fill, sandy loam and clay, unidentified trench, charcoal/ red soil, and the humic sod footstep.

Fort Brady:

Constructed in 1822, this post was located on the U.S. side of the St. Mary's River near the rapids in present day Sault Ste. Marie, Michigan.[39] The fort was garrisoned by regulars until the outbreak of the Mexican War in 1847. Afterwards, regulars and volunteer units occupied the post sporadically through the 1840s and 1850s. Various accounts show that the fort was in a state of decay by the 1840s. Following the Civil War, General William T. Sherman recommended constructing new quarters of stone and brick during an 1866 post inspection. By 1879, the western officers' and enlisted men's quarters were torn down. In 1880, several new buildings were added and older ones were repaired. Yet, the military reserve was approved for sale in 1886. The new Fort Brady, located on the heights of modern day Sault Ste. Marie, was garrisoned in 1892.

The 1989 excavations sought to delineate the remains of the western enlisted men's quarters. These intact deposits range from the early to mid 1820s to the 1870's. Features 57 and 66 represented the east and west sills for the enlisted men's barracks. Feature 62 was an intact privy deposit dating between the 1820's and 1830's. Feature 61 represented an undisturbed drain with a documented construction date of 1849. The early ironstone ceramics and contemporary U.S. military buttons confirmed this temporal designation. The other contexts with diagnostic cross-border materials date from the 1840's to the Civil War.

[39] A description of the historical background and archaeological excavations can be found in Demers 1990.

Supply Chains

A discussion of the supply chains for the U.S. and British military is needed to understand some of the mechanisms responsible for materials entering the region. The U.S. military supply headquarters was based in Philadelphia, and Detroit served as the regional depot for the upper Great Lakes posts.[40] Additional supplies could be obtained through private contractors, especially when a post might have experienced shortages.

Thus, it is important to note that items of British cross-border manufacture need not have entered the United States through the western Great Lakes border region. Indeed, items such as ceramics may have come directly from England overseas to Philadelphia, and forwarded to Detroit. In 1824, the Erie Canal opened barge traffic from the Hudson River to Lake Erie in western New York. The canal greatly reduced travel time and freight rates by the late 1830s. On the Great Lakes, steamships established weekly circuits visiting Canadian and U.S. ports and military posts. In the 1840s, several canals in Indiana, Ohio, and Illinois provided access to the interior of the Midwest and the Mississippi River. Full access to the St. Lawrence River, which the U.S. had been denied since the Revolutionary War, was granted via the Reciprocity Treaty of 1854. Further, the Soo Canal at Sault Ste. Marie, Michigan opened traffic into Lake Superior in 1855. In the middle to late 1850s, railroads connected Midwestern cities with the east.

However, the development of the Canadian infrastructure in the western Great Lakes lagged behind the United States. In a sense, the Canadas were in competition with both British policies and the newly emerging economy of United States. The British system of colonial preferences actually dictated the nature of colonial production and subsequently

[40] Esarey 1991, 27.

taxed these imports. In 1859, the colonies actually retaliated by taxing British goods coming into the Canadas. Canadian goods were also subject to a series of U.S. tariffs until the Reciprocity Treaty of 1854. Conversely, Upper Canada had replaced the ban on U.S. goods with a schedule of protective tariffs in 1816. The tariffs were raised in 1822, as part of the tension over U.S. access to the West Indies trade. Yet, despite these taxes and tariffs, trade between the United States and the Canadas flourished. While some factions in Upper Canada admired the U.S. prosperity, others distrusted the United States and predicted yet another conflict.

Water routes remained the primary transportation mode until the 1850s. Goods could be transported to the western Great Lakes using one of two common routes. The southern route began in Lake Ontario, continuing through the Queenston portage and the Niagara River across Lake Erie, through the Detroit and St. Clair River into Lake Huron. When the Welland Canal was completed in 1833, it provided direct access between Lakes Erie and Ontario eliminating any portage. The northern route began in Toronto, continuing north to the Holland River, through Lake Simcoe and a short portage to the Nottawasaga River and finally into Lake Huron. Until the late 1830s, the system of roads west from Toronto was poor and needed constant clearing. The low population of Upper Canada and its governmental emphasis on the development of eastern Ontario assured that this region remained underdeveloped. However, the union of the Canadas in 1841, and the subsequent relaxation of land restrictions were factors leading to more than a doubling of the population of Canada West (Ontario) between the early 1840s and early 1850s. Many of these immigrants were from the United States. Railroads became

numerous in the 1850s, as Canadian entrepreneurs were anxious to establish rail links with U.S. economic centers such as Chicago, Detroit, and New York.

Material Culture Correlates

Material culture can be an active conduit for communicating forms of identity. Construction techniques, foodways, symbolic images, etc., and the values placed upon them, can all shed light on the nature of ethnic and political affiliations and allegiances. As discussed earlier, the assessment of ethnic groups and boundaries via material culture is a complex task. Yet often, the detection of broader social identities such as nation-state affiliation can be facilitated by symbolic nationalist expressions on material culture. Wobst's study of "information exchange" discussed the use of emblems as attributes that transmit information on identities, emphasizing that positioning and visibility on an artifact are critical to transmittal.[41] Certain artifact types are chosen to bear attributes diagnostic of manufacture and origin, communicating nation-state identities directly. In an indirect fashion, diagnostic attributes can associate a manufacturer such as "Wedgwood" with England, or a geopolitical unit such as "New Jersey" with the United States.

From an archaeological perspective, the nature of cross-border interaction can be assessed through the analysis of the context and volume of such diagnostic cross-border materials present on sites in a border region. The Martinez model can be tested archaeologically by developing material culture correlates representing the stages of

[41]Wobst 1977.

social interaction hypothesized by the model. The basic assumption is that cross-border interaction will be reflected via the presence, type, and relative quantities of diagnostic materials on sites occupied by the cross-border group. Further, there is a direct relationship between levels of cross-border interaction and frequencies of cross-border materials present in archaeological assemblages. As the border becomes more permeable through each successive stage, people and materials can legally cross the border in higher frequencies. It can be assumed some percentage of the people and goods traveling across the border will bear artifact attributes diagnostic of their cross-border origin. Subsequently, a percentage of these diagnostic items will enter into the archaeological record through processes such as discard or unintentional loss. Hence, the higher the level of historical cross-border social interaction, a concomitant higher frequency of diagnostic cross-border materials should be recovered from border sites in a region.

However, the cross-border flow of these items need not be reciprocal in terms of the direction, quantities, or types of materials. Further, cross-border contact requires neither large numbers of cross-border individuals, nor a long duration of cross-border presence. In fact, some forms of cross-border trade may require only a single individual. Hence, the presence of cross-border individuals, and the presence of cross-border materials, might have arisen from different activities.

As the Martinez model of border formation and maintenance addresses levels of cross-border interaction between social groups, it is critical to identify the material culture associated with each border group. The strategy is to identify materials that can be directly attributed to either British/Canadian or U.S. origin. Attributes signaling national origin can found on both military and domestic artifacts.

Military attributes are those that can be traced to a specific national or imperial military system. Documented military insignia such as eagles, lions, broad arrows, etc. were symbolic expressions of group identity at the nation-state level. These diagnostic symbols can appear on uniforms, arms and ammunition, and other items owned by the military. Common artifact types employing such attributes include uniform buttons; uniform headgear accessories such as brass plates, scales, and cockades; bale seals; and gun parts. Typically, these items would be deposited into the archaeological record through unintentional loss. It is not likely that diagnostic military items such as uniforms and accouterments, excluding weapons, would have been used by the forces of the other nation-state.

Within these military site contexts, diagnostic domestic attributes indicate origin, but were not created as a specific aspect of military expression. Artifacts that bear these domestic attributes routinely appear on military sites, but reflect general lifeways and activities such as food preparation and consumption, construction, and personal hygiene. Common domestic items include glass containers, ceramic vessels, smoking pipes, and hardware. Diagnostic attributes such as maker's marks, brand names, and manufacturer's names can provide the national origin of an artifact, and reflect the nature of cross-border contacts.

Further, it was necessary to eliminate certain materials, types, and forms from all totals because there was an extremely low to zero probability that these types would bear any positive diagnostic attributes of origin. For example, sherds of pane glass almost never bear attributes diagnostic of origin. Moreover, types or forms that did not bear any diagnostic examples were also excluded from the totals. It is important to note that these

definitions are particular to this study. For different sites or time periods, the ascription of "eligibility", or inclusion based on the possibility that they bear diagnostic attributes, may vary considerably. The example of dark green or "black glass" bottles is a case in point. Certainly, examples of this form bearing diagnostic seals have been recovered from sites dating from the seventeenth to early nineteenth century. However, since no examples were excavated from sites examined in this study, this type was excluded from the total population of eligible glass. This technique further diminishes the problem of skewing by reducing the total population to only eligible items. Conversely, if a single diagnostic item of this type and form had been recovered from any site in this study, these frequencies would be tabulated for all sites.

Within the glass category, the following artifact types were not included in the totals: black glass cylindrical bottles, drinking glasses, pane and chimney glass, and glass beads. Within the ceramics category, the following artifact types and ware types were not included in the totals: coarse red earthenware, delft, clay marbles, and drainage tile. Since diagnostic marks could appear on both bowl and stem fragments of clay pipes, all clay pipe fragments were included in the site totals. Within the metals category, metal buttons were the only recovered artifact type bearing cross-border diagnostic attributes. Hence, only metal buttons were counted in the totals. There were no detached button backs with diagnostic attributes so they were not counted as part of the button total. Moreover, since metal "bullet buttons" did not bear attributes diagnostic of origin, this type was also excluded from the totals.

Data Set

Having defined the material correlates and several mechanisms for their distribution, it is crucial to organize the data for statistical testing and analysis. The most important procedure in determining frequencies of cross border materials is to document the total recovered sample from which they are derived. Hence, it is critical to identify the proportion of diagnostic to non-diagnostic materials for each artifact type on which domestic and military attributes. This procedure also helps to minimize skewing due to differences in assemblage sizes.

Table 3 presents both the diagnostic cross-border artifact counts, and the total frequency of eligible artifact types for each site component. Each diagnostic artifact record included: the provenance, material type; diagnostic artifact count; and a description. The total diagnostic artifact count was tallied for each material type and presented in relation to the total count of "eligible" artifacts of this type.

For example, Storehouse Site 1 contained one diagnostic cross-border metal button. The recovered total sample of eligible metal buttons totaled eight. Hence, the frequency of cross-border diagnostic items to the eligible population was 1 to 8. In addition, this table also presented the material type counts for non-diagnostic items. For example, since there were no diagnostic U.S. ceramics recovered from the British post of Drummond Island, the diagnostic total was zero. However, the total frequency of eligible ceramics must be included in order to calculate the overall probability for the category of diagnostic cross-border ceramics to be recovered from sites in the region. Hence, the Drummond Island total for eligible ceramics was 10,870.

Table 3: Archaeological Data Sets

Prewar Contexts				
Storehouse Site 1 (U.S.)				
No Diagnostic British Domestic Items				
	Material	Count	Total	
	Ceramic	0	2	
	Clay Pipe	0	0	
	Glass	0	10	
Diagnostic British Military Items				
Provenance				Description
Middle Floor I/J 1 &	Metal	1		British 49th Regiment pewter button
Foundation (K)	TOTAL	1	8	
Fort St. Joseph (BRITISH)				
No Diagnostic U.S. Domestic Items				Totals Unavailable - Not Used in Calculations
No Diagnostic U.S. Military Items				Totals Unavailable - Not Used in Calculations
Wooden Officers' Quarters (U.S.)				
No Diagnostic British Domestic Items				
	Material	Count	Total	
	Ceramic	0	20	
	Clay Pipe	0	1	
	Glass	0	6	
No Diagnostic British Military Items				
	Metal	0	4	

Table 3: Archaeological Data Sets

Postwar Contexts				
Fort Drummond (BRITISH)				
No Diagnostic U.S. Domestic Items				
	Material	Count	Total	
	Ceramic	0	10,870	
	Clay Pipe	0	3008	
	Glass	0	438	
Diagnostic U.S. Military Items				
Provenance				Description
7452.065.07	Metal	1		cast pewter button w/ script "I" with blank oval (U.S. Infantry)
7452.085.05	Metal	1		flat 2-piece w/ brass wash eagle on cannon "CORPS" brass button
				w/ "T. Kelly" maker's mark (U.S. artillery)
7452.P9.04	Metal	1		flat 2-piece eagle on cannon "CORPS" brass button (U.S. Artillery)
	Total	3	96	
Rains Point House (BRITISH)				
Diagnostic U.S. Domestic Items				
Provenance	Material	Count	Total	Description
1H56A1 118.0	Ceramic	1	232	yelloware holloware w/ impressed "AMERICAN POTTERY MANUFACTURING
				COMPANY JERSEY CITY N.J."
	Clay Pipe	0	7	
	Glass	0	4	
No Diagnostic U.S. Military Items				
	Metal	0	0	

Table 3: Archaeological Data Sets

Fort Gratiot (U.S.)				
Diagnostic British Domestic Items				
Provenance	Material	Count	Total	Description
L191.0271.03	Ceramic	1		undecorated whiteware flatware w/ w/ impressed "WARRANTED
				STAFFORDSHIRE" maker's mark.
L191.0271.08	Ceramic	1		blue handpainted floral design pearlware saucer w/ "CLEWS WARRANTED
				STAFFORDSHIRE" encircling a crown
L191.0251.11	Ceramic	1		blue handpainted pearlware form unknown w/ "M" and "BURSLEM"
L191.0251.16	Ceramic	1		blue handpainted pearlware form unknown w/ "S" and "BU" and "CHINA"
	TOTAL	4	1343	
L191.0355.03	Clay Pipe	1		stem fragment w/ "ITE (Braithwaite) LIVERPOOL"
L191.0010.11	Clay Pipe	1		stem fragment w/ embossed "HENDERSON"
	TOTAL	2	48	
	Glass	0	664	
No Diagnostic British Military Items				
	Metal	0	117	
Storehouse Site 2 (U.S.)				
Diagnostic British Domestic Items				
Provenance	Material	Count	Total	Description
1827 Fire Feature:	Clay Pipe	1	26	"TD" bowl-stem fragment w/ "WG" on spur
(Fire Rubble)				
1827 Fire Feature:	Glass	3		"LONDON MUSTARD" panel bottle
(Fire Rubble)				
1827 Fire Feature:	Glass	4		"LONDON MUSTARD" panel bottle
Rubble/Floor				
	TOTAL	7	176	
No Diagnostic British Military Items				
	Metal	0	63	

Table 3: Archaeological Data Sets

Fort Brady (U.S.)				
Diagnostic British Domestic Items				
Provenance	Material	Count	Total	Description
4513.105.04.02	Ceramic	1		blue transfer-printed pearlware hollowware form w/ impressed "Warranted
4513.106.04.02	Ceramic	1		undecorated ironstone plate w/ transfer-printed " OD China" Wedgwood mark
4513.106.04.04.062	Ceramic	1		blue transfer-printed pearlware plate w/ impressed "WARRANTED
				"STAFFORDSHIRE" maker's mark.
4513.108.04.02	Ceramic	1		undecorated ironstone plate w/ transfer-printed "J. WEDGWOOD"
4513.112.04.03	Ceramic	1		undecorated ironstone plate w/ transfer-printed "J. RIDGWAY"
4513.113.04.08.061	Ceramic	1		undecorated ironstone plate w/ transfer-printed "J. WEDGWOOD"
4513.114.04.03	Ceramic	1		heat-altered ironstone form unknown w/ 1842-1867 British registration mark
	TOTAL	7	1931	
4513.099.04.06.07	Clay Pipe	1		stem fragment w/ impressed "HENDERSON" and "MONTREAL"
4513.099.04.06.057	Clay Pipe	1		stem fragment w/ embossed "BRISTOL" English mark
4513.101.04.06.05	Clay Pipe	1		stem fragment w/ impressed McDougall mark "BURNS CUTT"
4513.103.04.02	Clay Pipe	1		stem fragment w/ impressed "HENDERSON"
4513.110.04.03	Clay Pipe	1		stem fragment w/ embossed "BRISTOL" English mark
	TOTAL	5	735	
4513.099.04.03.02	Glass	1		clear lead glass panel bottle w/ molded "TH" AND "KING"
				(by the king's patent)
4513. 102.04.05	Glass	1		clear lead glass panel bottle, pontil base, phlanged lip, w/
				"ESSENCE OF PEPPERMINT" and "BY THE KING'S PATENT"
4513.103.04.04	Glass	1		clear lead glass panel bottle, pontil base, w/ "KING'S PATENT"
	TOTAL	3	1066	
No Diagnostic British Military Items				
	Metal	0	125	

Statistical Methods

The Michigan State University Statistical Consulting Service was contacted in order to determine the appropriate statistical methods for the analysis of this data set. Given the need to determine this proportion of diagnostics to the total of the recovered sample, the distribution must be considered as binomial. Unfortunately, weighting of data by excavated volume was impossible because these values were not available for several components. Weighting would also be problematic for Forts Drummond and St. Joseph since their matrices are rocky with very little soil, volume weighting would skew the results.

The selection of an appropriate statistical test for this data set was complicated by the nature of the data. The relatively small number of observations (n=8) in the matrices hindered cluster analysis. Moreover, the zero values for observations hindered many other forms of testing. However, the logistical regression analysis method was deemed appropriate for the nature of this data set.[42] This method determines the extent to which mutually exclusive artifact groups such as metal, glass, ceramic, and clay pipe, differ on the basis of diagnostic variables or "variables of interest".

Logistical regression offers advantages over other methods because it does not assume a linear relationship between the variables or for the normality of the error terms. This method was designed specifically for situations in which there is a dichotomous dependent variable. Logistical regression estimates the probability of a certain event occurring, and uses observed variables coupled with occurrences or non-occurrences of the event to model the probability of occurrence under various conditions.

[42] Christensen 1997, 55.

The model for a simple linear logistical regression for these data is:[43]

$$\text{Logit}\,(p_i) \equiv \log\left(\frac{p_i}{1 - p_i}\right) = \beta o + \beta 1\, T_i$$

The calculations for the above equation were run via the GENMOD (Generalized Linear Model) operation of the SAS (Statistical Analysis Software) Program.[44] The "p" symbol denotes the probability that an event will occur in any single trial. The "β" symbol represents the unknown intercept and slope parameters or coefficients. The "T" stands for the ratio of diagnostic items to the excavated total of the artifact type. The parameters were also calculated through a Maximum Likelihood Estimate (MLE) procedure in the SAS Program.

The subsequent probability values were derived through Pearson's chi-square test for Goodness-of-Fit. The equation is as follows:[45]

$$\sum_{i=1}^{I} \frac{(Yi - Ni\,\hat{p}i)^2}{Ni\,\hat{p}i\,(1 - \hat{p}i)}$$

In this equation, *Yi* stands for the independent observations, N represents the number of trials, while p indicates the estimated probability. This form of chi-square test compares observed and expected frequencies. The chi-square test statistic is the sum of the squares of the differences between the observed and expected frequencies, with each squared difference divided by the expected frequency.[46] A probability value, between 0

[44] The SAS Program (Version 7) was issued by the SAS Institute in 1999.
[45] Christensen 1997, 59.
[46] Clark and Hosking 1986, 261-266.

and 1, was then generated for each observation. The recommended probability level is $p < 0.05$, to reject the null hypothesis that the relationship is not statistically significant. Thus, a value of .05 or lower indicates 95% chance, or better, that the relationship is statistically significant, given "n" degrees of freedom.

When applicable, contrasts of prewar and postwar materials, and between material types in the postwar period were also conducted using pair-wise chi-square testing, resulting in the ranking the probability of occurrence for artifact types, from least likely to occur through most likely to occur. The pairwise chi-square formula is calculated by[47]:

$$x^2 = (Y - X - 1)^2 / (Y + X)$$

In the above equation, the differences between observed and expected frequencies were contrasted for each material type.

Material Expectations

The documentary analysis placed all sites in the border region into an alienated or coexistent stage for the period between 1780 and the late 1850s. However, the historical record of regional occupation showed that no U.S. military sites were founded in the region until 1796. Hence, it would be impossible to compare British and U.S. sites of the alienation stage prior to 1796. Unfortunately, there were no discreet British or U.S. occupations during the War of 1812 alienation stage. Thus, the alienation stage could not be tested properly using archaeological data. Subsequently, a comparison of the alienation and coexistence stages with archaeological data was impossible.

[47] Lao, Kessler, and Gross 1998, 184.

The eight border area sites that did contain testable archaeological site components were all placed into the coexistent stage. Hence, only the coexistent component could be tested archaeologically. Once again, low levels of border permeability, regulated interaction, and unresolved local issues characterize the coexistence stage. Consequently, there is a corresponding expectation of low levels of cross-border interaction, culminating in low frequencies of cross-border material. Hypotheses 1 - 4 test the significance of the frequency of cross-border materials for prewar and postwar sites. The relevant data sets are referenced below the hypotheses.

Material Expectation 1: British/Canadian domestic and military items will be recovered from U.S. sites in significant frequencies, and the converse.

Prewar:

1) $\mathbf{H_0}$: British/Canadian military items will not be recovered from U.S. site components in significant frequencies, and the converse.

2) $\mathbf{H_0}$: Domestic products of British/Canadian origin will not be recovered from U.S. site components in significant frequencies and the converse.

Relevant Data Set: Prewar Sites (Storehouse 1, Wooden Officers' Quarters)

Postwar:

3) $\mathbf{H_0}$: British/Canadian military items will not be recovered from U.S. site components in significant frequencies, and the converse.

4) $\mathbf{H_0}$: Domestic products of British/Canadian origin will not be recovered from U.S. site components in significant frequencies and the converse.

Relevant Data Set: Postwar sites (Forts Drummond, Gratiot, Brady, Rains Point, Storehouse 2)

The next step in this investigation is to contrast the frequencies of diagnostic materials recovered from sites of the prewar and postwar periods respectively.

Material Expectation 2: A variety of factors will lead to differences in the total frequencies of diagnostic materials recovered from site components.

5) $\mathbf{H_0}$: There is an equal probability that all diagnostic materials will be found on site components of the prewar period.

Relevant Data Set: Prewar Sites (Storehouse 1, Wooden Officers' Quarters)

6) $\mathbf{H_0}$: There is an equal probability that all diagnostic materials will be found on site components of the postwar period.

Relevant Data Set: Postwar sites (Forts Drummond, Gratiot, Brady, Rains Point, Storehouse 2)

The documentary assessment noted that prior to the war, relations were generally cordial until they deteriorated after 1807. Yet, the frequency of official contacts was relatively low in frequency. Trade restrictions and regulations also hampered cross-border contacts. Conversely, the postwar era witnessed the negotiation and delineation of the border. While the period from 1815 to 1820 witnessed several tense episodes, the two sides eventually settled their differences and did not return to war. Throughout the 1820s, relations steadily improved. Generally, official and commercial cross-border contacts increased significantly from the prewar period. Despite their placement within the same stage, increased cross-border contact should lead to higher frequencies of cross-border materials to be recovered from postwar components than from prewar components.

Material Expectation 3: Postwar components will yield significantly higher frequencies of cross-border domestic and military items than prewar sites.

7) $\mathbf{H_0}$: Postwar components will not yield significantly higher frequencies of cross-border military items than prewar sites.

8) $\mathbf{H_0}$: Postwar components will not yield significantly higher frequencies of cross-border domestic items than prewar sites.

Relevant Data Sets: All data sets.

Table 4: Hypotheses Testing Levels and Results

Test #	*Sample Size	α Level	Rejection Level	P Value	Results	Comments
1	1 / 12	.05	> .05	.0687	Fail to reject Ho	Fail to reject Ho by a very small margin
2	0 / 43	.05	> .05	**	Not tested	Prewar sites yielded no diagnostics
3	3 / 413	.05	> .05	<.0001	Reject Ho	All 3 items were recovered from the Fort Drummond Site. No British items were found on U.S. sites
4	C: 12 / 14,376 P: 8 / 3,825 G: 10 / 2,364	.05	> .05	<.0001	Reject Ho	This test was a collective assessment, the materials were not tested on an individual basis
5	See 1 and 2	.05	> .05	**	Not tested	No significant frequencies for prewar materials
6	See 3 and 4	.05	> .05	***	Reject Ho	C < P < G < M (Pair-wise chi square).
7	See 1 and 3	.05	> .05	.2567	Fail to reject Ho	Low values contributed to the failure to reject
8	See 2 and 4	.05	> .05	See 2 and 4	Not tested	Zero values for prewar sites hampered meaningful comparisons

* C - Ceramics, P- Clay Pipe, G - Glass.
** Probability values could not be calculated due to zero value for observed frequency.
*** See hypothesis discussions for multiple pair-wise values.

Results and Analysis

This section presents the statistical results and test implications for the material hypotheses presented in the previous chapter. Each set of hypotheses will be discussed in detail, followed by a discussion of implications for the study of material culture in cross-border contexts.

The first set of hypotheses examined the nature of assemblages of the prewar period. These tests assessed whether the relationship between the observed and expected frequencies is statistically significant.

1) **H_0**: British/Canadian military items will not be recovered from U.S. site components in significant frequencies, and the converse.

Since no cross-border military items were discovered from Fort St. Joseph or the Wooden Officers' Quarters, the test failed to reject the null hypothesis for these observations. Only one component, Storehouse 1, yielded a significant frequency of cross border military items. A single British military button of the 49th Regiment was recovered from a sample of eight metal buttons capable of bearing a diagnostic insignia. Yet, the extremely low frequency of potentially diagnostic samples in this component is problematic, and does not allow for any conclusions about prewar military frequencies.

Indeed, there are very few documented components firmly dated to this era that are both undisturbed, and not contaminated with fill from previous occupations. Multi-occupational sites with extensive construction episodes, such as Fort Mackinac, are especially susceptible to this stratigraphic problem. The constant construction and subsequent disturbance associated with multiple military occupations often contaminated or obliterated these components. In future, it may prove difficult to identify a substantial

number of such components, and to obtain samples sizes sufficient to assess the significance of cross-border material frequencies.

2) **H_0** Domestic products of British/Canadian origin will not be recovered from U.S. site components in significant frequencies and the converse.

Since no cross-border domestic items were recovered from the three prewar components, the test failed to reject the null hypothesis. The same statistical and archaeological limitations mentioned above apply to the domestic materials. Further, the stringent criteria for defining diagnostic cross-border domestic materials, discussed below, also lowered the sample sizes. In turn these low frequencies adversely affected the probability of a statistically significant relationship between the observed and expected frequencies.

As discussed in the ceramic industry section below, the British refined ceramics dominated the North American markets well into the nineteenth century. Clearly, a high percentage of refined earthenware sherds recovered from U. S. sites of this period were undoubtedly British in origin. However since they did not bear the diagnostic attributes defined in this study, they could not be considered as formal British diagnostic items. Hence, a Type 2 statistical error occurred in failing to reject the null hypothesis.

Hypotheses 3 and 4 addressed the presence of domestic and military materials in postwar components.

3) **H_0** British/Canadian military items will not be recovered from U.S. site components in significant frequencies, and the converse.

Only the British military post of Fort Drummond yielded any cross-border military specimens. Hence, the test failed to reject the null hypothesis for postwar components. Even the large-scale excavations such as Fort Gratiot or Fort Brady did not yield any

evidence of a British military cross-border presence. The documentary record showed that peacetime cross-border military visits, both official and unofficial were relatively common. However, evidence for these visits is sparse because of their short duration and relatively small parties. In the case of Drummond Island, the Boundary Commission visits tended to be longer in duration and larger parties were associated with the surveys. The increase in duration and party size provided a greater chance to yield evidence of such cross-border contact. A further discussion of depositional issues for military items is presented below.

4) **H_0**: Domestic products of British/Canadian origin will not be recovered from U.S. site components in significant frequencies and the converse.

In terms of the U.S. components, each site contained significant frequencies of British/Canadian produced domestic items. Hence, the null hypothesis was soundly rejected for this period. While clay pipes were the only item found on all three U.S. sites, no diagnostic metal items were found on these sites. One explanation for this dearth could be that some metals do not preserve well in the regional soils and climate. Further, metal items bearing diagnostic attributes, such as tools or cutlery could have been curated to a higher degree.

Fort Gratiot did not yield any examples of diagnostic cross-border glass, and the Storehouse 2 component did not contain any diagnostic cross-border ceramic examples. While these materials could be present on the sites, no vessels bearing an attribute of cross-border national origin were recovered. These frequencies and their statistical significance suggest that British/Canadian produced domestic items were relatively common on U.S. sites of the postwar period.

In terms of U.S. materials on British sites, Fort Drummond did not yield any U.S. produced domestic items. Yet, the Rains Point Site component did contain a single diagnostic U.S. produced "yellowware" ceramic sherd. It is important to note the temporal difference between these two sites. While Fort Drummond was abandoned in 1828, the initial date for the occupation of the Rains Point Site component was 1837. This ceramic sherd maker's mark indicated a manufacture date between 1833 and 1845. In fact, diagnostic pre-1840's U.S. maker's marks on such utilitarian wares are rare. Hence, Drummond Island, the only other postwar British period site in this study, was abandoned before highly-fired yellowware was popular, and before such items were marketed with diagnostic attributes. In this vein, the lack of other U.S. items in cross-border contexts presents a twofold problem. One must address the nature of U.S. production and marking, as well as issues of their cross-border availability and popularity. A more complete discussion of these issues will be presented following the discussion of test results.

The next set of hypotheses contrast the frequencies of diagnostic materials recovered from sites of the prewar and postwar periods respectively.

5) $\mathbf{H_0}$: There is an equal probability that all diagnostic materials will be found on site components of the prewar period.

Since no cross-border domestic items were recovered from the three prewar components, the hypothesis could not be tested properly. Once again, while these materials could be present on prewar sites, no vessels bearing an attribute of cross-border national origin were recovered. Certainly, the small sample size affected this assessment.

6) $\mathbf{H_0}$: There is an equal probability that all diagnostic materials will be found on site components of the postwar period.

The pair-wise chi-square testing indicated that that there were significant differences in the likelihood of finding these materials in a postwar cross-border context. This likelihood was in part, a function of the differences between the observed and expected frequencies. The results of the pairwise contrasts are presented below:

Table 5: Pairwise Chi-Square Contrasts of Postwar Materials

Contrast*	Chi-Square	Value
M vs C	22.95	<.0001
M vs P	10.14	0.0015
M vs G	4.86	0.0275
C vs P	12.59	0.0004
C vs G	50.27	<.0001
P vs G	5.33	0.0210

* M- metal (military), C - Ceramic, P -Clay Pipe, G - Glass

Hence, the null hypothesis was rejected for all pairwise comparisons. Among highly occurring items, ceramics were the least likely to occur, clay pipes more likely to occur, glass was even more likely to occur, while military items were most likely to occur. However, the problems with skewing were evident in this ranking. The large sample size of Drummond Island ceramics (N=10,870) demoted the overall occurrence of ceramics to the least likely position in the ranking. Ironically, the British ceramic industry dominated the North American market in the pre Civil War era, and diagnostic British ceramics are present at Forts Brady and Gratiot in high frequencies. Further, the high frequency of recovered diagnostic buttons relative to the small sample of eligible buttons catapulted this item into the highest ranking for probability of occurrence.

Hypotheses 7 and 8 investigated the likelihood that sites from one period or the other would yield significantly higher frequencies of cross-border material.

7) **H_0**: Postwar components will not yield significantly higher frequencies of cross-border military items than prewar sites.

Only one diagnostic button was found in a prewar context whereas three were found in the postwar context of Fort Drummond. Hence, there was no significant difference in the probability values between these two periods, and the test failed to reject the null hypothesis. Once again, these very low frequencies do not allow for many conclusions regarding comparisons of military items for these periods.

8) **H_0**: Postwar components will not yield significantly higher frequencies of cross-border domestic items than prewar sites.

Given the complete dearth of prewar diagnostic domestic materials, all postwar components would have yielded significantly higher frequencies of cross-border domestic materials. Unfortunately, the hypothesis could not be tested properly because of the zero values for prewar contexts. Yet, it is important to remember that all postwar components independently yielded high relative frequencies of cross-border domestic materials.

Certainly, numerous factors concerning the nature of the data have affected these results. Specifically, the nature of the historical occupations and the nature of the material and artifact types must be addressed. Once again, the small number of observations (n=8) limited statistical testing procedures. There were difficulties in locating undisturbed contexts without contamination from earlier periods, especially for sites dating prior to 1796. Multi-component sites such as Mackinac Island witnessed continual construction episodes that disturbed previous archaeological deposits. Low

numbers of sites and domination of the region by the military seem to be geopolitical characteristics of the alienation stage. These characteristics are magnified for regions that are sparsely populated or underdeveloped prior to the advent of an alienation stage.

Further, there were no components available that could be tightly dated to a wartime context for testing purposes. The issue of wartime conditions poses a problem for archaeology as the relatively short duration of military advances and retreats across the border might not be discernible in the record. Even when a wartime context can be identified, it might not be possible archaeologically to determine whether wartime cross-border military items were deposited through occupation by adversaries, prisoners of war, or as souvenirs or war trophies. Hence, testing the alienation stage with archaeological data may prove difficult depending upon the regional context.

Within the coexistence stage, prewar and postwar contexts were examined for significant differences in assemblages. Certainly, the prewar period (1796-1812) was more temporally restricted than the postwar period (1815-1850s). But perhaps more importantly, the observed differences in assemblages reflected changes in both supply and technology, and in cross-border relations. Hence, it is crucial to examine more closely items recovered in cross-border contexts, and the mechanisms responsible for controlling their circulation.

While most materials traveled along the supply chains described previously, artifact types represented different industrial processes, market forces, and life cycles. Hence, it is critical to examine the industries and markets responsible for the production and consumption of materials deposited in this cross-border context. Three such industries,

ceramics, clay pipe, and proprietary/patent medicine, were represented in the cross-border archaeological record.

Ceramics

The presence of diagnostic cross-border ceramics was assessed by identifiable maker's marks. There is little doubt that Staffordshire English refined earthenwares dominated the North American market until at least the 1850s. Several examples of the "Staffordshire Warranted" impressed marks, dating from approximately 1815 through the 1830s[48], were recovered from Forts Gratiot and Brady. Ironstone vessels marked "J. WEDGWOOD" (1841-1860) representing John Wedge Wood, and not Josiah Wedgwood, were recovered from Fort Brady. This site also yielded an ironstone vessel bearing the mark "J. Ridgway" dating between 1841-1855.[49]

Ketchum cited the initial manufacture date for transfer-printed white earthenware in the United States as 1839, crediting the American Pottery Company of Jersey City, New Jersey with its introduction.[50] Afterwards, the company began to focus on whiteware, gradually phasing out their yellowware production. Coincidentally, a single sherd of yellowware bearing the mark of the American Pottery Company was recovered from the Rains Point Site, on St. Joseph Island, Ontario. In the case of Midwestern ceramic production, numerous English potters were hired for their expertise, but the raw materials for whiteware production were not abundant in the Ohio Valley.[51] Indeed, noted Staffordshire potter James Clews emigrated in 1836 to become a principal in the Indiana

[48] Godden 1964.
[49] Godden 1964, 534.
[50] Ketchum, 1987, 14.
[51] Gates, and Ormerod 1982, 5. This volume presents a history of the East Liverpool pottery district.

Pottery Company located near Louisville, Kentucky. However, the firm was not able to produce whiteware commercially, and Clews sold his interest in 1842.[52]

In contrast to refined earthenwares, there is a long history of utilitarian ceramic production of such as red earthenwares and stonewares in the United States. However, many of these potteries served small areas and their wares often were not marked. It was not until the 1840s that U.S. pottery was mass-produced and shipped long distances that marks became prevalent. Lehner noted that because New Jersey potters, such as the American Pottery Company tended to ship their wares great distances via the Erie Canal, they marked their wares more often than Ohio potters.[53] In fact, there are relatively few diagnostic Ohio markers' marks on wares prior to the production of whiteware in East Liverpool beginning around 1872.[54]

These industrial and commercial patterns have significant implications for cross-border material studies. Since there were relatively few potters in western Ontario prior to the 1860s[55], the twin advantages of mass production and cheap transportation made the U.S. utilitarian wares attractive. Yet, the relatively late introduction of diagnostic U.S. ceramic marking could result in masking the flow of U.S. utilitarian ceramics across the border prior to the Civil War. In addition, several marked U.S. ceramic vessels from Rains Point, and Forts Gratiot and Brady indicate manufacturers from New York and New Jersey. While this small sample of vessels makes it difficult to form any conclusions, it would seem that ceramics flowed west from New York and New Jersey into the western Great Lakes via the Erie Canal and possibly the Welland Canal route. However, given

[52] Stefano 1974. This article was reprinted in Atterbury 1978, 207-215.
[53] Lehner 1988, 10.
[54] Gates, and Ormerod 1982, 15; Ketchum 1987, 139-145.
[55] Newlands 1979, 22-25.

the scarcity of documented diagnostic Ohio makers' marks, it is difficult to determine archaeologically whether or not Ohio ceramics are present or that they did not penetrate the border region in significant numbers.

The issue of diagnostic marks is further complicated by iconographic issues. English firms were noted for producing U.S. patriotic items following the Revolutionary War and War of 1812.[56] Hence, items bearing U.S. insignia or motifs cannot be attributed to a U.S. manufacturer without a diagnostic U.S. mark. Potters in the United States also adopted names and images associated with British ceramic manufacture. For example, the word "Liverpool" could refer to the East Liverpool, Ohio pottery district, or wares produced in Liverpool, England. Further, the term "Etruria" was applied to an eighteenth century ceramic works in Staffordshire, but also a nineteenth century ware type from East Liverpool, Ohio. Conversely, Staffordshire potters, Cork and Edge, used an eagle with a "stars and bars" shield and the banner motto "E Pluribus Unum" [57] while Francis Morley and Company employed an eagle motif atop a banner entitled "America"[58] In a similar fashion, both British and U.S. manufacturers employed variations on the British coat-of-arms for their maker's marks. Hence, the attribution of a national origin for ceramics requires a positive diagnostic attribute. In some cases, the entire mark is required for a positive national identification.

Clay Pipes

The clay pipe industry was dominated by British and Canadian manufacturers, to the virtual exclusion of U.S. makers in the first half of the nineteenth century. Hence, there

[56] Ewins 1997; Klamkin 1973.
[57] Godden 1964, plate 6, 174.

is very little chance of finding diagnostic pipes of U.S. manufacture prior to the 1850s. Once again, industrial conventions in marking affected the ability to assign national origins. The geographic origin of these pipes was rarely identified on these vessels before the early nineteenth century. Yet by this era, symbols such as "TD" became ubiquitous, non-diagnostic marks. In fact, the most reliable diagnostic attribute for pipes was the name of the city of manufacture such as Montreal, Glasgow, Edinburgh, or Bristol, which were impressed laterally on the stem. Yet, in the case of Ring family pipe makers of Bristol, England, their "OHIO" mark, located on the opposite side of the stem from "RING BRISTOL" referred to a style, and not geographic origin.[59]

Diagnostic cross-border examples recovered from regional sites include: "BRAITHWAITE LIVERPOOL" (1824-1857); HENDERSON MONTREAL (1847-1876); MCDOUGALL BURNS CUTT" (1846-1967); "RING BRISTOL" (1802/3-1884); "TD WG" (White-Glasgow) (1805-1955).[60]

The "TD 13-star" clay pipe controversy well illustrates the difficulties of ascribing national identities. Consequently they were not used in this study. These pipes bear a molded, embossed design where the "TD" is surrounded by a decorative motif identified by most researchers as stars. The inferred iconographic association is with the original thirteen colonies and the Revolutionary War. While most examples carry thirteen stars, several excavated examples carried more or less than this number of stars.[61] Yet, it is not known how many manufacturers produced this style. Anderson has argued that these pipes were manufactured from approximately the 1840s to the 1860s, but not as early as

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[58] Ibid., plate 3, 449.
[59] Walker 1977, 680-684. This discussion is contained in volume B, the second of four volumes in this set.
[60] Ibid.
[61] Jouppien 1979, 51.

the late eighteenth century or War of 1812, as had been suggested by several scholars.[62] Unfortunately, there do not seem to be any excavated examples with a diagnostic maker's mark. Hence, nation origins are still questionable. However, it is likely some of these pipes could have been produced in Britain, as British manufacturers were noted for capitalizing on the U.S. patriotic market. In any event, their wide distribution on North American sites attests to their overall popularity in the mid-nineteenth century.

Glass

The ascription of national identity to glass vessels can be a perilous endeavor, particularly in the patent/proprietary medicine industry. Vessel reuse, copying vessel forms and product names, and forgeries complicate the interpretation of potentially diagnostic attributes. Further, some of these bottles or vials were shipped empty and filled only after they were sold. Such historical practices need to be addressed vis-à-vis the two varieties of diagnostic glass bottles used in this study, namely "Essence of Peppermint" and "London Mustard", recovered in cross-border context. The historical context and archaeological finds of Essence of Peppermint have been extensively documented by Jones.[63] After the Revolutionary War, U.S. apothecaries sold both a patented British product and less expensive U.S. versions. There is both documentary and archaeological evidence indicating that glass bottles bearing "BY THE KINGS PATENT" and "ESSENCE OF PEPPERMINT" were produced in the United States during the nineteenth century. Jones emphasized that while definitive statements about

[62] Anderson 1982. Anderson refutes temporal inferences made by Calver and Bolton 1950, and Walker 1966, 89-91.
[63] Jones 1981.

national origin might be difficult, several attributes could be used to differentiate between bottles of U.S. versus British manufacture.[64] Examples of light green non-lead glass with uniform lettering have been identified as being of U.S. manufacture. British produced bottles were typically colorless lead glass, with larger and thicker letters than U.S. examples. Visual examination and short-wave ultraviolet testing of the Fort Brady specimens confirmed British manufacture. In a similar vein, the two "LONDON MUSTARD" bottles recovered from Storehouse Site on Mackinac Island were also colorless leaded glass and most likely of British origin. However, Jones' concluded that this form could be even more difficult for attributing national origin.[65] Given the proximity to British sources along the border, these items might have been more easily obtained from Canadian sources. Hence, one must closely examine the history and marketing of each of the proprietary or patent medicines in order to assess possible national origins.

Military Items

Military items comprise the final category of excavated cross-border materials in this study. Only four of these items were recovered from two components, namely a British 49th Regiment of Foot button from the U.S. prewar occupation of the Storehouse 1 component, and three U.S. military buttons from postwar British occupation of Fort Drummond. Certainly, there are a number of concerns over the methods of deposition for this artifact type. Certainly, the mere presence of a button does not prove that regimental staff were necessarily present on the site. Buttons could have been collected, curated or

[64] Ibid, 14-23.
[65] Jones 1983.

perhaps reused by civilians on the site. Further, the problems of manufacture-deposition lag and redeposition due to construction disturbance must be taken into consideration.

Yet for all of these concerns, military artifacts can be sensitive indicators of national identities, and a basis for assigning stratigraphic time periods. Once again, in a cross-border context, it is critical to study the military records of service for both sides and to note instances of cross-border military contact. Such information is critical for reconciling the documentary and archaeological records in order to understand the social processes of diachronic cross-border relations at both local and regional levels.

An example of the importance of reconciling the documentary and archaeological records came from the Storehouse 1 component from Mackinac Island. The assessment of a date range for level I/J2 and the middle floor (stratum J) was indeed problematic. One line of evidence concerned the dating of a British military button of the 49th Regiment of Foot. Although this regiment was never stationed at Fort Mackinac, it was stated that "it was in the United States and the Upper Great Lakes area during the War of 1812."[66] This assumption was utilized to extend the terminal date of these strata to the end of the British occupation in 1815. Again, this supposition is not entirely correct.

Stewart's compilation of British regimental service records shows that the 49th was not in the Western Great Lakes during the war.[67] They were stationed in the Niagara Peninsula and did not take part in occupying Amherstburg, Mackinac Island, or Fort St. Joseph. Yet, the 49th had been stationed at Fort St. Joseph between 1803 and 1805. The proximity of the two posts and their record of correspondence indicated the potential for some form of cross-border presence. As previously stated, one such contact involved

[66] Grange 1987, 234.
[67] Stewart 1962, 223-225.

twelve men of the regiment who deserted by stealing a boat and sailing to the Straits of Mackinac in April of 1805.[68] Hence, it would seem this deposit containing temporally sensitive British and U.S. regimental material could predate the British takeover of the island in 1812, and this particular line of evidence was not appropriate for extending the terminal occupation date through the end of the War of 1812.

The U.S. buttons at Fort Drummond also pose some interesting patterns for cross-border military interaction. The two examples of "eagle on cannon, with "CORPS" below" were first issued in May of 1814 after several artillery regiments were consolidated into the Corps of Artillery.[69] This pattern continued until the entire U.S. artillery adopted the "spread eagle" in 1821. Thus, the button would most likely date to the U.S. reoccupation of the border area following the War of 1812. This assumption would be consistent with the documentation of several visits by the military staff of the Boundary Commission following the war. However, the exact mechanisms of deposition cannot be determined archaeologically.

Conversely, there were no British/Canadian military items recovered from the U.S. military components. Yet, there are documented visits by British/Canadian military to forts such as Brady and Mackinac. Further, these accounts suggest that such visits were fairly common in times of peace.[70] Within the region, perhaps only Fort Gratiot seemed to be hostile to cross-border traffic for the reasons discussed previously. Yet, since these

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[68] Clerk 1805.
[69] Wyckoff 1984, 41-42.
[70] A 1981 National Archives of Canada exhibition entitled "Friendly Spies on the Northern Tour, 1815-1837: The Sketches of Henry Byam Martin" cited many published accounts of British officers visiting U.S. cities and military posts and commenting on various aspects of relations between British North America and the United States in this period.

visits were relatively short in duration, individual or small group visits lasting perhaps a day or two might not leave traces in the archaeological record.

In the case of Fort Drummond, Colonel Hawkins and a portion of his staff had visited the post Drummond Island and stayed for a week in November of 1816.[71] Further, Commissioner Major Joseph Delafield and his party spent several days on the island in the fall of 1820.[72] Another account of Drummond Island came from the journal of Thomas McKenney, when he and his party were traveling to negotiate the Treaty of Fond du Lac in 1826.[73] Given the larger size of the Boundary Commission parties and the logistics of survey necessitating stays upwards of a week, there seems to have been a greater potential for cross-border military personnel to deposit diagnostic items through unintentional loss or discard. Hence, deposition of these items was certainly affected by the number of personnel, the duration of their stay, and access to various parts of the sites.

Summary

The documentary analysis of the region confirmed that the stages of the Martinez model of border formation and maintenance were applicable to the St. Mary's River-Lake Huron borderlands region. Indeed, the Martinez model demonstrated that for the period of 1781 through the 1850s, the region vacillated between stages of alienation and coexistence. Within the coexistence stage, phases of lower versus higher tension also could be identified. The analysis also illustrated a growing dichotomy between military

[71] Lt. Col. J. Maule to Major General J. Wilson, November 9, 1816, NAC, RG8, Vol. 260:490-92.
[72] McElroy and Riggs 1943, 317-319.
[73] Anderson 1972.

concerns versus commercial relations developing in the late 1830s, as the border became more stable and an international Great Lakes economy was developing.

The materials testing and analysis revealed that components of the alienation period were extremely difficult to test within this region. Moreover, it would seem that this stage was characterized by a single regional military center with very few other sites. In terms of the coexistence stage, no diagnostic domestic items were recovered from prewar contexts, even though such items were surely present on sites. Similarly, only one of the three prewar components yielded a diagnostic cross-border military item despite the record of military cross-border contacts. Hence, it is difficult to draw conclusions based on such a paucity of materials. The small number of undisturbed contexts that were not contaminated by fill composed of the matrices of earlier occupations was a major stratigraphic problem.

Conversely, all of the postwar components yielded a significant frequency of at least one cross-border material category. Further, statistically significant differences exist between types of excavated materials, and between phases of the postwar period. For the postwar period, ceramics were the least likely to occur, clay pipes more likely to occur, and glass most likely to occur. However, the problems with skewing, especially with the large sample size of Drummond Island ceramics, were evident in this ranking. While Drummond Island failed to register any cross-border domestic material, the analysis showed its 1828 evacuation was too early for many types of marked diagnostic U.S. materials to appear in significant quantities.

However, the frequency and duration of cross-border military visits to Drummond Island was reflected via the presence of several U.S. military buttons. The examination

of the ceramic, clay pipe, and proprietary/patent medicine industries illustrated the complexities of determining national origins for these materials. Certainly, there is a need to study the history of these items and their marketing thoroughly before attributing such origins. In a similar fashion, any discussion of diagnostic military items requires an examination of the forces on both sides of the border, and the nature of military cross-border contact.

Chapter Five - Summary and Conclusions

The purpose of this study was to investigate the formation and maintenance of the Canada-U.S. border in the St. Mary's River and Lake Huron borderlands. The temporal focus spans the border negotiations in the late 1770s and early 1780s, through the emergence of a nascent Great Lakes economy in the 1850s. The study examined the proposition that processes of border formation and maintenance in this region, such as cross-border contact and permeability, can be understood via a series of non-directional stages of social relations emphasizing levels of cross-border permeability.

This approach employed in this study consisted of five steps to investigate varying levels of permeability and interaction, and the their material expression in political border contexts. These steps were: *1) model applicability assessment, 2) time period and site placement, 3) archaeological context assessment and material correlate development, 4) generation of material expectations and hypothesis testing, and 5) data sets analysis and reconciliation.*

The outcome of this research has clear implications for understanding the nature of interaction in the region, and also for the broader use of archaeological and documentary data sources in border research. Specific findings and conclusions are presented while assessing the utility of this approach for interrogating behavioral patterning in border situations.

Model Applicability and Time Period and Site Placement

The model of border formation and maintenance, developed by Oscar Martinez, was employed as the framework for interpreting the ever-changing nature of relations along the border, and to determine potential recurring patterns in these relations. The

applicability of this model was tested initially by qualitative analysis of primary source accounts of border relations during this time frame. The results clearly demonstrated that periods of regional history could be ascribed to the Alienation and Coexistent Stages. In fact, vacillation between these two stages aptly characterized the sequence of occupation for the region prior to the middle of the nineteenth century.

The documentary analysis revealed several important patterns within these two stages. In both manifestations of the Alienation Stage, the region was dominated by a single military center. During times of hostility, the region fell under the military control of the British, and the regional center, Mackinac Island, functioned as the headquarters for the controlling political entity. Hostilities also strongly discouraged both residential settlement and economic development of the area, which is consistent with the low frequency of sites that characterizes this stage. Hence, the documentary data reveal that there were few instances of cross-border accounts from the region which were not of a military nature.

The critical focus of this model is the nature and frequency of amicable cross-border contacts such as personal relationships, official visits, and trade. Indeed, the alienation stage is characterized by an inability to engage in such amicable cross-border contacts. Consequently, while periods of hostility can be described in terms of specific causes and effects such as hemispheric or regional events, the Martinez model, because it attempts to generalize, was not designed to address the nature of case specific conflict in a comprehensive manner. Thus, the model is more effective when assessing levels of permeability and cross-border contact, and not the nature or course of such conflicts.

In contrast to the issues associated with the Alienation Stage, the documentary analysis demonstrated that the Coexistent Stage could be divided into two distinct phases. These two phases identified periods of relatively lower versus higher degrees of border tension. Not surprisingly, higher degrees of tension were associated with periods immediately before and after wars. The identification of such phases within a stage facilitates a deeper understanding of the complexities of interaction.

One of the strengths of documentary records is to provide a variety of perspectives on border relations. Accounts and travel narratives are particularly valuable as they provide a glimpse into the nature of synchronic variations in cross-border relations on a site by site basis. While commentaries by military staff provide many such insights, it is also critical to analyze the perspectives of a wide spectrum of social groups living in the border region. It is only through the ethnohistorical examination of how these groups conceived of the border, and of their neighbors, that issues of social complexity can be addressed in a clear and systematic fashion.

Yet, these accounts were also the products of individuals whose suites of identities often crosscut simple rubrics such as ethnicity, nationalism, and commercial interests. The Mitchells personified the social complexities of a multiethnic family with extensive cross-border commercial, military, and family ties. Ironically, the American Fur Company needed to employ scores of Canadians, including its chief factor, in order to drive British/Canadian interests out of the regional fur trade. Further, U.S. Indian Agent William Puthoff was actually dismissed for noting this practice was contrary to several laws passed by Congress in 1816 to reduce the presence of foreigners engaging in commerce.

On the surface, such behaviors might seem confusing or even contradictory. Yet, they underscore the need to examine as fully as possible, multiple levels of interaction, and how such identities are manifested in border situations. Hence, stages of this model can be applied simultaneously on local, regional, and nation-state scales of cross-border interaction. Primary sources such as correspondence and travel narratives, and secondary sources such as military and commercial histories, generated from both sides of the border, all provide insights and important details of cross-border interaction. These foci not only provide multivocality, but also counterpoints to the agenda and biases inherent in the documentation within each of these levels of the border experience.

It should be noted the Interdependent and Integrated Stages were not tested in this study. Given the trajectory of cross-border relations, the approximate terminal date of this study, around 1860, was too early in the regional sequence to be considered for the Interdependent Stage. While the complimentary economic and social cross-border relationships characteristic of this stage were retarded by the U.S. Civil War, such relations did develop in the decades following the war. Further, the Integrated Stage of this model is considered as hypothetical because Martinez has not yet found a border situation incorporating unrestricted movement of goods and people, as well as the perception that all borderlanders are part of one social system.

Material Correlates

Similarly, the archaeological record as an independent data source yielded important information on the material aspects of cross-border contacts, but also posed some methodological challenges as well. The standards employed in this study to define nationally and temporally diagnostic materials were stringent in order to ensure the

validity of national origin. However, diagnostic materials were only a small portion of material flowing over the border, and in turn, only a portion of diagnostic materials are ever recovered archaeologically. Thus, the detection of diagnostic materials complicated statistical testing due to very small sample sizes.

For example, there is little doubt that British refined earthenware ceramics dominated the North American market prior to the middle of the nineteenth century. Yet, since no defined "diagnostic" sherds were recovered on Alienation Stage U.S. sites, the test failed to reject the null hypothesis (cross-border materials will not occur in significant frequencies) resulting in a "Type 2" statistical error for ceramics. One possible solution to this dilemma could be the adoption of alternative diagnostic criteria for material origin. Depending on the time period and border region involved, some attributes of form, decoration, or fabric could function as diagnostic indicators of origin. Only extensive material culture research can determine whether such attributes serve as reliable indicators for other time periods or other border regions.

Material Expectations and Hypothesis Testing

Generally, the low levels of cross-border contact that characterized the Alienation Stage should result in low levels of cross-border materials on sites. Yet, since the Alienation Stage in this region was characterized by a single regional center to the virtual exclusion of other sites, it proved impossible to find comparable cross-border contexts within the region. Thus, hypotheses constructed to test cross-border comparisons in this region could not be tested properly due to the dearth of comparative data.

Similarly, the second occurrence of the Alienation Stage during the War of 1812 could not be statistically tested because of the lack of identifiable undisturbed contexts dated

firmly to that brief period. Also, the presence of cross-border materials in wartime context is difficult to interpret because of the possible ebb and flow of relatively short occupations across the border. In the case of wartime, even if such contexts were identified, other corresponding cross-border contexts would be needed to assess cross-border materials. Yet, control of the area by one group precluded the establishment of significant sites attributed to the other group within this region. The above situations precluded not only statistical testing of the Alienation Stage, but eliminated the possibility of formal comparison between the Alienation and Coexistent Stages.

However, the nature of Coexistent Stage material relationships could be addressed by statistical testing. Logistical regression analysis was employed to model the probability between observed and expected frequencies, and chi-square analysis was used to assess the significance of these relationships. The first set of hypotheses addressed the nature of prewar material distributions. Unfortunately, only two sites could be tested and only small samples were recovered from these sites. No cross-border domestic materials were recovered from these contexts, and only one cross-border military button was found. Hence, statistical testing of the prewar phase was hampered. The low population levels for the region and contamination from subsequent military construction restricted the availability of suitable contexts. However, this stage could be tested in other regions that had higher population levels and a higher numbers of undisturbed contexts.

The second set of hypotheses addressed the nature of assemblages for postwar contexts. The relationships between the observed and expected values for domestic items were statistically significant and the null hypothesis was rejected. The statistically

significant presence of cross-border diagnostic ceramics, clay pipes, and glass medicine bottles indicated continued U.S. consumption of British goods well after the War of 1812.

While postwar military items were also deemed to be statistically significant, very few examples were actually recovered. It is important to note that while cross-border visits were not uncommon, their short duration and small size of parties were not conducive to detection in the archaeological record. Yet, longer visits consisting of larger parties, such as the Boundary Commission, apparently could leave their mark in the archaeological record. Depending on the specific contexts, the presence of cross-border military items could have a wide range of meanings from combat through coalescence, and their appearance in cross-border contexts warrants close examination. It must be stressed that cross-border military items should not be treated automatically as either intrusive, or necessarily as dating exclusively to known periods of foreign occupation.

The third set of hypotheses contrasted the relationships of diagnostic materials within and between the prewar and postwar periods. Once again, comparisons for the prewar period, and between the prewar and postwar periods, were hampered by sample size discussed previously. Yet, the pair-wise chi square testing of postwar items ranked military items as most likely to occur, followed by glass, clay pipes, and finally ceramics. These rankings were based on the proportions of observed and expected frequencies. Yet, the large differences in sample size skewed the results. Regardless of its diagnostic frequencies, British refined ceramics were a ubiquitous feature of U.S. site assemblages well into the nineteenth century. Hence, any study of this kind must address the potential role of skewing caused by differences in sample size and diagnostic definition factors.

Data Analysis and Reconciliation

As with most archaeological analyses, the discussion of cross-border materials presented the complexities of manufacture-deposition lag, reuse, and curation. In a similar vein, the analysis of materials and artifact types in the archaeological record can render important information about the nature of cross-border contact. For example, the importance of diagnostic artifacts rests not only in their frequencies, but also in the context of industrial development. Such diagnostic marking reflects a growing consciousness among manufacturers toward their products, formal identification of such products, and the expansion of markets. During the first half of the nineteenth century, some industries embraced the expanding regional and international cross-border markets, while others either did not flourish, or chose not to participate in the atmosphere of this newly emerging market capitalism. Diagnostic cross-border marks chart the dates and the extent to which goods penetrated foreign markets. In addition, such marks are also a clear indicator of which industries were still dominated by foreign manufacturers.

This method of examining each industry individually provides at least a partial understanding of how various categories of cross-border goods were viewed by both consumers and manufacturers. In addition, changes in material patterns provide insights into changes in the nature of relationships and the nature of activities taking place between states. In some cases, cross-border goods were sought out by consumers, leading some manufacturers to copy or even forge attributes in order to compete with these foreign goods. Analysis of material patterns can shed light on whether consumption of cross-border items was a matter of consumer preference, or indicative of reliance on a foreign product because of a lack of a domestic production.

Further, links between both manufacture and consumption, and nationalism must be addressed. Certainly, British manufacturers in several industries sought to exploit U.S. patriotic sentiment by producing items laden with nationalist iconography. Conversely, U.S. consumers continued to purchase and use British/Canadian products throughout the first half of the nineteenth century, while Canadian consumers bought U.S.-produced utilitarian ceramics. Such archaeologically derived patterns demonstrate that issues of nationalism and its material expression did not supersede the market forces of supply, costs, and personal preferences.

Certainly, the increasing presence of diagnostic materials on either side of the border is linked to marketing improvements, and increasing migration westward into newly settled regions on both sides of the border. In part, these events were the result of an extended stage of coexistence in the region, and for most of the international border. As a Great Lakes regional economy emerged in the second half of the nineteenth century, the beginnings of the third stage of the model, namely Interdependence, become evident. In future, the nature of cross-border relations and the material expectations for this stage can be assessed and compared with the Coexistent Stage using the methods outlined in this study.

Implications for Archaeological Border Research

Ironically, while political borders are a ubiquitous phenomenon worldwide, little attention has been devoted to their anthropological study, but especially their archaeological manifestations. Yet, archaeology is in a unique position to address the nature of cross-border contact in a diachronic fashion. By using a regional focus, as outlined in this study, one can avoid the tendency to truncate the scope of research at a

border. All too often, a political border unnecessarily serves as an intellectual boundary for research, thereby misrepresenting the spatial scope and scale of regional social and political relationships over time. While social contacts and commodity flows seldom evaporate at a border, a variety of processes act as filters in an attempt to control the volume and trajectory of cross-border contact.

The power of this approach lies in its applicability for the study of border situations worldwide, and to identify diachronic patterns of cross-border contact and permeability. Clearly, this study has shown that processes of border formation and maintenance are not simply a matter of idiosyncratic historical accidents. Rather, they can be understood as a series of behavioral regularities evident in border situations. The Martinez model structures these regularities as stages of border development emphasizing permeability and cross-border contact. Hence, for each stage there is a set of corresponding cross-border relations. The importance of this model for archaeology is that material correlates and expectations can be generated to identify the material expression of these social relations. Thus, the model is sufficiently generalized to identify these processes for any border, while accommodating the unique series of historical events that also define every border. While these stages represent underlying behavioral regularities of border situations, the actual sequences and material correlates will vary over time and space.

In terms of general material expectations, since each succeeding stage represents an increasing level of cross-border interaction, then components of succeeding stages should yield concomitant higher frequencies of diagnostic cross-border items. Yet, it might prove difficult to test the Alienation Stage archaeologically if the single regional center pattern dominates underdeveloped regions with low populations. However, this pattern

might not apply to border regions where industrial development or population concentrations preceded a stage of alienation.

Generally, the material expectation for the successive Alienation, Coexistent and Interdependent Stages would be corresponding higher relative frequencies of cross-border materials. The distinction between stages could be determined by assigning minimum and maximum frequencies for inclusion into these stages, or determining a level of significance for differentiating between stage frequencies. Certainly, such hypotheses and techniques would require some form of quantification of these expected frequencies for statistical testing purposes.

The issue of applying this approach to ancient, pre-industrial, or non nation-state societies presents several challenges. Beekman's diachronic study of political boundaries in Jalisco, Mexico raised several important issues regarding the bounding of such polities.[1] Certainly, the current definition of a border as a fixed line representing limits of state sovereignty must be modified. Beekman suggested that unitary/territorial boundaries delineate zones of direct control, while segmentary/hegemonic boundaries refer to less precisely defined zones of indirect control or influence.

In terms of material correlates or diagnostics utilized in any study, extensive information on material distributions must be available in order to pose accurate correlates. Beekman emphasized that the identification of boundaries could not be based solely on artifact distributions, contending that artifacts "only define the extent of

[1] Beekman 1996. Beekman's dissertation presents a comprehensive a review of various approaches to bounding such polities on a regional level.

economic and perhaps social activity or even just the zone within which a given raw material was exploited."[2]

While these distributions might not be reliable indicators for initially delineating such zones, they can be highly sensitive indicators for the nature of interaction and permeability across such zones. Indeed, Lightfoot and Martinez have noted that borderlanders are more likely to interact with proximal yet foreign groups more often than more geographically distant members of their own groups.[3] The resultant tensions and bonds are most keenly felt, and thus theoretically observable, along borders.

The approach taken in this study was to test data on artifacts and augment it with other data sources such as documentary accounts, or aspects of settlement patterning, or perhaps architectural details. In addition, studies should employ both qualitative and quantitative methods whenever possible, to elucidate patterns not readily evident and to interpret results within the larger context of political systems. Certainly, it would be critical to identify and contextualize the role of military sites for determining the nature of interaction within border regions.

One potential problem in archaeological border studies involves creating a tautology by using materials from a region to identify such borders, and then using the same data to test the validity of its formation and maintenance. This problem can be overcome by using alternate data sources to define its location or details of interaction, or utilizing a model such as the one outlined in this study, to compare hypothesized levels of interaction and material correlates to the observed distributions from border area sites.

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[2] Beekman 1996, 7-8.
[3] Lightfoot and Martinez, 1995.

The processes of border permeability and cross-border interaction are most visible along borders, while changes in permeability and attitudes are most easily viewed in a diachronic fashion. The power of this approach lies in its applicability for the study of border situations worldwide. It facilitates the identification of diachronic patterns of cross-border contact and permeability, while incorporating more specific regional patterns and chronologies. Clearly, this study has shown that processes of border formation and maintenance are not simply a matter of idiosyncratic historical accidents. Rather, they can be understood as a series of general behavioral regularities that impact social relations along borders in a predictable fashion.

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Abbreviations

JCC	Journals of the Continental Congress
MPHC	Michigan Pioneer and Historic Collections
NAC	National Archives of Canada
NAM	National Archive Microcopy (United States)
NMC	National Map Collection (Canada)
RG	Record Group
MG	Manuscript Group

National Archives of Canada:

MG19 - Fur trade and Indians
A2 Ermatinger Family Correspondence
F1 Claus Papers
F29 McKay Papers

MG24 - Nineteenth century Pre-Confederation Papers
F23 Gustavus Nicholls Papers
F59 Vose Papers
F60 Miscellaneous (McCabe)

National Map Collection

RG8 - British Military and Naval Records (Series C)
Volumes 260, 515, 516, 559, 674, 688, 923

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RG10 - Records Relating to Indian Affairs
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M234 - Reel 420

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THE FORMATION AND MAINTENANCE OF THE CANADA - UNITED STATES BORDER IN THE ST. MARY'S RIVER AND LAKE HURON BORDERLANDS, 1780 - 1860

VOLUME II

By

Paul Andrew Demers

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

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APPENDIX A:

FINAL REPORT ON THE FORT DRUMMOND SITE (20CH50) DRUMMOND ISLAND, MICHIGAN

BY PAUL A. DEMERS

ABSTRACT

FINAL REPORT ON THE FORT DRUMMOND SITE (20CH50) DRUMMOND ISLAND, MICHIGAN

BY PAUL A. DEMERS

This research report describes the results of the Fort Drummond Archaeological District Survey (20CH50, 20CH55) located on Drummond Island, Michigan, in Lake Huron at the mouth of the St. Mary's River in Township 41 North, Range 4 and 5 East, in the Township of Drummond. The entire district rests on private property. This investigation was conducted by staff under the direction of Dr. Charles E. Cleland, through the Michigan State University Department of Anthropology, and the Michigan State University Museum.

This project identified the remains of approximately 75 structural features relating to the British military and fur trade occupation from 1815 to1828. These features included a variety of structural remains, two submerged wharves, several wells, and a post cemetery. Subsequent excavation of 10 of these structures in the extant northwest corner of the site revealed storehouses, quarters, privies, and a probable semi-subterranean trader's hut. The investigation of these structures has provided a great deal of information on the nature of this historic occupation, and the critical role this site played in the maintenance of the Canada-U.S. border in the early nineteenth century.

Carlese Westock and Kathy Benua provided generous financial contributions to this project. Also, this project has been funded, in part, through a grant from the U.S. Department of the Interior, National Park Service (under provisions of the National Historic Preservation Act of 1966, as amended) through the Michigan Department of State. However, the contents and opinions herein do not necessarily reflect the views and policies of the Department of the Interior, nor does the mention of trade names or commercial products constitute endorsement or recommendation by the Department of the Interior or the Michigan Department of State.

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Introduction

The Fort Drummond site (20CH50, 20CH55) is located on Drummond Island, at the mouth of the St. Mary's River in the eastern Upper Peninsula region of Michigan. The entire site rests on private property in Township 41 North and Range 4 and 5 East, Drummond Township, Chippewa County. From 1815 until its evacuation in 1828, the site functioned as a British military garrison, fur trade post, and as a center for Native American-British treaty negotiations.

Michigan State University visited the site during a survey of the southern St. Mary's River in the summer of 1990. This project was funded in part, by the Michigan Bureau of History, Michigan Department of State; and the Michigan Department of Natural Resources. In 1991, remains were documented in order to produce a detailed site map. This phase of the project was funded, in part, by the Michigan Bureau of History, Michigan Department of State. Three eight-week field schools were conducted in 1992, 1994, and 1995 to further document and excavate these archaeological remains. The field schools phase was cosponsored by the Michigan State University Department of Anthropology, and the Michigan State University Museum, and Ms. Carlese Westock. In addition, Ms. Kathy Benua was instrumental in marshaling further financial support. The principal investigator for the Drummond Island Archaeology Project was Dr. Charles E. Cleland, Professor of Anthropology, and Curator of Great Lakes Archaeology and Ethnology at the Michigan State University Museum. The field supervisor for the Fort Drummond excavations was Paul A. Demers, a doctoral candidate in anthropology at Michigan State University.

Environmental Setting

The eastern Upper Peninsula is located within the Great Lakes Plain region of the Great Interior Lowland of North America. The southern portion of the Upper Peninsula is composed of marine sedimentary formations of the Silurian Period. During the Middle Silurian Period (432-412 mya) dolomite, halite, and gypsum deposits formed the Niagara Escarpment. This formation stretches from central New York State through the Niagara Peninsula, along the eastern shore of Lake Huron, continuing through the southern Upper Peninsula into Wisconsin (Dorr and Eschmann 1970). There are many outcrops of chert in the area, and an additional source of chert may be found as cobbles in glacial drift.

The processes of Pleistocene glaciation and the diversity of local environmental conditions have created a diverse series of soils in the region. Most of these soils fall under the category of limy podzols. They are derived from native limestone and are formed in cool climates (Veatch et al. 1927). The soil in this area belongs to the Shelter-Posen-Summerville association. These soils are generally found on ground moraines and glacial lake benches with varying degrees of drainage and heights of slope. Specifically, the site area is composed of Shelter series soils which are described as very stony loam (USDA 1992). Archaeological excavation has shown that soil deposition ranges from nothing due to bedrock outcrops to several feet deep.

The region is located in the Canadian Biotic Province (Dice 1943). The transitional nature of this area is expressed in the variety of both flora and fauna. The region is characterized by a climax deciduous forest with sugar maple, yellow birch, beech, elm,

aspen, basswood, hemlock, and white pine. The sub climax in lower areas and swamps includes black spruce, tamarack, cedar, fir, white pine, white birch, and alder (Cleland 1966:9).

Mammalian species include fisher, wolverine, porcupine, snowshoe hare, and woodland caribou. Larger species include black bear, white-tail deer, and beaver. Migratory waterfowl present in this area include Canada geese and several species of ducks(Cleland 1966:9). There is also a wide variety of fish in the waters of this region including whitefish, lake herring, lake trout, and pike-perch. Other secondary species include brook trout, common pike, yellow perch, and sturgeon (Cleland 1966:9).

Historical Background

The St. Mary's River has functioned as a transportation gateway into the heart of the North American continent for several thousand years. During the Contact Period, the area had first attracted European attention in the early seventeenth century. The French visited Sault Ste. Marie in 1641 and reported that approximately 2000 Native Americans had gathered at the Rapids (Thwaites 1959:52:201). In 1668, Pere Marquette established the Jesuit mission of Sault de Sainte Marie near the rapids located in present day Sault Ste. Marie, Michigan. Yet the threat of Iroquois attacks forced many to flee the area forcing the closure of the mission in 1689. The French shifted their focus to the Straits of Mackinac, constructing Fort du Baud in 1685, and the settlement at Fort Michilimackinac in 1715.

By the middle of the eighteenth century, the British were actively competing in the lucrative fur trade of the Northwest Territory. The British regime in the area began after 1760, when they defeated the French in the conflict known as the French and Indian

Wars, or the Seven Years War. The British occupation of Michilimackinac began in 1761 and continued until 1780. The fort was deemed indefensible in event of attack and the garrison was moved to Mackinac Island. The construction of Fort Mackinac attested to the strategic importance of the Straits area in the eighteenth and nineteenth centuries.

After the American Revolutionary War, the British retained this post in direct violation of the 1783 Treaty of Paris in order to maintain both their alliances with the Native Americans and their fur trade interests. However, the post on Mackinac Island was vacated in 1796 under the terms of Jay's Treaty that specified the restoration of all territory according to the Treaty of Paris. The British were forced to relocate their post to nearby St. Joseph Island. Despite the loss of Michilimackinac, the British hoped that the post at St. Joseph Island would become the center of the fur trade and protect British North America from possible attacks from more westerly U.S. posts.

Throughout the late eighteenth and early nineteenth century, European conflicts fused with North American issues culminating in the War of 1812. When the War of 1812 broke out the British used Fort St. Joseph as a staging area, quickly capturing Mackinac Island and holding it for the duration of the war. The War of 1812 was officially ended by the Treaty of Ghent signed in December of 1814. Articles 6 and 7 provided for the return of several key posts including Mackinac Island. The loss of this post was a crucial blow to British hopes for control of this area. The treaty reflected an attempt on the part of the British to scale down military operations in North America in order to concentrate on the Peninsular War.

This policy was not popular with the military and civilians in the Western Great Lakes who had fought to consolidate the fur trade territory. In fact, the exportation and

profitability of furs reached a peak between the end of the War of 1812 and the late 1820's (Cleland 1992:179). When the treaty terms were announced, Robert McDouall, British Commandant of Mackinac, commented "Our negotiators as usual have been egregiously duped...they have shown themselves profoundly ignorant of the concerns of this part of the Empire (McDouall 1815a). McDouall expressed further concern over the loss of influence with Native American groups: "It will retire us out of the reach of the Indians altogether, and give the finishing blow to whatever influence we yet possess amongst them. The surrender of this most important island, the key to the whole western country (McDouall 1815b)." The British viewed the Native Americans as a buffer between the U.S. and the territory of trading establishments such as the Hudson's Bay Company and the Northwest Company. Despite these local protests, Mackinac Island was handed over to the U.S. on July 18, 1815.

Site History

The British already had been searching for a nearby strategic site for a post to counteract the influence of Fort Mackinac in the northern Lake Huron basin. Drummond Island, thought of as part of the Manitoulin Chain of Lake Huron seemed ideal. This island, some 45 miles northeast of Mackinac Island, commands approaches to both the Straits from the north and the entrance to the St. Mary's River from both the east and west (figure 5). A correspondence from McDouall (1815c) to Sir George Murray described the site:

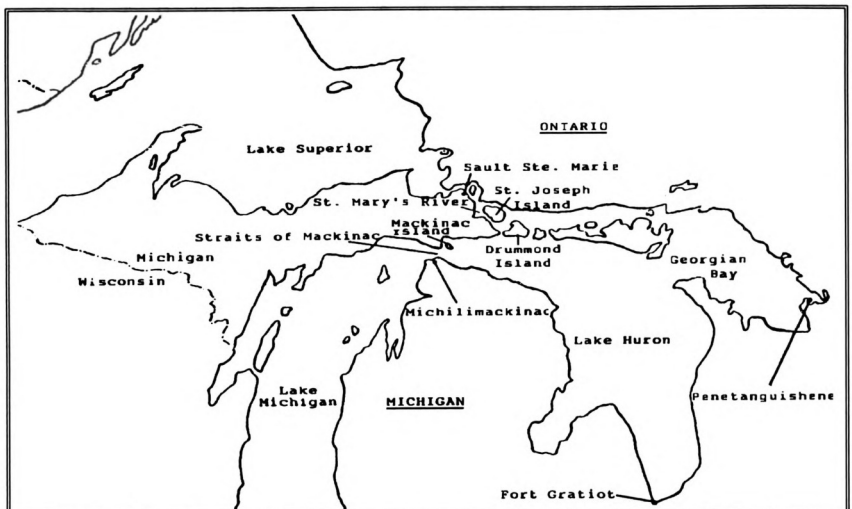


Figure 5: Project Area

> The new post on Lake Huron has been at length fixed upon by Capt. Payne, R. Engineers (who arrived here the 13th) Capt. Collier, R.N. and myself. The situation combines several important advantages viz- an admirable harbour, proximity to the Indians, and will enable to command the passage of the Detour, giving our vessels the double advantage of a good anchorage in that strait in addition to the fine harbour adjoining. The ground fixed upon for the new post, and which was best calculated for the protection of the harbour.

While there do not appear to be any detailed returns of the actual number of people who came to the island in July of 1815, Cook (1896:42) estimated that between 350 to 400 people evacuated to Drummond Island. This number included a company of the 81st Regiment of Foot, two companies of the Royal Newfoundland Regiment, Indian Department officials, and traders. Since these regimental companies were isolated and not at full strength at the end the war, they might have accounted for 150-200 of this total. If the Cook estimate was accurate, then approximately the same number were civilians.

Later, in the fall of 1815, both of these regiments were relieved by two companies of the 37th Regiment of Foot sent from Fort Malden at Amherstburg. Unfortunately, a group of nine men of the Royal Sappers and Miners Regiment who were also ordered to Drummond Island from Fort Malden deserted at Detroit (Vincent 1978:239). The desertion would have lead to a shortage of skilled tradesmen to construct the new post on Drummond Island. However, payment records for 1815 for the post on Drummond Island show that the Royal Sappers and Miners were paid "working money" and "subsistence" through the month of December (McDouall 1815d:80). Current research has not been able to account for this discrepancy.

The British Indian Department was a crucial element in frontier politics and a number of Indian Department officials were also part of the contingent that arrived at Drummond Island. The British Indian Department had been founded in 1755 on order to gain the allegiance of Native American groups. This formal unit of the British Army sought such allegiances and engaged in gift-giving and trade relationships to cement a British-Native American union. The nature of this relationship was born out of the mutual need for protection and survival. The economic and social aspects of this alliance became increasingly important to both parties. The Indian Department spent vast sums of money for gifts and annuities issued during councils held on Drummond Island in order to court allegiance and protect fur trade interests.

During an Indian Council held on the island on June 29, 1816, Lieutenant Colonel William McKay, Superintendent of the Indian Department, told the Native Americans that they would offer no assistance to an Indian confederacy against U.S. fort-building in Indian territory. The Native Americans were told to remain peaceful with the U.S., but to continue visiting the British (McKay 1816). The Native Americans continued to visit British posts such as Drummond Island and Amherstburg in an effort to place pressure on the British to take a more active role against the U.S. During a Council held in August 1817, Sauk Chief Blackhawk admonished the British (Blackhawk 1817):

> You was not afraid to bring us our Great Father's bounty when our hatchet was still red with blood. Why can you not do it when our women and children are poor and we are threatened with the loss of our lands?

Yet the British-Native American connection, demonstrated by such councils, was but one of the strategies used by Native American groups to play-off both powers against

each other. The Native Americans were easily able to fuel the paranoia of Michigan Territorial Governor Lewis Cass and Secretary of War John C. Calhoun. Both individuals were War of 1812 veterans and saw British-Native American rendezvous as opportunities to plot against the U.S.

The strategy of pitting Britain and the U.S. against each other seems to have been somewhat successful in temporarily altering U.S. Indian policy in the Northwest Territory. While the U.S. was forced to offer the Native Americans increased rations and other incentives at Mackinac Island, the U.S. also threatened to withhold any benefits from Native Americans who visited British posts (Calhoun 1819). However, British Indian Department records show that in the year 1823, for example, a total of 3,333 Native Americans visited Drummond Island and received gifts and rations (Claus 1823). The crossing of the border to receive British presents continued on Manitoulin Island until the early 1840's.

Upon arrival the first priority for the new Drummond Island garrison was to provide shelter for themselves and for the stores. A storehouse which had belonged to the South West Company was moved from St. Joseph Island by mid-August 1815, while two others were also relocated to Drummond Island later that fall (Vincent 1978:241). By September of 1815, most of the stores that had been located at St. Joseph Island were now at Drummond Island. By the end of October 1815, an inspection report noted there were two barracks buildings, several storehouses, a hospital, and several other buildings under construction (Vincent 1978:240-241). A sketch map (figure 6) which accompanied

this report placed these structures along the shore of Whitney Bay (Payne 1815). While this map showed no civilian structures on the site, they must have been under construction by the fall of 1815.

Settlement of Collier

Another important component of the post on Drummond Island was the new settlement of Collier or Port Collyer named for the Royal Navy Captain who surveyed the town site. The post commander, Lieutenant Colonel Robert McDouall had received many inquiries regarding the new settlement. McDouall had granted licenses to occupy lots with several stipulations. Lots were 50 feet in the front and 150 feet in depth, and a structure not less than 40 feet wide and 12 feet high, whitewashed or painted had to be built within one year. McDouall also mentioned that the size requirements had been relaxed until the Boundary Commission had made its ruling. In this report, a total of 22 lots were granted along the front, centre, and rear streets (McDouall 1816).

Captain Payne of the Royal Engineers drafted a plan for this new and important post in 1816 (figure 7). It showed a grid plan of lots in the Village of Collier. This is the only graphic period presentation of the town. It showed six blocks of lots but did not label the rear and centre streets, nor the boulevard. The two easternmost blocks each were broken down into six double-size lots and appear to have run east-west. All the other lots appear

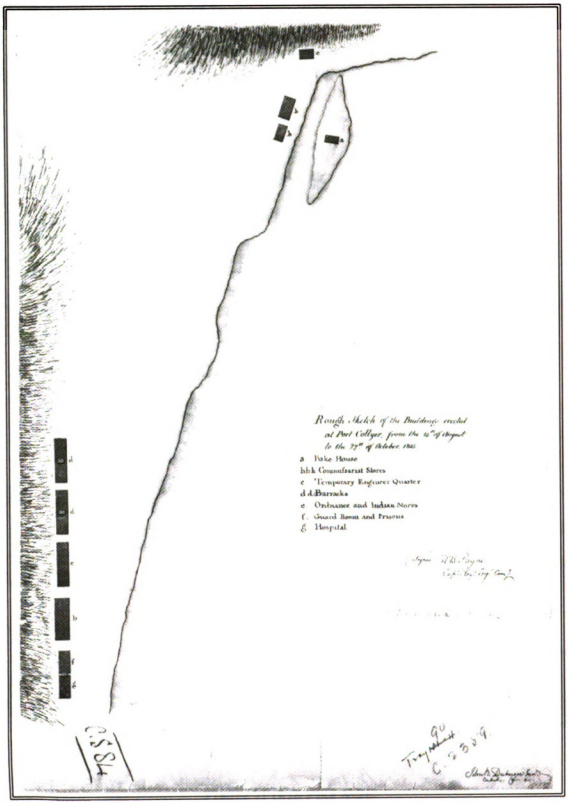


Figure 6: 1815 Sketch Map

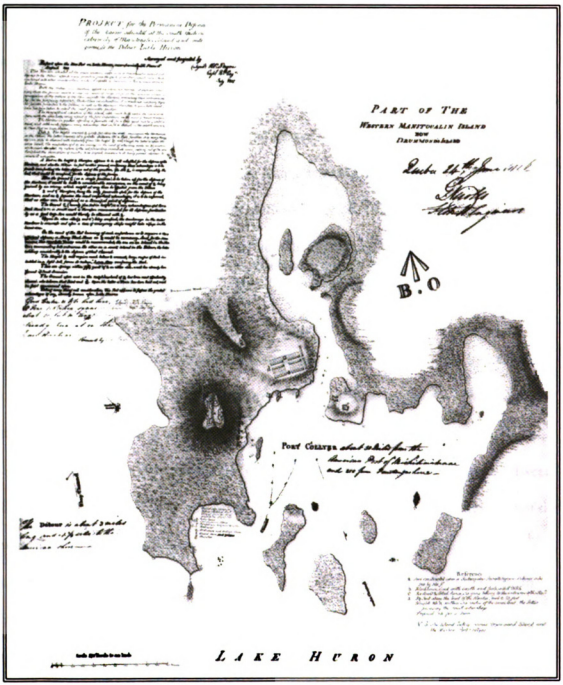


Figure 7: 1816 Plan Map

to have run north-south. The two northern blocks contained seven lots each while the two southern blocks were double-size and contained fourteen lots each. A total of 54 lots were illustrated in this plan.

Additional evidence concerning the village was recorded during the joint British-U.S. Boundary Commission inspection tour that passed through the St. Mary's River area in 1820. The journal of U.S. Commissioner Major Joseph Delafield (1819: 316-317) contains a description of the settlement on September 24, 1820:

> It consists of perhaps 15 houses tolerable, comfortable, made of logs and whitewashed; and of two stories, upon one straight street. The officers have comfortable quarters, detached from each other, of similar construction to the citizens'.

This account differs from the 1816 report of McDouall who stated that lots were occupied on the boulevard and the rear street. Both documents, dated 4 years apart, mention that there were approximately 15 structures in the village. These documents suggest that there was not a substantial increase in the number of lots occupied between 1816 and 1820. In 1819, a sketch of the buildings on Drummond Island exclusive of the town site (Figure 8) was filed with the Royal Engineer Office at Quebec. Yet, no buildings within the town site appear on this map; only a crude western and southern border, forming a large "L" shape, and designated "Town within these lines". By the time of the evacuation of the post in November of 1828, the return of the Deputy Assistant Commissary General, James Wickens, estimated the size of the village to be about forty dwellings. Archaeological reconnaissance confirmed this approximate number of dwellings (Demers 1992).

Figure 8: 1819 Sketch Map

While this installation was never heavily fortified or even enclosed, post officials originally envisioned a powerful fort, a fur trade center, and a base of operations should hostilities have broken out again. Payne's 1816 conceptual map also portrayed a massive installation with a large bastion star-shaped fort measuring 580 feet by 350 feet, several blockhouses, and martello towers. Military thought regarding the defense of Upper and Lower Canada favored fortifying posts such as Drummond Island (Degaugreben 1815:36). However, the British government was scaling down military operations in the Northwest Territory and in 1816, Sir John C. Sherbrooke halted construction of the fortifications on Drummond Island. However, new post commander Lieutenant Colonel Maule, and Royal Engineers regional commander, Lieutenant Colonel Durnford, argued for suspending the ban on construction (Durnford 1816a). In September of that year, Durnford actually authorized post staff to organize labor and materials for a fortified blockhouse (Durnford 1816b). Figure 9 represents a scale drawing for the blockhouse drafted anonymously in 1818. Yet, Deputy Adjutant General Lieutenant Colonel Harvey issued a stay on its construction sometime in the summer of 1818.

As of the spring of 1819, an authorization for construction was not forthcoming due to concerns over the ultimate placement of the international border. The 1819 sketch map stated that the heights near the Detour passage were the "proposed scite [site] for Block-house" and it did not show any structure present. In 1820, Lieutenant J.E. Portlock of the Royal Engineers reported on the state of the posts of Amherstburg, St. Joseph's, and Drummond Island (Portlock 1820). This report inventoried a partially constructed 40 feet

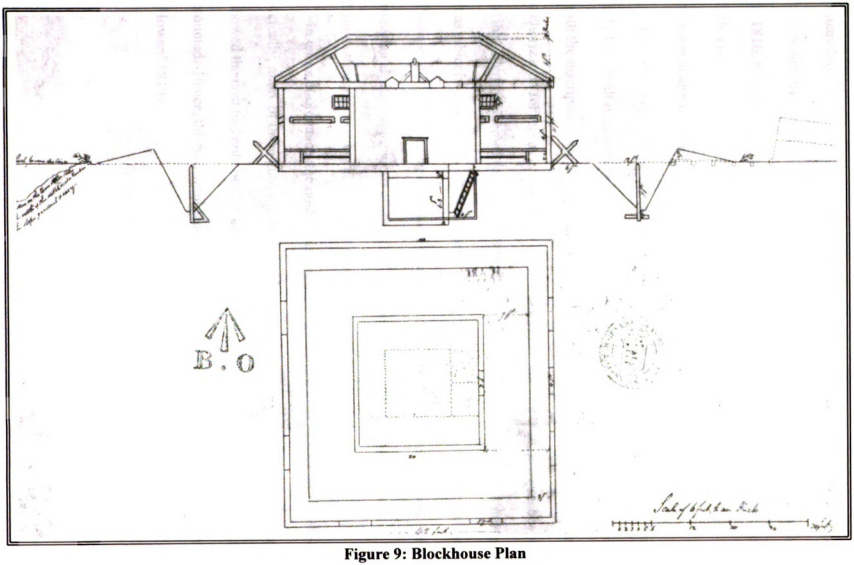


Figure 9: Blockhouse Plan

square blockhouse that had been damaged by fire earlier in that year. This 1820 report also stated that progress had been stopped on building construction on Drummond Island in 1816, by order Sir John C. Sherbrooke. It would seem that the blockhouse was never fully constructed. In 1820, Reverend Jedidiah Morse estimated the strength of the garrison at approximately 140 soldiers (Morse 1822).

The 1823 map of the post (anon 1823) was traced directly from the 1819 map with only two small modifications (figure 10). One change showed a structure on the heights with the inscription "Proposed Block House comm'd [commissioned] in 1816". The authorization for this structure seems to have been backdated to 1816, presumably prior to the orders of Sherbrooke. Cook (1896:52) noted the ruins of a structure and interpreted it as a blockhouse in the northwest corner of an earthwork on the heights near the Detour Passage. Mr. James Hodgson, a long-time resident of the island also noted these same ruins during his explorations of the island in the 1940's (personal communication). Unfortunately, quarrying activity on the island has destroyed this area.

In terms of ordnance, the post became a depot for British guns in the Upper Lakes. Actually, many of these guns did not have the proper carriages. An 1819 ordnance return showed the post had only one 24-pounder, two 18-pounder, and four 6-pounder guns mounted. Hence, the post would have had only a few functioning gun emplacements (Howard 1819).

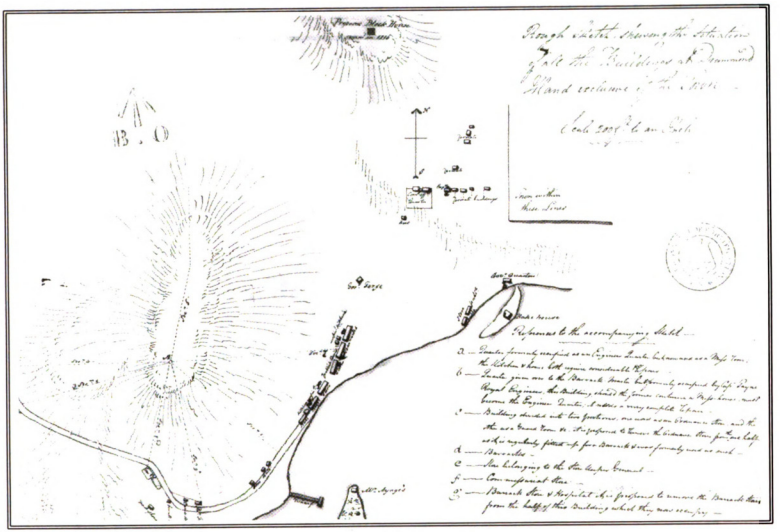


Figure 10: 1823 Sketch Map

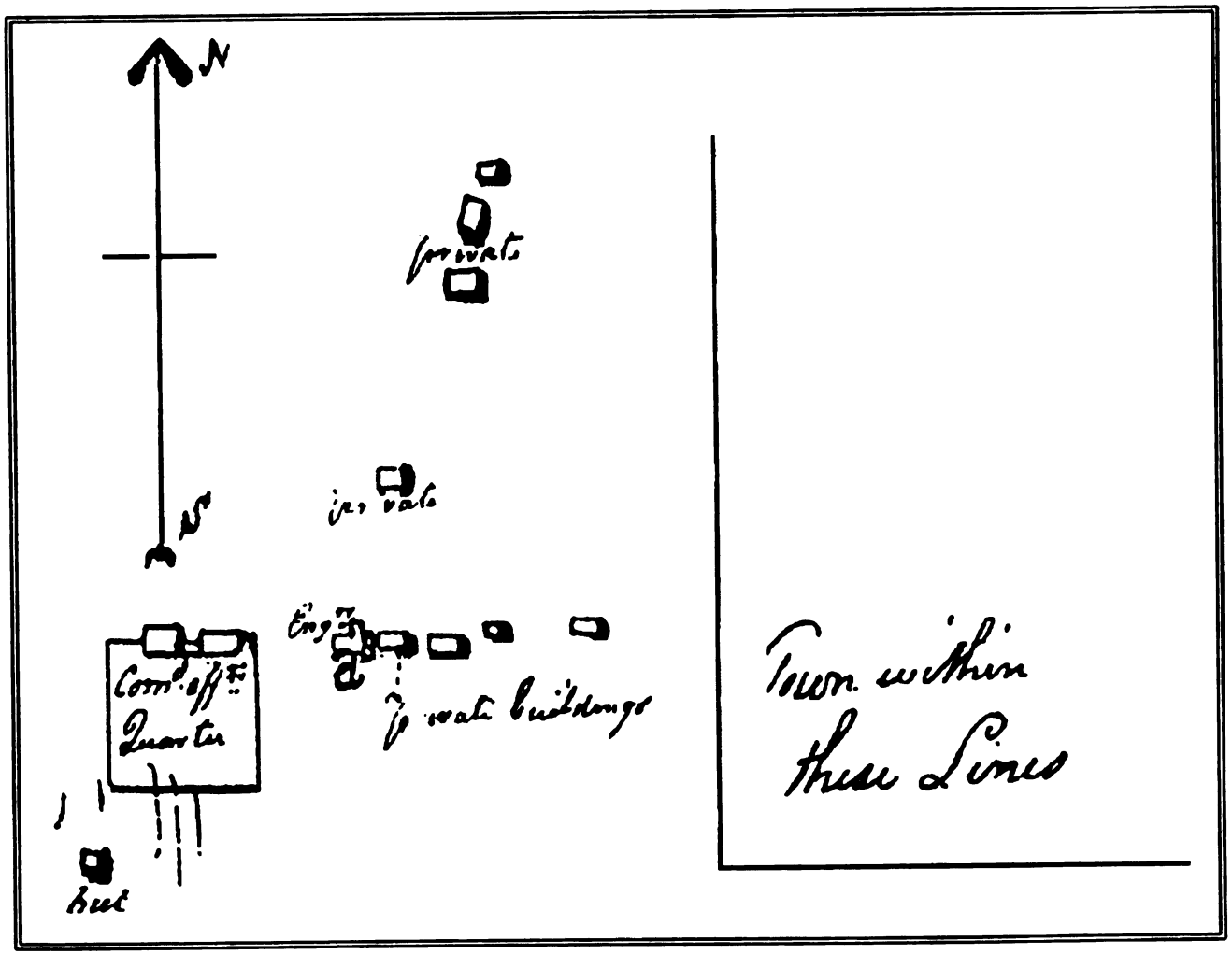


Figure 11: 1823 Map Close-up

Private Buildings and Quarters

This 1819 sketch plan identified a series of eight "private buildings", and two closely situated buildings which formed a compound, situated west of the town site. Four buildings were 4 buildings oriented north-south, while the other 4 buildings were oriented east-west in an "L" shape. A ninth structure, a former Engineers quarter that was turned into a kitchen and mess labeled as "a" on this map, was located at the southwest corner of this "L" configuration. The meaning of the term "private" is confusing in this context. The term would exclude government buildings that were almost always identified on British military maps by ownership and/or function. The 1823 map as a tracing from the 1819 map, did not show any new structures in this area. However, the two structures of the unlabeled compound west of the "L" configuration were now identified as Comm'd Offrs Quarter." It would seem this was an abbreviation for commanding officer's quarter.

In 1822, the Boundary Commission decided that Drummond Island was within U.S. territorial waters. Discussion on finding a replacement for this post began immediately after the news was made public. The following year, a commission headed by Lord Durnford was charged with determining the condition and value of public buildings in the Canadas. The Commission reported that there were 18 public buildings on Drummond Island totalling 1,273 pounds sterling Halifax currency (Durnford 1823). The scaling down of operations at the post continued as Major Goff was relieved of command by Lieutenant James Gaston and a smaller detachment of the 70th Regiment of Foot in June of 1824 (Cook 1896:67).

The Smyth Commission of 1825 concluded all of the buildings were "more or less decayed, and totally unworthy of repair.(Smyth 1825)." After a discussion of all possible

alternative locations, the Commission recommended the military and naval establishment at Penetanguishine on the eastern shore of Lake Huron. The report suggested diverting the Native Americans to Amherstburg for their annual visits.

In June of 1827, Lieutenant Gaston and the 70th Regiment were relieved by Lieutenant Carson and only a half company of the 68th Regiment of Foot (Cook 1896:67). During the thirteen year occupation of the post, the garrison which began with nearly three full companies under the command of a lieutenant colonel, dwindled to a half company under the command of a lieutenant.

The evacuation of the post on Drummond Island took place in November of 1828. The British occupied this post until the Boundary Commission agreed on the placement of the border under Article 6 of the Treaty of Ghent. The brig *Duke of Wellington* and the U.S. schooner *Cincenata* were chartered from Fort Erie in October of that year to sail to Drummond Island, and transport the garrison and stores to Penetanguishene. However, the brig was too small, and many of the stores had to be stored at St. Joseph Island (Vincent 1978:261). On November 14th, the U.S. took possession of the island and the brig carried the garrison to Penetanguishene, arriving a week later. The return of the Deputy Assistant Commissary General, James Wickens, showed that seven officers, forty men, fifteen women, twenty-six children, and three servants departed for their new post (Wickens 1829). This return also showed that during the winter of 1828-1829, only three families remained on the island.

The evacuation of Drummond Island drew to a close the final episode of the struggle of the Old Northwest Territory. The long term importance of this area has been highlighted by the three and a half century struggle between Native Americans, French,

British, and the United States. Yet, for all of its former strategic importance it was never again occupied as a military post.

There do not seem to be any references in the documentary record for U.S. forces occupying the installation after the British evacuation. Indeed, U.S. military correspondence mentioned that only one U.S. officer was sent to accept the public buildings upon the evacuation, and a local resident was to be appointed as the caretaker (McCabe 1828). However, there are sporadic references to the island in the 1830's, and at least one council held on the island on September 21, 1831 (Schoolcraft 1831). An 1840 journal entry for Bela Hubbard's visit to Drummond Island, as part of the Houghton expedition, commented (Peters1983:17):

> The island was in consequence deserted, the buildings, which a few yrs. ago presented quite an imposing appearance, have since burnt to the ground, the cedar fences have been cut off for fire wood...the ravage of decay which a few short years may produce.

A number of articles and book chapters have been devoted to various aspects of the Fort Drummond site. Samuel F. Cook wrote the first detailed study of the Fort Drummond Site in 1896. Cook drew on documentary sources and folklore to describe the history of the fort. Cook also developed a conjectural map of the fort based on several documentary sources. Over the years, a number of articles and book chapters have appeared which address various aspects of the post. In 1931, the Old Forts and Historic Memorial Association produced a short essay on site ruins and the post cemetery (20CH55). Kathryne Belden Ashley (1978) provided a regional historical context and details of social interaction at the post, and discussed the first quarrying activities and the arrival of settlers in the mid 1850's. David Armour (1983) addressed Native American

perspectives via an annotated presentation of a Council speech given on Drummond Island in 1818. Larry Wakefield (1986) dispelled myths surrounding the visit of the Boundary Commission in 1820 and provided several interesting vignettes of Drummond Islanders. Demers (1998) discussed the nature of social group interaction along the international border focusing on Drummond Island. The island also figures prominently in a regional history by Gutsche et al (1997), and in a history of nearby St. Joseph Island (Abbott et al 2000).

Research Strategy

The following section details the general excavation strategy and goals for the archaeology of Fort Drummond on a yearly basis. Specific methods and results for each structure are discussed in the next section.

In the summer of 1990, Michigan State University initiated a regional survey of the Lower St. Mary's River as part of a long-range research project in the eastern Upper Peninsula of Michigan. An initial walk-over of the Fort Drummond site conducted with local residents revealed that the site was in an excellent state of preservation. In fact, it was perhaps the most well preserved British military and civilian fur trade complex left in North America (Demers 1990).

A crew from the Michigan State University Museum under the direction of Dr. Charles E. Cleland returned to the island in the summer of 1991 to more carefully examine the site. A detailed site map identifying the location of approximately 75 structural features (figure 12) was generated for the Fort Drummond military complex. This map has been updated to reflect the results of excavations through the 1995 field season. These remains include structural platforms, chimney and hearth remains, several submerged military wharves, wells, and a post cemetery. The site components and boundaries were delineated and National Register of Historic Places nomination forms for the site were also updated (Demers 1992).

Archival Research in the Public Archives of Canada (PAC) has uncovered numerous documents relating to the British occupation of Drummond Island. Comparison of documentary and archaeological data indicated the complex was underreported in official correspondence from the post. The building restrictions imposed by the government seem

to have conflicted with the post officers' concerns over defense and the maintenance of the fur trade. In addition, the fur-trader Village of Collier did not obey the strict military building codes originally imposed by the military. The grid plan of the 1816 map did not accurately reflect the settlement pattern determined through archaeological reconnaissance (Demers 1992). These discrepancies in the size and configuration of the post illustrated the potential for understanding the behavior of diverse groups including: the British military and colonial governments, U.S. Federal and Michigan Territorial Governments, post officials and fur traders of various ethnic backgrounds, and Native American groups, all under the veneer of British military control.

1992 Excavation Strategy

Indeed, the mapping and archival research phases of this project generated many research questions. The research design developed for fieldwork focused on the clusters of structural remains within the site to develop a representative sample of structural variation within the site. While a number of landowners consented to inspection and mapping of remains, only two landowners who have structural remains located on their property have given permission to excavate. These are Osborne Materials (structures 12-21,73-74) and the O'Neal family (structure 72). Hence, the excavation was limited to the remains located on their respective properties. Permission to excavate on the other properties has been denied repeatedly.

The 1992 field season concentrated on structures 12 and 13, located in the northwest corner of the site. Documentary evidence in the form of contemporary maps and accounts suggested that these structures could have been commissioned officer quarters (Demers 1992:18). The excavation was designed to recover data on the functions of

these structures, identities and statuses of occupants, and techniques involved in construction. Generally, test units were 5 feet by 2 feet in order to maximize linear exposure to structural features.

1994 Research Strategy

The 1994 field season was devoted to the examination of several structures east of the 1992 excavation area in order to determine spatial and functional relationships of the Officers' Quarters and/or the Village of Collier. The 1823 map of the site (figures 10, 11) clearly demarcated the town as separate from the cluster of private buildings and officers quarters. However, the surface survey of archaeological remains (figure 12) indicated that there is no clear demarcation between these two subareas. Excavation of structures in this area was needed to address several important discrepancies between archaeological survey data and the documentary record.

The principal area of investigation was the line of structures running north-south that appear on both the 1819 and 1823 maps. The goal of the 1994 excavations was to provide data on the size of these buildings and the nature of their occupation. Excavation centered on the southernmost structural remains in this line. There were several historically documented buildings that could represent these remains. While no dimensions were given on these maps, several accounts do provide building measurements. The first possibility was that these remains represented a structure labeled on site maps as "a" and described as a "Quarter formerly occupied as an Engineer Quarter but now occupied as a Mess Room; the kitchen and house require considerable repairs" (figure 8).

Another possibility was that the remains could represent the commanding officer quarter as documented on the 1823 map. The 1820 Portlock report described this structure: "The principal house consists of three rooms on the ground & two on the attic Floor, The other of a kitchen and two small rooms" (Portlock 1820).

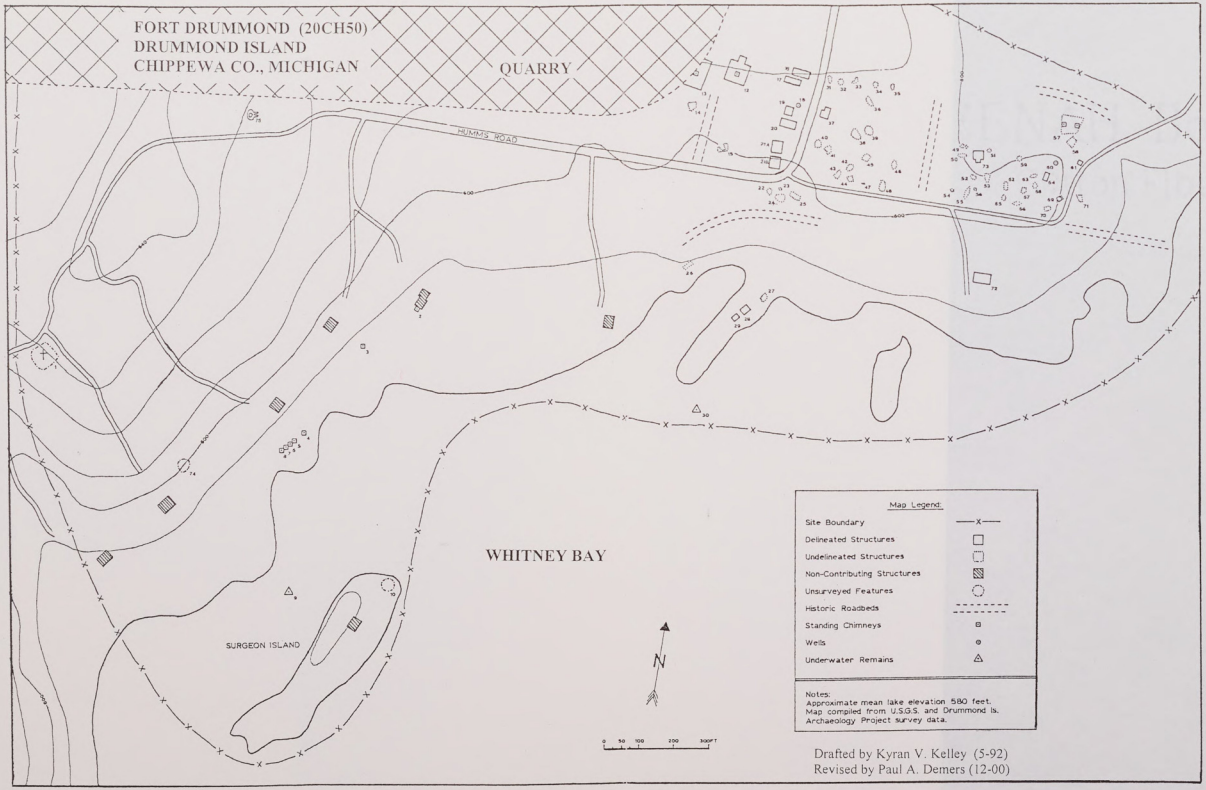
It is not clear whether activity areas such as a mess and/or kitchen were enclosed within a single structure, or represented by two structures. The references to multifunctional areas such as kitchens, messes, and a house in maps and descriptions suggested these could have taken place within two structures. Yet, they were referenced as one structure. Hence, excavation was needed to determine whether structure 21 represented a single structure, and to identify activity areas to assess functionality. Initial testing of structures 16, 17, and 20 was also conducted to begin the assessment of their functionality.

1995 Excavation Strategy

The 1994 excavations revealed the extant remains of structure 21 actually represented two buildings, renumbered as 21A and 21B, each approximately 38 square feet in size. Yet, there remain discrepancies between various documents, and between documents and the archaeological record. While the 1994 assemblage was not sufficient to assess functional distinctions, initial inspection of faunal remains from these structures revealed that early stages of food processing were present in structure 21B. Further excavation was required to obtain additional data for assessing their functionality.

During 1994, only limited testing of structures 16, 17, and 20 was possible. Yet, this testing revealed tremendous potential for further data recovery. The goal was to delineate

the size of structures, ascertain details of construction, and obtain representative samples to assess the functionality of these structures (figure 13).


FORT DRUMMOND (20CH50)
DRUMMOND ISLAND
CHIPPEWA CO., MICHIGAN
QUARRY
HUMMS ROAD
WHITNEY BAY
SURGEON ISLAND
N
0 50 100 200 300FT
Map Legend:
Site Boundary
Delineated Structures
Undelineated Structures
Non-Contributing Structures
Unsurveyed Features
Historic Roadbeds
Standing Chimneys
Wells
Underwater Remains
Notes:
Approximate mean lake elevation 580 feet.
Map compiled from U.S.G.S. and Drummond Is. Archaeology Project survey data.
Drafted by Kyran V. Kelley (5-92)
Revised by Paul A. Demers (12-00)

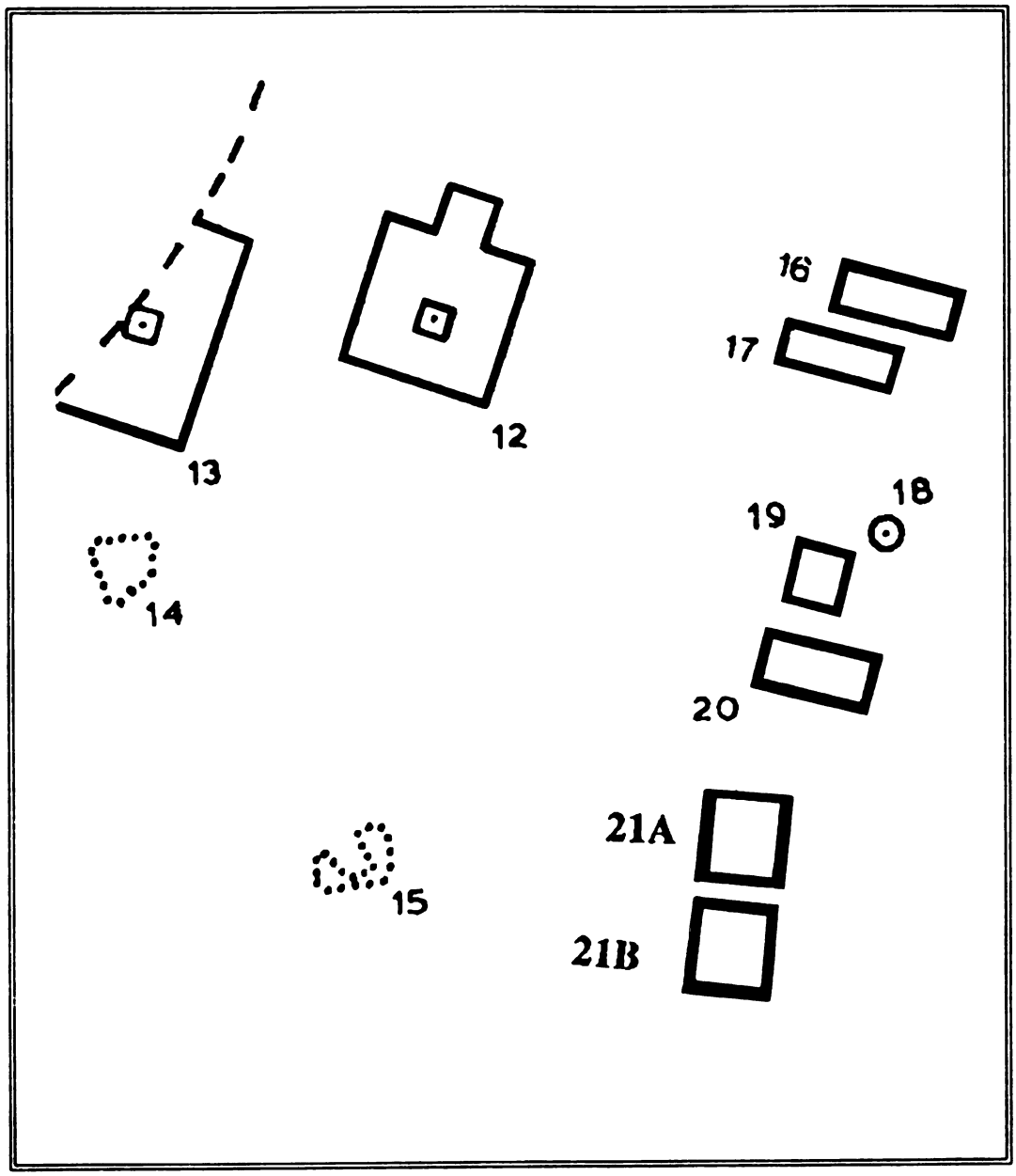
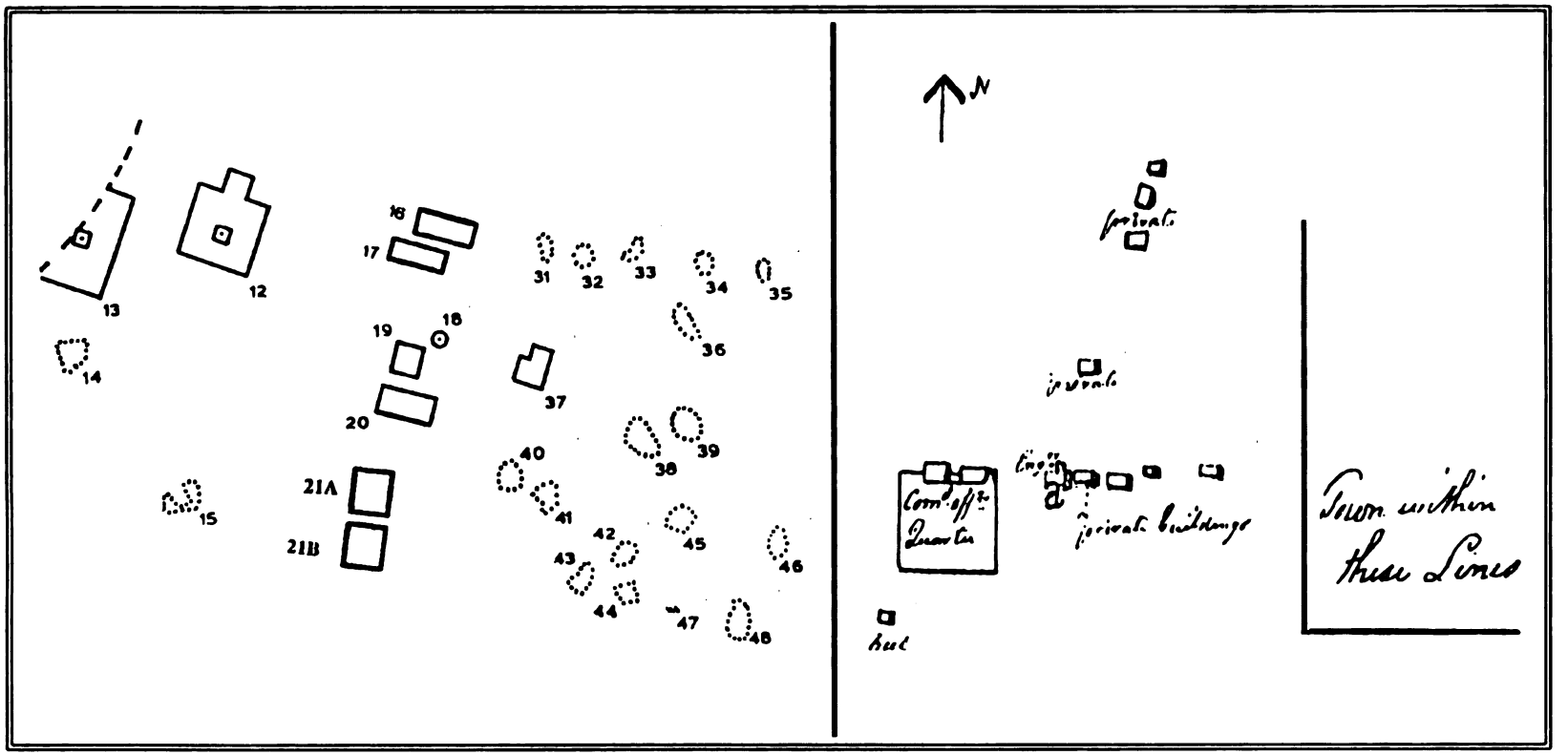


Figure 13: Excavation Area (1994 -1995)



***Not to Scale**

Figure 14: Excavation Area and 1823 Map Comparison

Table 6: Test Unit and Pit Masterlist

Unit #	Provenance	Structure	Unit #	Provenance	Structure	Unit #	Provenance	Structure
001	N264 W242	12	051	N009 W113	21B	101	N280 W064	16
002	N259 W244	12	052	N014 W113	void	102	N255 W087	17
003	N254 W242	12	053	N064 W104	21A	103	N257 W070	17
004	N269 W237	12	054	N019 W108	21B	104	N287 W104	16
005	N274 W237	12	055	N024 W113	21B	105	N241 W087	17
006	N279 W237	12	056	N080 W104	21A	106	N249 W087	17
007	N249 W242	12	057	N049 W084	21A	107	N249 W135	17
008	N284 W237	12	058	N049 W124	21A	108	N257 W094	17
009	N243 W239	12	059	N049 W093	21A	109	N237 W107	17
010	N243 W234	12	060	N049 W105	21A	110	N238 W087	17
011	N184 W367	13	061	N024 W108	21B	111	N124 W105	20
012	N179 W367	13	062	N049 W088	21A	112	N134 W105	20
013	N266 W349	13	063	N054 W088	21A	113	N134 W095	20
014	N258 W354	13	064	N064 W112	21A	114	N134 W085	20
015	N243 W248	12	065	N237 W112	17	115	N237 W102	17
016	N247 W242	12	066	N257 W117	17	116	N139 W100	20
017	N263 W354	13	067	N184 W132.5	19	117	N139 W090	20
018	N241 W246	12	068	N160 W132	19	118	N129 W085	20
019	N229 W252	12	069	N153 W116	19	119	N129 W105	20
020	N234 W254	12	070	N186 W118	19	120	N115 W090	20
021	N239 W124	17	071	N166 W118	19	121	N139 W095	20
022	N235 W070	17	072	N180 W106	19	122	N129 W080	20
023	N134 W092	20	073	N188 W132	19	123	N144 W100	20
024	N147 W115	20	074	N164 W109	19	124	N139 W105	20
025	N069 W118	21A	075	N167 W132	19	125	N139 W132	20
026	N034 W117	21B	076	N172 W127	19	126	N134 W100	20
027	N039 W135	21A	077	N237 W117	17	127	N124 W129	20
028	N064 W124	21A	078	N242 W112	17	128	N129 W107	20
029	N084 W121	21A	079	N247 W112	17	129	N129 W090	20
030	N039 W117	21A	080	N282 W087	16	130	N129 W100	20
031	N044 W117	21A	081	N287 W116	16	131	N124 W131	20
032	N029 W117	21B	082	N237 W122	17	132	N122 W129	20
033	-	75	083	N237 W127	17	PIT1	-	21A
034	-	75	084	N282 W104	16	PIT2	-	20
035	-	75	085	N252 W112	17	PIT3	-	20
036	N034 W122	21B	086	N270 W116	16	PIT4	-	19
037	N029 W105	21B	087	N275 W116	16	PIT5	-	20
038	N024 W110	21B	088	N267.5 W116	16	PIT6	-	19
039	N019 W105	21B	089	N268 W107	16	PIT7	-	12
040	N029 W122	21B	090	N268 W099	16	PIT8	-	13
041	N104 W113	20	091	N268 W087	16	PIT9	-	20
042	N104 W133	20	092	N268 W081	16			
043	N284 W082	16	093	N289 W077	16			
044	N232 W112	17	094	N295 W108	16			
045	N257 W124	17	095	N293 W095	16			
046	N296 W082	16	096	N273 W074	16			
047	N019 W113	21B	097	N263 W081	16			
048	N006 W104	21B	098	N295 W091	16			
049	N001 W116	21B	099	N273 W066	16			
050	N028 W124	21B	100	N251 W135	16			

Table 7: Features Masterlist

Feature	Provenance	Structure	Function(s)
001	007	12	chimney base north face
002	005, 006	12	north wall
003	011, 012	13	south wall builder's trench
004	009	12	interior ash pit
005	003	12	possible floorboard fragments
006	015	12	possible floor joist fragments
007	018	12	hearth platform south face
008	019	12	south wall builder's trench
009	022	17	cobble drain
010	023	20	floorboard fragments
011	029	21A	small refuse pit
012	051	21B	chimney fall
013	047	21B	east-west interior stone partition
014	053	21A	stone concentration-function unknown
015	054	21B	north-south interior stone partition
016	065, 077, 082, 083	17	south wall
017	065, 078	17	north-south floor joist
018	066	17	north wall and shoring
019	065	17	disturbed flooring remnant
020	070	19	north wall
021	079	17	hearth area west face
022	089	16	south wall builder's trench
023	114	20	east wall
024	116	20	north wall and shoring

Structural Descriptions

Structure 12

Structure 12 measured approximately 50 feet north-south by 40 feet east-west . It was a large quarter with a double-sided chimney. The excavated portion northern wall foundation (running east-west) was designated as feature 2. Test units were placed intercept the wall at a 90 degree angle near the midpoint of this wall. These test units represented the foundation and the area of rock fall associated with the demise of the building. This debris scatter indicated that the wall collapsed outward to the north. Since no builder's trenches were discovered, it would seem that the large stable stones visible on the surface were incorporated into the foundation as footings. No part of the feature was discovered in test unit 4, which would suggest this area represented the interior of the building.

Units 6 and 8 probed the area north of the wall to test a square depression that could have been a storage area. The stratigraphy of unit 6 revealed a level of silty clay with small stones and gravel, sloping down to the north. The uniform small stones and gravel are not characteristic of natural soil deposition in this area of the site. This level also contained a number of very small glass and ceramic sherds and flecks of charcoal. Their small size is indicative of a traffic area on the site. Together, the clay and gravel soil composition and the artifact size suggest a pathway from structure 12 to the 20 square-foot covered storage pit.

Feature 8 represented a portion of the builder's trench for the south wall of structure 12. The surface of test unit 19 was located on the edge of a structural platform of earth and limestone, constructed to elevate the southern half of the structure. Hence, the unit

sloped down towards the south and the initial levels were excavated to level off the floor. A large amount of historic debris was recovered from these initial levels above the stain marking the trench. The feature was initially recognized as a dark stain in the southern half of level 4 at approximately 6 inches below the present surface. A high density of historic material was recovered from all levels of the feature. The trench ended at approximately 20- 24 inches below surface.

Since this was the only excavated structure with an intact chimney, units were situated around the chimney to document construction details. Test unit 16 was placed in the northern hearth to record the detail of chimney construction, whereas test unit 18 was placed in front of the southern hearth to glean information on the hearth activity area. The chimney was not placed in the center of the structure, but rather within the southern portion of the structure. The chimney measured seven feet north-south by six feet east-west. Feature 1 represented the northern base of the double-sided hearth/chimney of structure 12. It was originally recognized as a charcoal stain in level 6 and designated as area 1. Further excavation revealed several mortared courses of flat limestone and cobbles that continued approximately 2 1/2 feet below the present ground surface. There was no evidence of flooring material in front of the hearth. This soil was removed from between the rocks and no portion of the intact feature was removed. There were very few artifacts recovered from this context.

Feature 7 represented a floor area immediately in front of the southern hearth of structure 12. While the northern and western portions of test unit 18 had been disturbed, a portion of the floor remained intact. The floor was composed of stone and bricks set into a bed of mortar. The base was composed of mortared stone similar to the northern

part of the chimney. Excavation also revealed a small "wing" addition placed onto the southwestern corner of the chimney. This modification took place after the initial construction of the chimney as evidenced by the service trench detected in the southern corner of east wall of Test Unit 15.

Additional interior floor detail was unearthed immediately west of the chimney. Feature 6 was a large rectangular stain with ash and wood fragments. The stain was linear, running north south along the west wall of the unit, parallel to the chimney at a distance of approximately 2 feet out from it . Its position suggests that it was a joist or floor beam. Two round stains located on the edge of the feature represented post molds for structural supports. The color and texture of the soils in the northern and southern halves of the unit were very different suggesting that there may have been a partition between the northern and southern areas of the buildings. Many nails and burned ceramics and glass were found in association with the burned wood indicating it probably burned in situ.

Visual inspection of the chimney surface on both the northern and southern faces revealed a square horizontal indentation at approximately 7 1/2 feet above present ground level. These indentations could represent spaces for horizontal cross-member beams. The beams would have supported a second story for the structure.

Feature 5 represented possible floorboards for the interior of structure 12. The feature was originally recognized as area 1 in level 4. Several pieces of wood running roughly north south were recovered within level 6 at a depth of approximately 11 inches below the surface. The large amount of structural material and mixed nature of deposits in this area suggests the floorboard fragments had been disturbed during the demise of the

structure. Feature 4 was an ash pit located against the eastern side of the south face of the chimney of structure 12. It extended east out from the eastern chimney wall for a distance of approximately 4 feet. The pit began approximately 8-14 inches below the present surface and extended down 18-25 inches, due to the slope from west to east. The stratigraphy revealed multiple dumping episodes within the pit.

In terms of the artifact assemblage, the possibility for sample error existed due to the relatively small volume excavated relative to other structures. However, it is interesting to note that structure 12 recorded the highest frequency of rosehead and manufactured headless nails, while ranking second in L-head hand forged nails. The structure also possessed a high frequency of lead glass stemmed vessel fragments and dark green cylindrical bottle fragments.

The faunal remains of this structure reflected a variety of species. Swine and sheep/goat occur in small numbers whereas beef, chiefly vertebrae and ribs, occur in moderate numbers. In terms of wild species, ducks, hare, and fish are present in higher proportions. The construction details and the assemblage patterns suggest this structure was a large officer quarter. While no interior partitions were discovered, the indentations on the chimney suggest a second floor.

One possible identity for this structure was the commanding officer's quarters. While the 1819 sketch map showed an unnamed compound of two structures immediately west of the private buildings area, the 1823 trace map did identify the compound as " Com^{d} Off^{rs} Quarter." This abbreviation most likely stood for "commanding" officer's quarter and not simply "commissioned" officers quarter, a term that would have been redundant in the early nineteenth century. Originally, structures 12 and 13 together were thought to

represent the two buildings comprising the compound, but the approximately 45 feet distance between buildings was problematic.

In 1820, Portlock reported that the main house of commanding officer's quarters measured 30 feet by 25 feet, whereas the kitchen measured 34 feet by 16 feet. Portlock described these structures as:

> a frame house weather boarded and connected by a passage with a post and log building used as a kitchen ...The principal house consists of three rooms on the ground & two on the attic Floor, The other of a kitchen and two small rooms both are in good order.

According to these measurements, the two structures would have measured approximately 64 feet by 41 feet, as opposed to the approximately 50 feet by 40 feet structural footprint. It is not known whether the exterior storage pit would have been included in this original measurement. While the maps show an east-west partition, the placement of the chimney and the excavation of the chimney sides suggested the possibility of some form of interior north-south partitioning. Further, a measurement of 16 feet north from the southern wall of this structure, would butt up against the hearthstones of the southern chimney face.

This measurement raises the possibility that the southern portion of the structure could have functioned as the kitchen. The corresponding east-west measurement would be off approximately six feet. Yet, given the conjectural nature of the west wall, this difference between documentary and archaeological sources is not excessive. Unfortunately, the faunal evidence was not sufficient to draw clear distinctions, while the ceramic assemblage was too small to draw any conclusions. The only distinct artifact pattern to emerge between these two portions of the building was the stemmed drinking vessels. These vessels which suggest consumption versus food preparation were dominant in the

northern section of the building. However, the assemblages are simply too small to draw any conclusions.

Local tradition places the post's commanding officer's quarter on the shore of Whitney Bay. The single piece of evidence for this placement comes from an engraving in Bigsby's (1851) travel narrative "The Shoe and Canoe". The 1820 engraving shows a view from the heights looking south to the bay with the Commandant's house and barracks in the foreground. However, given the perspective of the sketch, it is difficult to tell how closely the quarter is situated in terms of the shoreline. Also, the issue of artistic license is always a concern for the interpretation of historic landscapes.

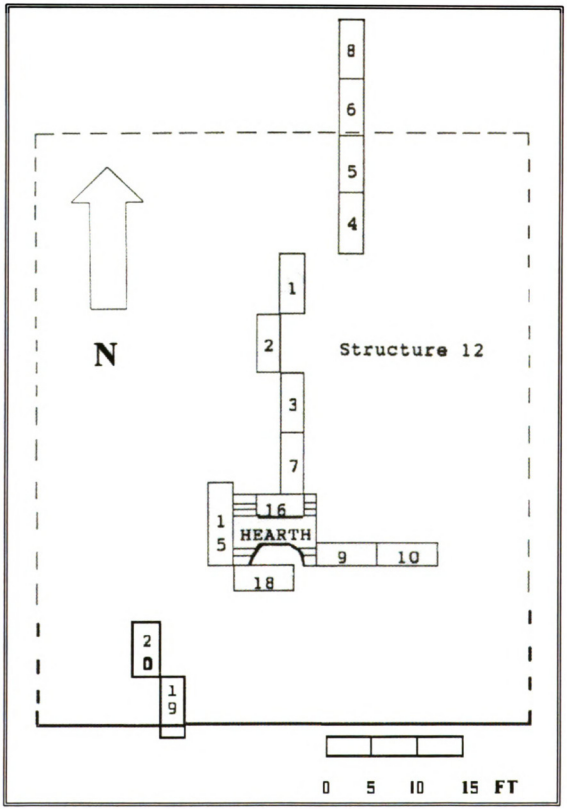


Figure 15: Structure 12 Test Units

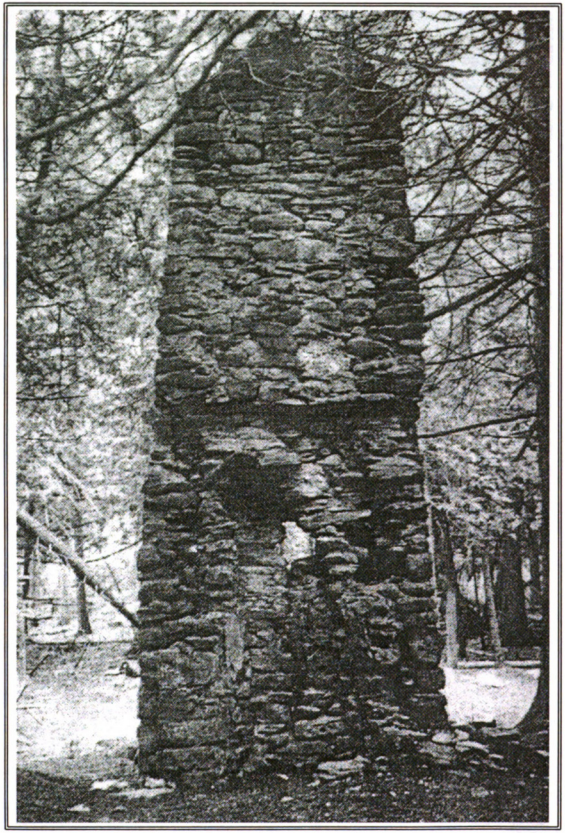


Figure 16: Structure 12 Chimney (South Face)

Figure 17: Structure 12 North Wall

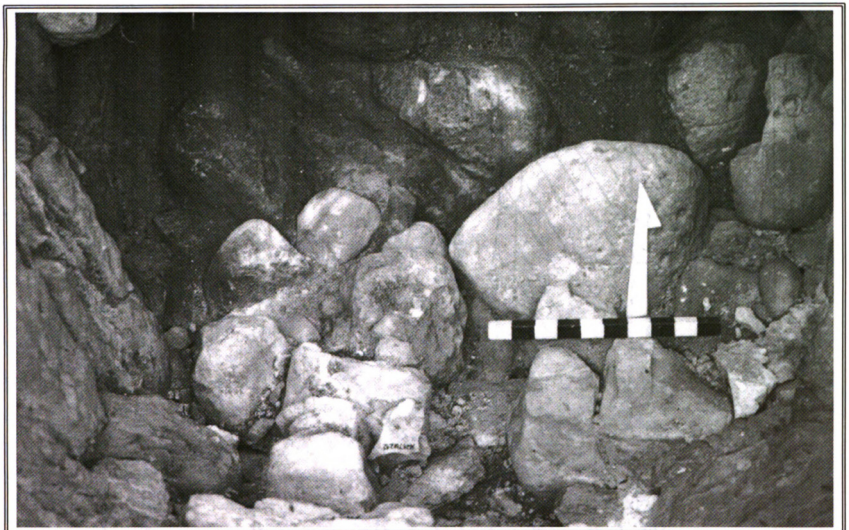


Figure 18: Structure 12 North Hearth Face

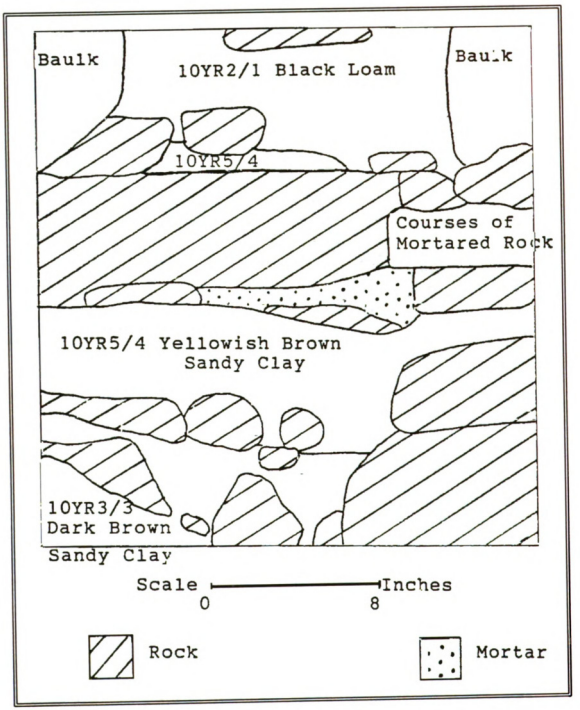


Figure 19: Profile of Structure 12 North Hearth Face

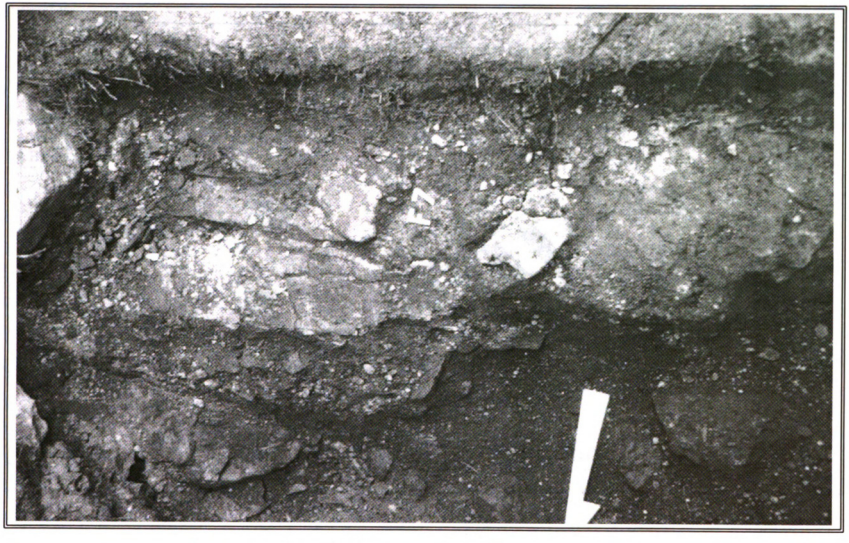


Figure 20: Structure 12 South Hearth Face

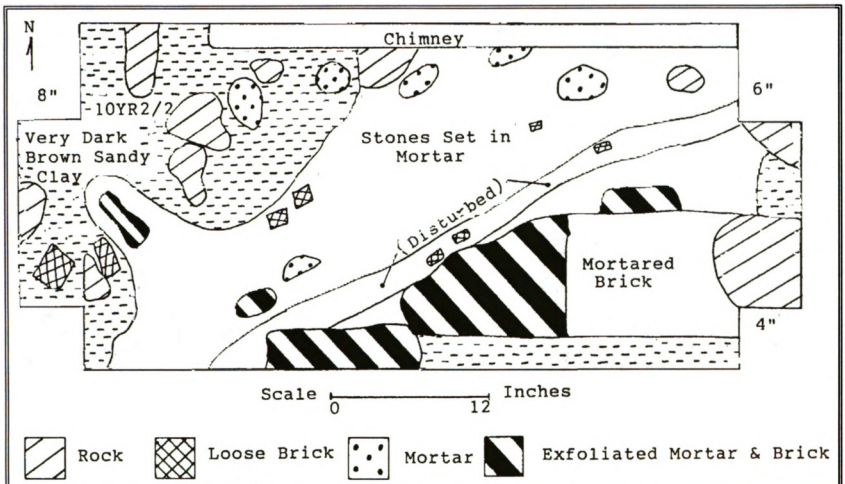


Figure 21: Plan of Structure 12 South Hearth Face

Figure 22: Structure 12 Chimney West Exterior Wall

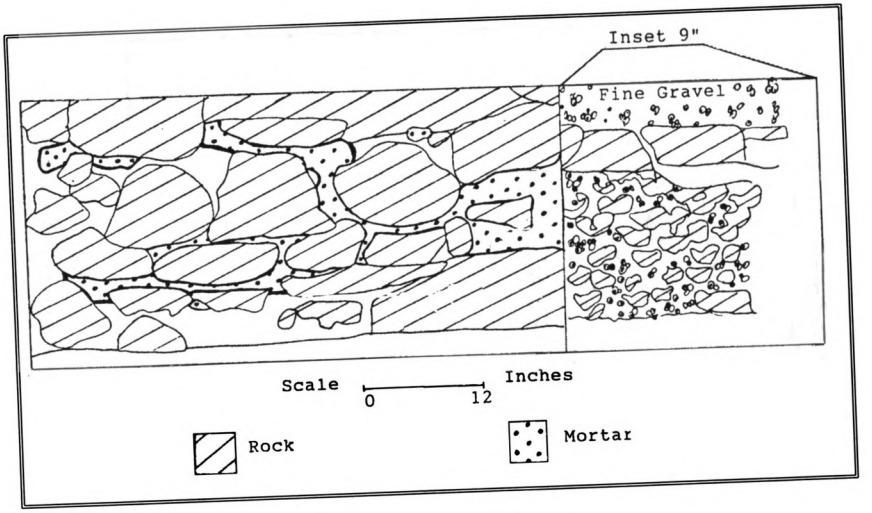


Figure 23: Profile of Structure 12 Chimney West Exterior Wall

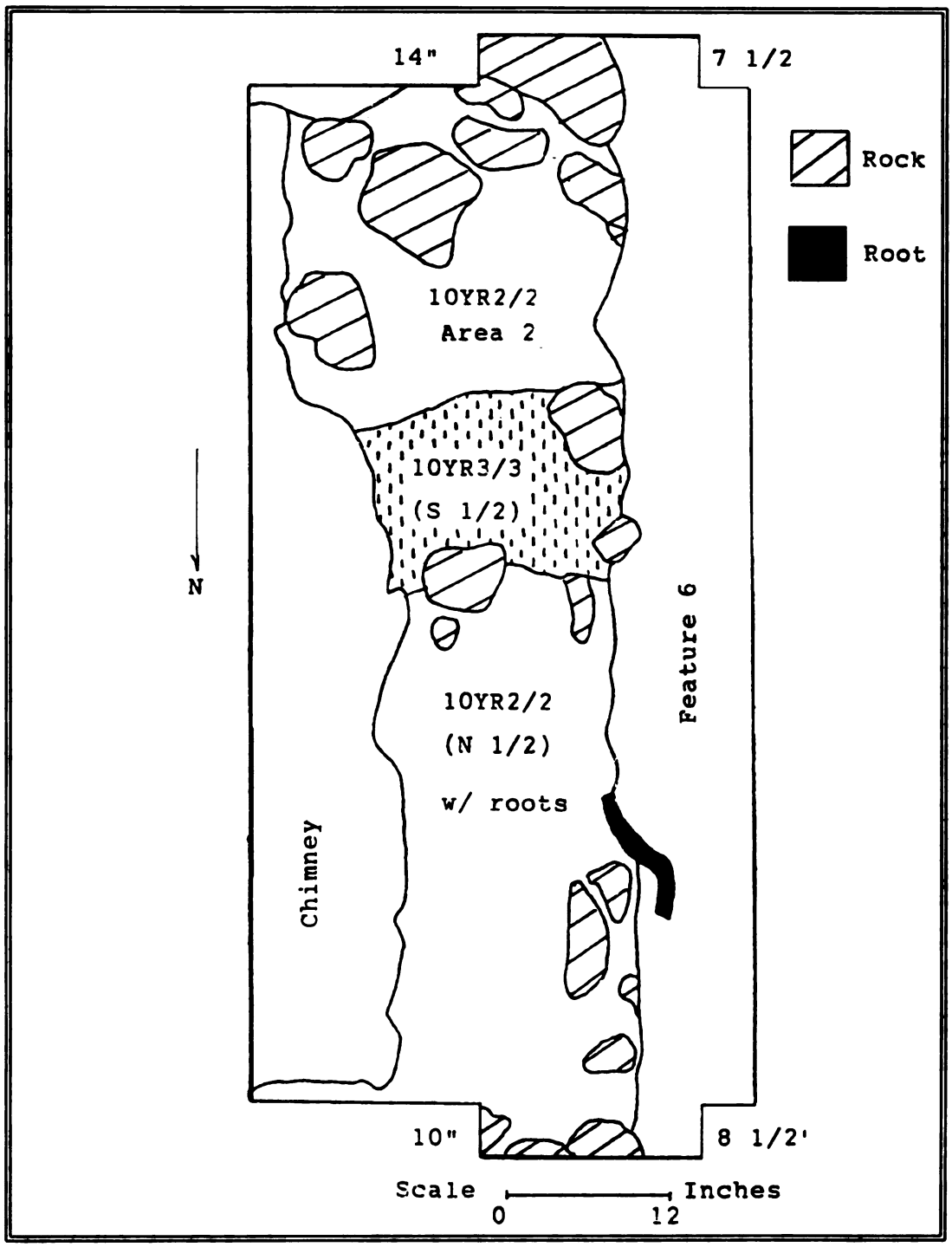


Figure 24: Plan of Structure 12 West Exterior Wall

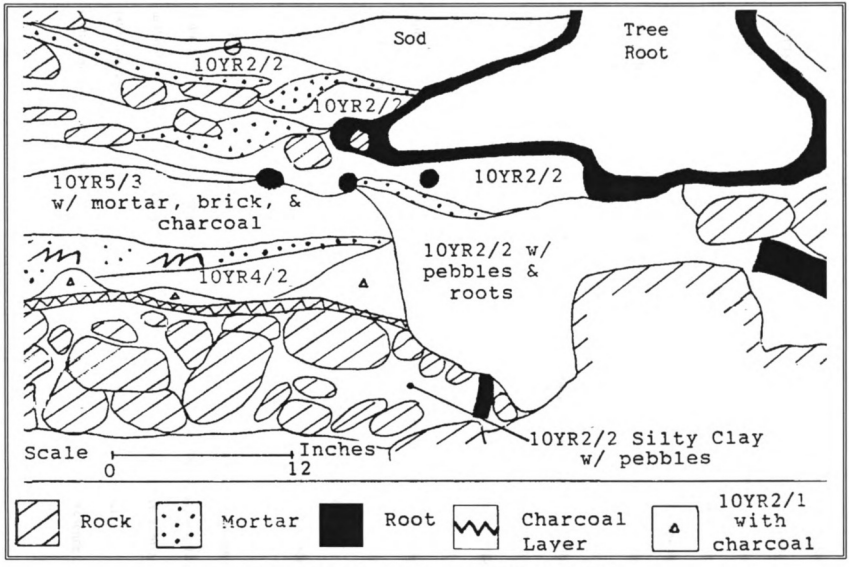


Figure 25: Profile of Structure 12 Ash Pit North Wall

Structure 13

The excavation of this structure was hindered by several disturbances. The original quarry cut stopped several feet short of the structure 13 chimney so as to preserve it. It is not known whether the chimney was constructed near the center of the building, or into the west wall. In any event, subsequent erosion of the quarry bank has eliminated an addition portion of the remains. A number of years ago, the chimney began listing and it was braced with a wooden beam. In 1991, an attempt to dismantle the chimney failed and it toppled over. This created a great deal of debris on the interior surface of the structure. There is also evidence of other modern disturbances within the interior of the building.

Test units were excavated to locate the northeastern and southeastern corners of the structures. Northern and southern wall surface remains appeared as lines of stones intentionally placed and running east-west. Units 11, and 12 were situated in the extant southeastern corner of structure 13, while test units 13, 14, and 17 were located on the northeastern corner of the structure. These units were excavated to obtain data on construction techniques for this structure and would serve as comparative data for other structures.

Feature 3, located in test units 5 and 6, represented a builder's trench for the southern wall of structure 13. This feature extended through the southern portion of test unit 11 and the northern portion of test unit 12. The trench had a high relative density of historic period refuse. This trench was just over 2 feet in depth from surface and hence, comparable in depth to the builder's trench for structure 12 (feature 8). The presence of

this trench and the lack of any other visible surface remains east of this point suggest for this location was the southeast corner.

Units 14 and 17 were placed to the south and north of the northern wall respectively. These units would have represented the interior and exterior areas of the building. Unit 13 was placed east of the remains on what would have been the exterior of the eastern wall. No builder's trenches were discovered for the northern or eastern walls. Hence, the designation of the northeastern corner relies on visual inspection only. However, unit 13 confirmed that there were no subterranean eastern wall remains further to the east. Similar to the north wall of structure 12, it would seem that extant surface remains, served as the footings for the north wall of structure 13. Large, naturally occurring stones were incorporated into the foundation of both structures 12 and 13. The southern ends of both structures are lower in elevation than their northern ends by several feet. Additional shoring in the southern walls was needed to compensate for the elevation difference.

If the northern and southern wall surface remains accurately represented these walls, then the north-south dimension of the building would have been approximately 80 feet. This north-south measurement would correspond with three buildings in the Portlock report of 1820. There were two barracks measuring 80 feet by 20 feet, and a commissariat provision store formerly owned by the Northwest Company, measuring 81.5 feet by 27 feet, 9 inches (Portlock 1820). Yet, according to the 1819 sketch map, all three buildings were situated along the shoreline.

It is difficult to imagine a structure of this size remaining undocumented on post sketch maps. It is equally difficult to imagine that a structure of this size would have been built after the 1823 sketch map was drafted, as post officials already knew

Drummond Island would be turned over to the U.S. The overall measurements of this structure remain uncertain, as there is simply not enough archaeological evidence to confirm its size.

The small sample is certainly prone to sampling error, making it difficult to assess a function(s). Further, the large deposits in the southern wall builder's trench may not have originated with the initial occupation of this structure. If this building was indeed a store of some kind, the small sample size could mask the potential for a relatively small assemblage which would be consistent with such structures. However, since structures of a similar size were used as barracks and stores, it is likely this structure served similar functions.

Figure 26: Structure 13 Chimney East and West Faces

Figure 27: Structure 13 South Wall Builder's Trench

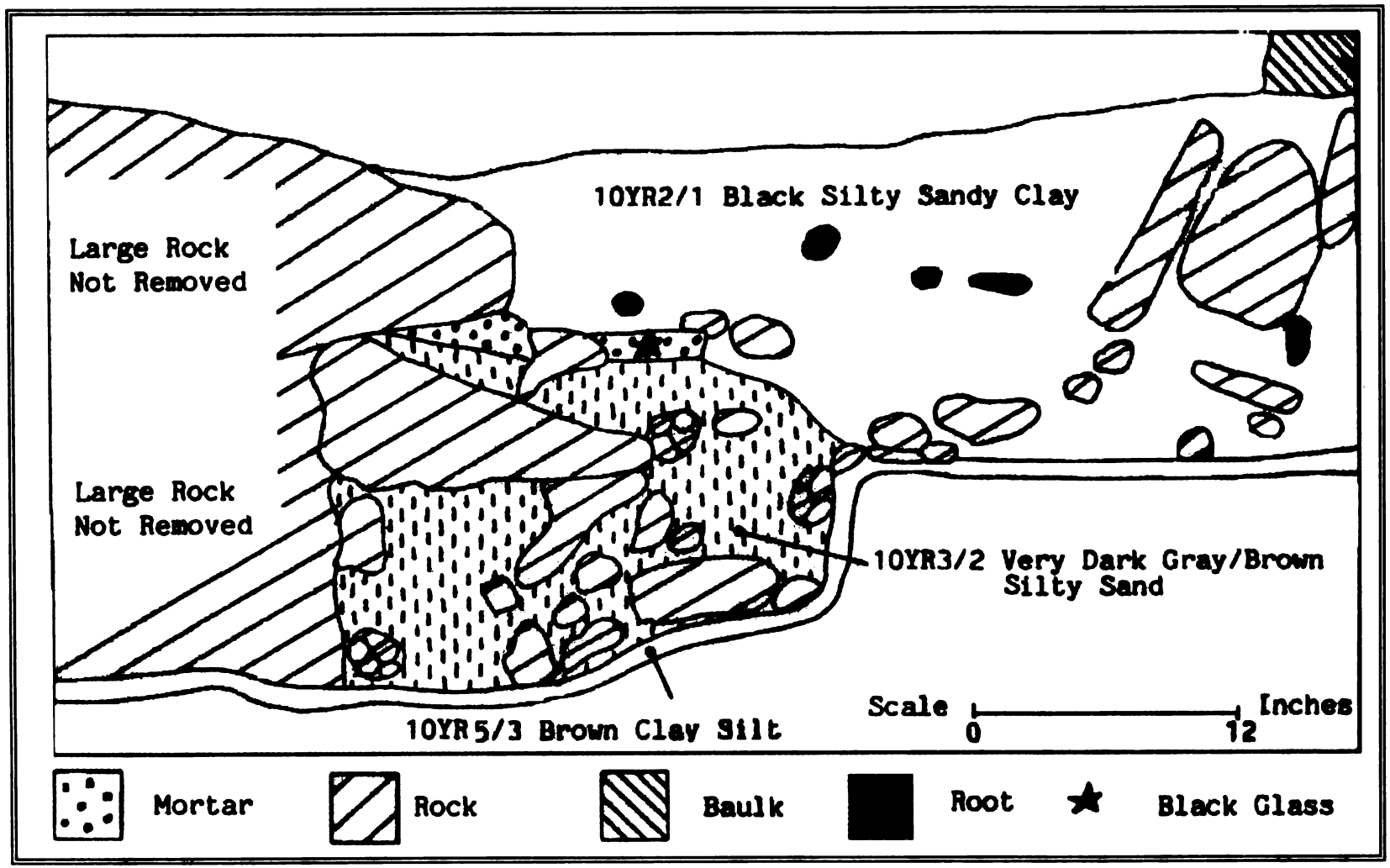


Figure 28: Profile of Structure 13 South Wall Builder's Trench West Face

Structure 16

This structure was occupied as a quarter and likely also served as a storage facility. Structure 16 surface remains consisted of chimney fall immediately west of the road grade for Humms Road. In 1994, it was not known whether a portion of the building might have been covered over by Humms Road. A line of stones running east-west present on the surface indicated a possible north wall footing. Unfortunately, time constraints in the 1994 field season allowed for only two units to be placed in the vicinity of structure 16. Test unit 43 was placed in order to intercept possible north wall remains and test unit 46 was placed to provide an interior sample. No structural features were uncovered in these units. The units produced a modest density of materials with a high relative frequency of ceramics. However, this initial pattern could have been a result of sampling error. Additional units would have to be excavated in order determine the function(s) of this structure and the identity of its occupants.

In 1995, additional units were placed to determine the dimensions of the building and provide an additional interior samples. Excavation revealed footings for all four walls indicating the building measured 30 feet north-south by 50 feet east-west. The hearth was located in the east wall in unit 101. Several planks that measured 18 inches long by 18 inches wide running east-west butted up against the stone hearth. The planks butted up against a beam 9 inches wide running north south. A thick area of mortar was placed immediately west of the beam to fix it in place. Another east-west plank fragment was recovered in the southwest corner of unit 101 suggesting that at least the hearth had a wood floor. No flooring remnants were recovered from any other portion of the structure.

Since the hearth was located in the eastern wall, the western portion of the structure may have functioned as a storage area without a wood floor and not requiring much heat.

In the western portion of the building, the stone footing for the west wall was clearly visible in test unit 81. Units 84 and 104 were placed to investigate a surface depression possibly representing an interior storage pit. This pit was circular with a surface diameter of approximately 6 feet with walls tapering inwards to a base circumference of approximately 3 feet. The walls were formed by excavating out soil and smaller stones. Hence, large and presumably immovable stones formed the walls and gave the appearance of a stone lining. The high concentration and great variety of materials recovered from unit 84 suggests that it became a refuse pit at some point, perhaps even before the demise of the building. When the Boundary Commission made public its decision to award Drummond Island to the United States in 1822, the British and Canadian residents realized they had to vacate the island in the near future. Hence at some point, buildings were left to decay and interior features such as storage pits may have become convenient areas to dispose of refuse.

Several artifact type distributions for this structure stand out. The ratio of pearlware to creamware was lower than most other structures. Yet, the structure also possessed the second highest level of whiteware of any structure. While creamware was generally an older and less expensive ware during this period, whiteware was new and rather expensive. The structure is well represented in terms of other ceramic ware types and decorative styles. Excavation also uncovered a high frequency of relatively higher status lead glass stem vessels. While the structure returned only one trade-silver clasp, it did

yield 14 glass trade beads. Given the sampling error problem, this is a relatively high frequency of trade goods per square foot of excavation area.

This structure also had high proportions of swine, cattle, and hare among the faunal remains. Further, the specimens of swine and cattle were well balanced in terms of the frequencies of feet, teeth, and cranial fragments. Conversely, this structure also had the smallest proportions of fish and duck. These ratios suggest a consumption pattern with a higher degree of reliance on traditional barrel bulk rations. These rations were suspended in a brine solution and shipped to military posts. Such rations were available to most of the regimental officers, Indian Department, and Commissary Department staff.

The nature of these assemblages and the architectural details indicate an occupation by officers. Further, it is likely that the eastern portion of the structure served as a quarter, while the western portion likely functioned as a storage area.

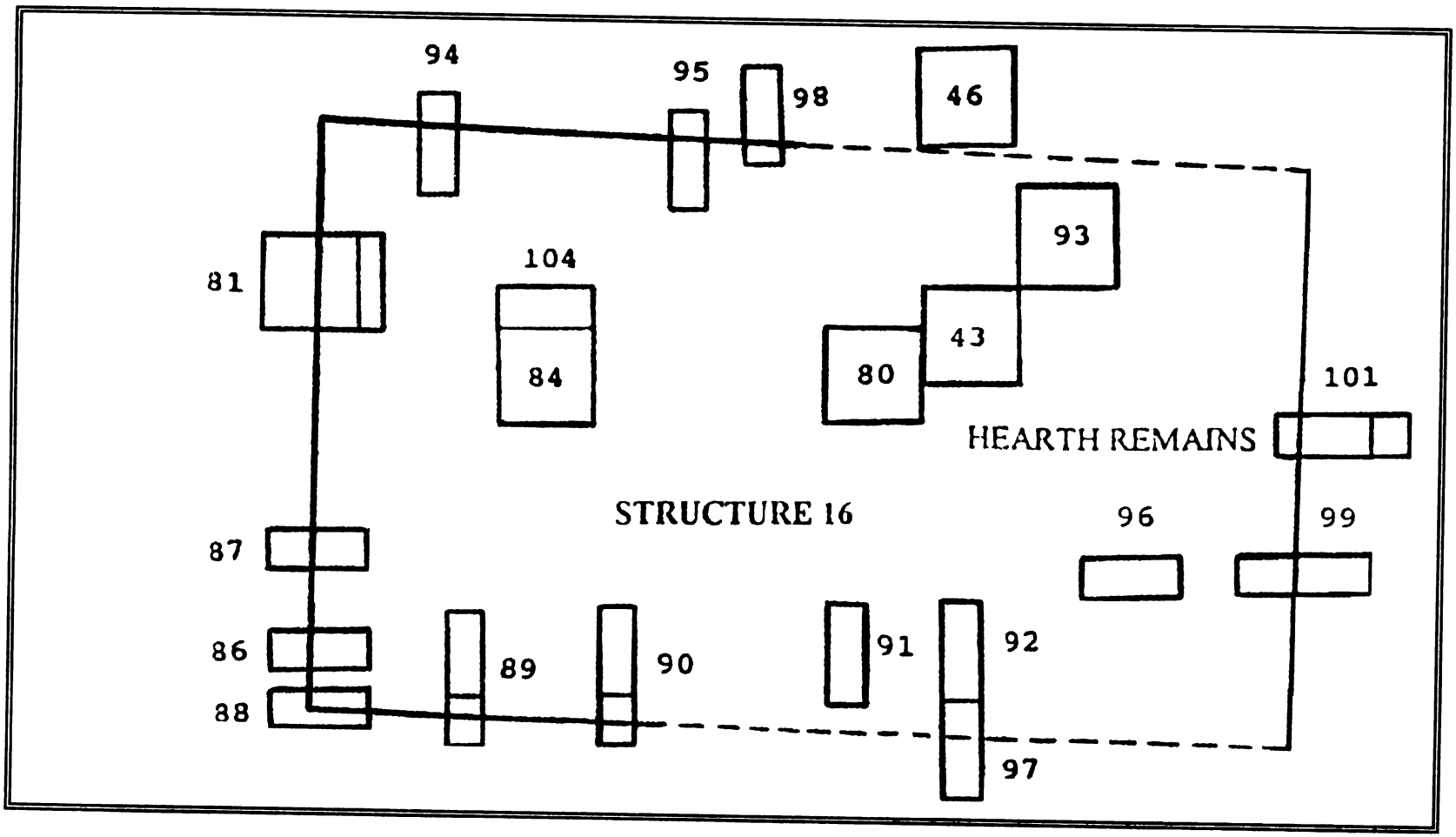


Figure 29: Structure 16 Test Units

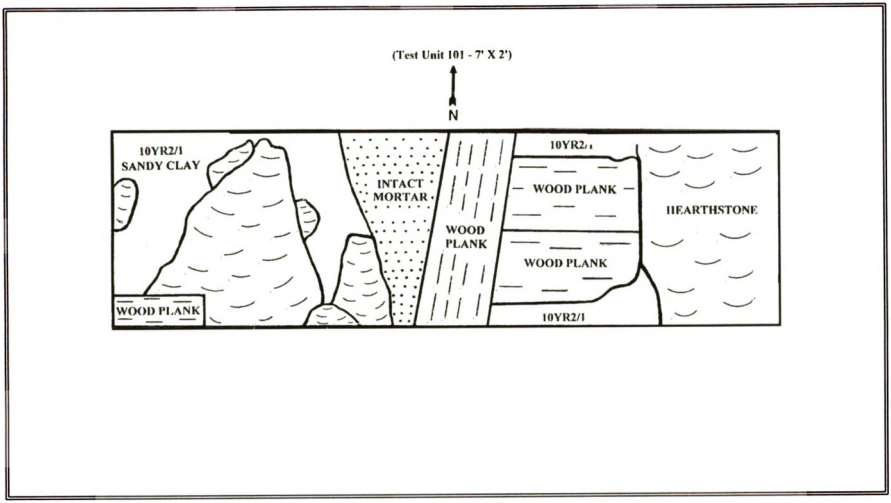


Figure 30: Structure 16 East Wall and Hearth Area

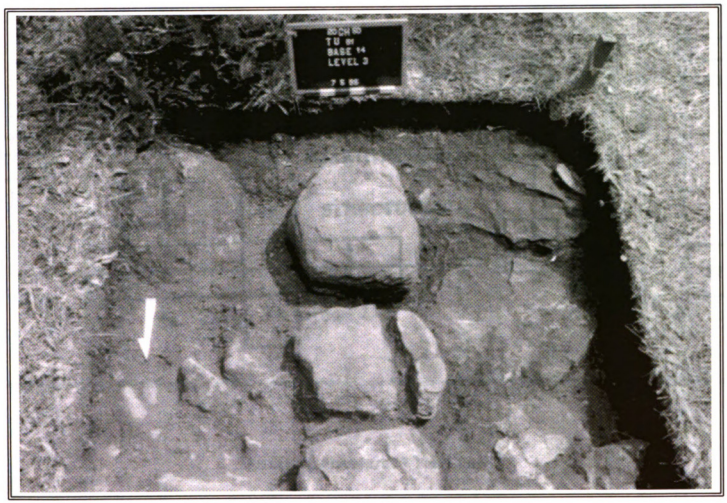


Figure 31 : Structure 16 West Wall Footings

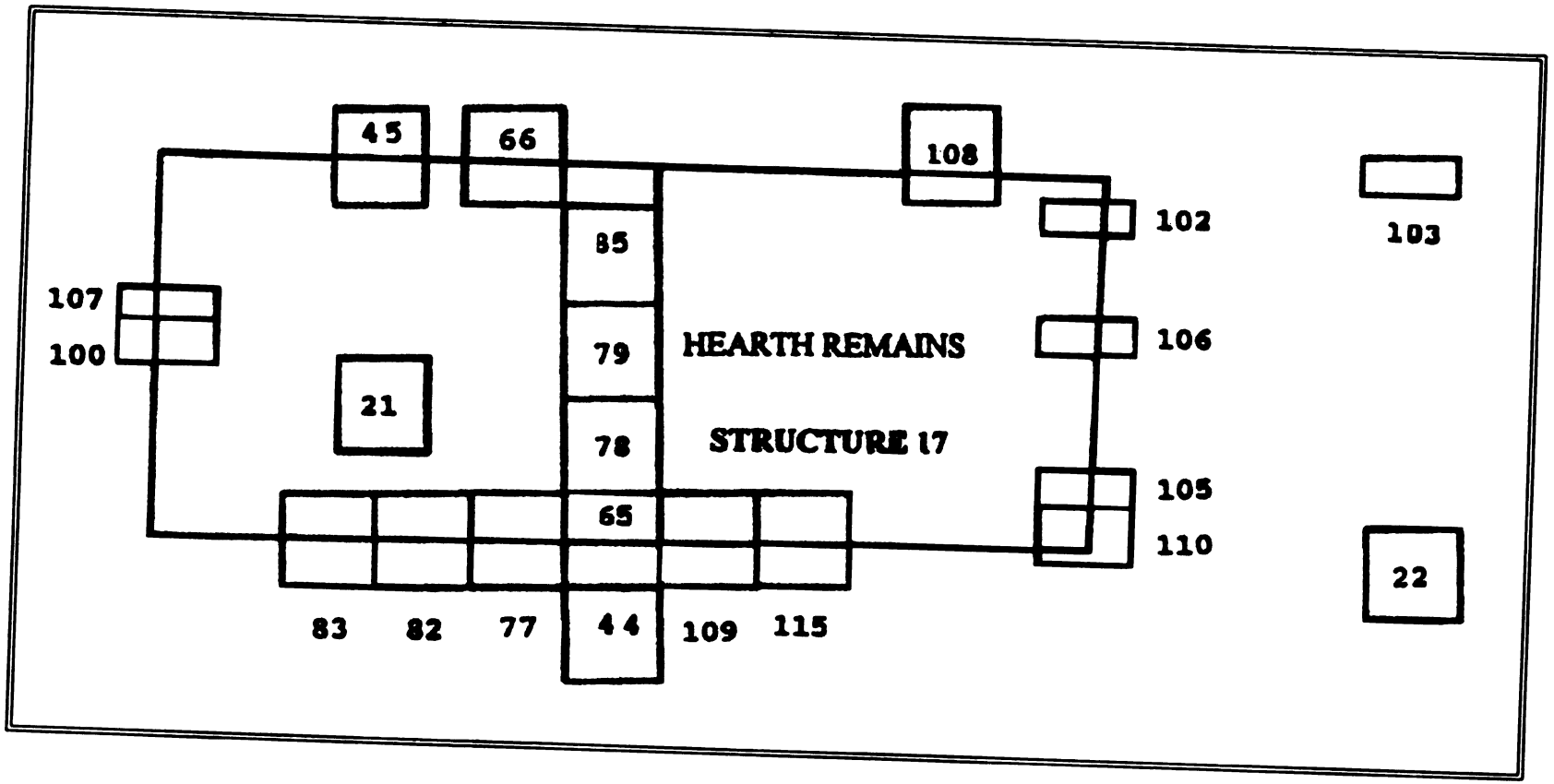


Figure 32: Structure 17 Test Units

Structure 17

The above-ground remains of structure 17 consisted of an oblong mound measuring approximately 30 feet east-west by 10 feet north-south. In 1994, the appearance of this mound suggested it might have been a platform for a hut, yet there were no visible surface remains typically associated with a hut. The absence of chimney remains could have been a result of poor preservation or salvage activities. In 1995, testing of the mound and the surrounding area was required to determine if this structure was a hut or some kind of larger building.

Once again, both the 1816 and 1823 maps referred this structure as one of the "private" buildings between the officers quarters and the town lines. This distinction may have included structures occupied by officers who were given money for lodging. Both Smyth (1825:19) and Delafield (1819: 316-317) referred to officers receiving lodging money and subsequently constructing huts. The major research goal for this structure was to determine the nature of occupancy and possibly the identity of its occupants. Certainly, it is possible that this structure housed several different occupants or served various functions at various times between 1815 and 1828.

Several lines of evidence indeed suggest the possibility of multiple occupancy. The strands of wire lace recovered from this structure indicated tenancy or at least visitation by a military officer. The Royal Regiment of Artillery gaiter button is a further indication of a military presence. Yet, the relatively high frequency of glass trade beads and the presence of trade silver chain links could represent an occupation by fur trade personnel. Lee (1986:89) and Vincent (1978:106-108) both mention that officers, including Indian Department officials, rented or bought houses from fur traders. Fur

traders would have been away from the site for long periods of time and renting could have taken place on a seasonal basis.

Multiple tenancy makes it more difficult to sort out discrete occupations in the archaeological record. The test units excavated during the 1994 field season did not reveal evidence of discrete occupations. However, other middens located in the vicinity of the structure could date specific occupations by one of these groups.

A curious button belonging to the Royal Canadian Volunteers was excavated from test unit 21, located on the southwest exterior corner of the mound. This regiment was raised in 1794, and served at Fort St. Joseph from 24 October 1796 through 31 July 1801, before being disbanded in 1802 (Karklins 1981:137). This militia regiment was composed of French Canadians, Germans who had served in the Revolutionary War, and some British-born subjects (McKay 1977:2). There is no doubt that many of the volunteers had close ties to the fur trade. Hence, this button could be another indication of a fur trade occupation.

The 1995 excavation strategy for structure 17 was to place units strategically to determine the nature and dimensions of the structure, and to provide additional interior sampling. Excavation revealed footings for all four walls indicating these were the remains of a building measured 20 feet north-south by 50 feet east-west. A six-unit east-west test unit block was excavated along an intact portion the southern wall footings to recover data on the methods of construction. A similar north-south block was placed to retrieve construction details for a possible floor and especially, details on hearth and chimney construction.

The south wall, designated as feature 16, was present in units 65, 77, 82, 83, 109, and 115. The footings initially appeared approximately 3 inches below surface. Excavation of the builder's trench showed that the footing extended at least 2 feet below the former ground surface. This mortared stone footing varied in width from approximately 1-1 1/2 feet thick depending on the size of the utilized stones. The eastern portion of this south wall footing was heavily disturbed, and units 109 and 115 contained a high density of burned wood. It would appear that a fire damaged the south-central portion of this structure at some point. A partially burned floorboard fragment, designated as feature 19, was recovered along the south wall area in units 109 and 115. It measured approximately 5 inches in width and 1/2 inch thick. An 1840 journal entry for Bela Hubbard's visit to Drummond Island, as part of the Houghton expedition, could shed light on the burned remains: (Peters 1983: 17)

> The island was in consequence deserted, the building, which a few yrs. ago presented quite an imposing appearance, have since burnt to the ground, the cedar fences have been cut off for fire wood...the ravage of decay which a few short years may produce.

The 1995 north-south excavation block ran off of test unit 44, which was excavated in 1994, extending north through the hearth area to the northern wall footings. Feature 17 was a support beam or joist that measured 9 inches wide by 3 inches thick. It was set into the south was mortar and ran north through unit 78, and into unit 79 where it ended near the northwest corner of the hearth. The gradual taper on the end of the beam suggested its terminus was a result of breakage or poor preservation, rather than a saw cut. Hence, it could have continued on further north to skirt the hearth. Several protruding flooring nails were present in this beam indicating that floorboards had been nailed to it.

The chimney and hearth area discovered in units 79 and 85, was designated feature 21. Excavation of these units initially exposed the 6 feet long eastern face of the hearth that was littered with debris such as mortar and other structural materials. Several upturned flat hearthstones suggested the hearth area had been disturbed, possibly during the demise of the building. The eastern profile of these units indicated the fireplace was constructed with a cobble base using minimal amount of mortar. This technique was similar to the structure 13 hearth and chimney base although on a smaller scale. The large amount of chimney fall and time constraints made it impossible to uncover and excavate the entire chimney base. However, partial clearing indicated revealed that several large beams within the rubble. These beams were most likely structural supports or roof beams that collapsed when the chimney toppled. A square post mold for one such vertical support beam was discovered butting up against the interior of northern wall of the structure.

Structure 17 yielded both the highest density and the greatest variety of materials for any excavated structure. Every recovered ceramic type at Fort Drummond was represented in the structure 17 assemblage, which accounted for approximately 28% of the total ceramic assemblage. Notably, the presence of green transfer-printed whiteware indicates a terminal 1820's occupation. Jouppien has argued that the introduction date for this decorative style was 1828; the year the fort was abandoned. Further, several machine-cut nails, with an introductory date of the late 1820's, were also discovered in structure 17. A total of 106 glass trade beads and 17 pieces of trade silver were also recovered from this structure. These items argue for at least a temporary occupation by fur traders or Indian Department officials.

This structure also contained the greatest number of faunal remains, and the largest amount of species represented for the entire site. Contrary to structure 16, this structural assemblage had a high proportion of wild species such as hare, ducks, and passenger pigeon, and a moderate level of fish remains. Conversely, it also had the lowest proportion of cattle, swine, and sheep and goat. These frequencies prompted Martin (Appendix 3) to suggest that this pattern reflected either a civilian occupation, or military officers who hunted or received game in kind on a regular basis.

The variety of the military assemblage presents some interesting questions regarding the occupation history of this building. The Royal Canadian Volunteers button excavated from test unit 21 represents a militia regiment that served on nearby St. Joseph Island before being disbanded in 1802; 13 years before Fort Drummond was established. The British Army "Belgique" shako plate and buttons of the Commissariat Department and Royal Regiment of Artillery attest to a British Army presence. Yet, the U.S. Artillery and U.S. Infantry buttons present some interesting possibilities.

There do not seem to be any references in the documentary record for U.S. forces occupying the installation after the British evacuation. Indeed, only one U.S. officer was sent to accept the public buildings upon the evacuation, and a local resident was to be appointed as the caretaker (McCabe 1828). However, there are sporadic references to the island in the 1830's, and at least one council held on the island on September 21, 1831 (Schoolcraft 1831). The best documentation of the U.S. presence on the island is in connection with the staff of the Boundary Commission. The accounts of commissioners Major Joseph Delafield and Thomas L. McKenney mention U.S. military staff visiting Drummond Island as part of the commission's duties. While it is impossible to determine

the exact origin of these U.S. military buttons, these documented Boundary Commission visits are a likely source.

The density and tremendous variety of materials in this structure point to multiple occupations by both military and fur trade interests. Unfortunately, no discreet occupations were discernible in the archaeological record. The details and quality of the construction and the nature of the assemblage suggest this building was a quarter and store. The size, double chimney, and density of assemblages would indicate the potential for multiple occupants.

Figure 33: Structure 17 South Wall Footings

Figure 34: Structure 17 Floor Joist

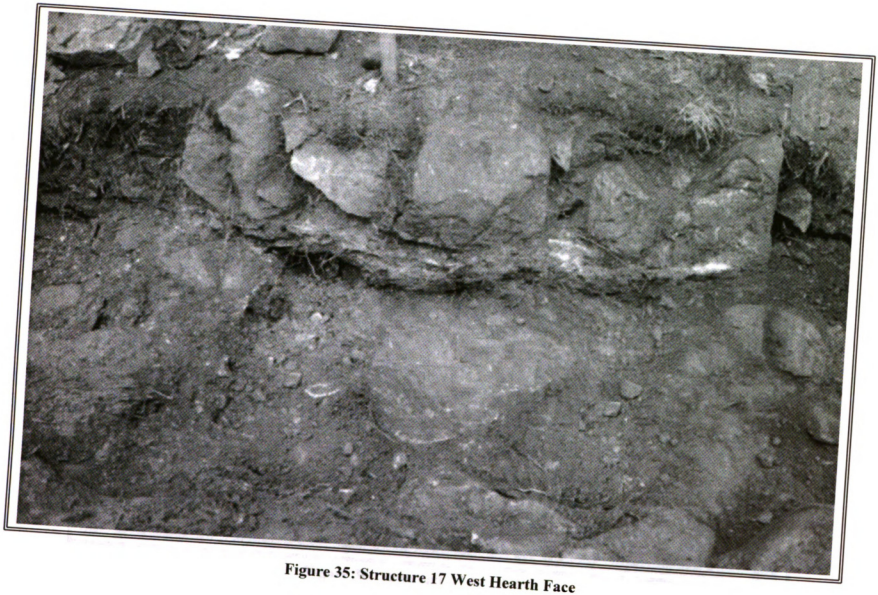


Figure 35: Structure 17 West Hearth Face

Figure 36: Structure 17 North Wall

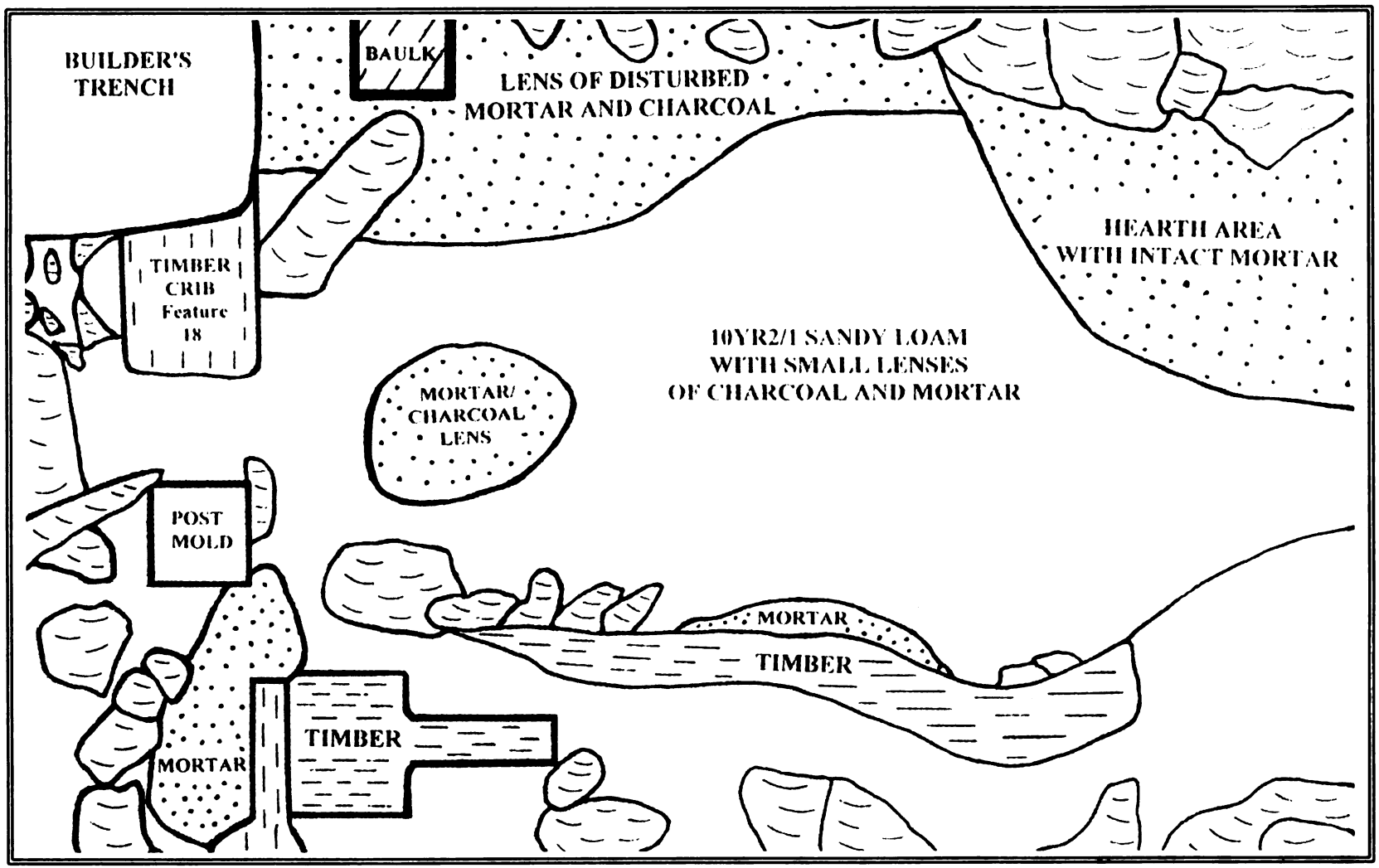


Figure 37: Structure 17 North Wall and Hearth (T.U. 85 - 7' X 5')

Structure 19

Structure 19 measured approximately 30 feet north-south by 25 feet east-west. It proved to be difficult to delineate due to the paucity of visible structural remains on the surface. While there was no evidence of chimney fall, several artifact scatters and small surface undulations provided a starting point for excavation. The northern wall of this structure was uncovered in test unit 70. Substantial remnants of the east wall footings appeared in test unit 72. The southwest corner of the structure was unearthed in test unit 68. The south wall line proved to be more elusive, even though fragments of mortar were located in test unit 68 and its extension.

In terms of the material assemblage, it is difficult to compare the structure 19 assemblage because of the relatively small volume excavated of area. Despite sampling error, the overall assemblage was not markedly different from the relative frequencies recovered from the other structures. The faunal assemblage was also somewhat enigmatic. It yielded the highest proportion of sheep/goat specimens, and contained a high level of cattle remains. Yet, the level of swine specimens was relatively low. This structure also had the highest relative proportion of chicken bones. Mammals such as black bear and horse were also present. Yet, while fish and duck were present in moderate frequencies, hare were virtually absent from the assemblage.

The proximity of this structure to several other structural features is worthy of note here. The well, designated as structure 18, was located only 15 feet east of the northeast corner of structure 19, while structure 20 was only 15 feet to the south. In addition, pits 4, 5, and 6 also were situated in fairly close proximity to the structure. Despite its

relatively small size, the central location in relation to other structural features is curious. The centrality would suggest either a very early or very late placement in the structural evolution of this area. The relative uniformity of the assemblage in relation to the other structures argues against any structural specificity to set it apart. Hence, it would seem that the nature of the structure was domestic with limited storage capacity. The lack of chimney remains is puzzling. Yet, a small chimney in this structure may not have preserved as well or could have been salvaged for one of the larger structures.

Pit 4

While pit 4 cannot be directly associated with structure 19, it will be discussed here. The pit appeared as a surface depression approximately 20 feet east from the northeast corner of structure 19. The pit measured approximately 5 feet in diameter while the walls sloped inward slightly to a depth of 32 inches below ground level. Excavation was required to determine the nature of this depression. The varied artifact assemblage included assorted building hardware fragments, as well as 2 cannon balls and several lead glass "whiskey" tumblers. During the excavation, several pockets of seeds were encountered so a float sample was taken. However, the floral counts were too low to determine conclusively that this pit was a privy. The relative shallowness of this pit, compared to the other privies, further suggested this pit might not have functioned as a privy. The building hardware including latches, strapping, pane glass, and nail fragments would indicate that pit 4 functioned as a refuse pit.

Pit 6

While pit 6 cannot be directly associated with structure 19, it will be discussed here. The southern edge of the pit was approximately 11 feet north of structure and measured nearly 10 feet in diameter. The pit appeared as a large circular depression on the ground surface. An 8 square feet grid was set down and the pit was divided into quadrants for excavation. The southwest quadrant was not excavated to allow for a soil sample. Unfortunately, the sample was deemed too badly contaminated with modern refuse. Indeed, there was a great deal of mixing and intrusion within this pit. It would seem that the pit had been potted for artifacts, and also used as a modern refuse pit. The pit was excavated to approximately 40 inches below surface where sterile clay was uncovered. The artifact assemblage was large and varied in nature. The pit yielded high frequencies of pearlware, whiteware, and coarse earthenware. Unfortunately, very few vessel forms could be identified beyond the level of hollowware versus flatware. Lead glass stemmed drinking vessel sherds were also present in a relatively high frequency. Conversely, relatively few nails were recovered. The level of disturbance and lack of clear structural association make interpretation difficult. The high density and diversity of materials suggests this pit serviced several structures as a community refuse pit.

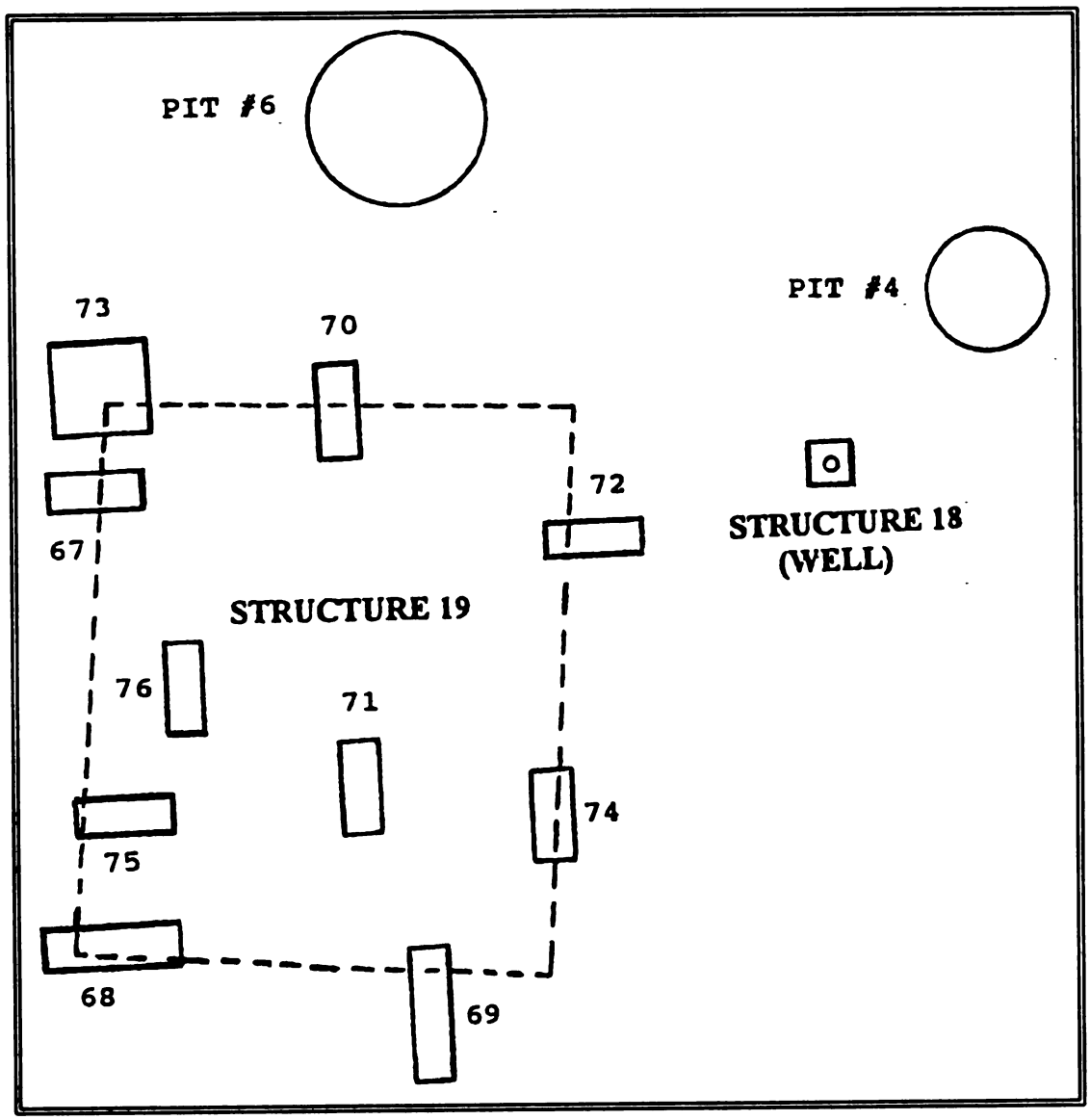
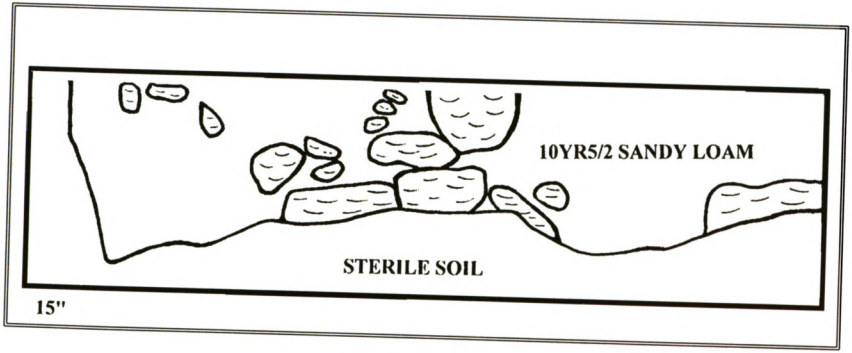


Figure 38: Structure 19 Test Units and Pits

Figure 39: Structure 19 North Wall



Test Unit 70 - East Wall

Figure 40: Structure 19 North Wall Profile

Figure 41: Structure 19 East Wall

Figure 42: Pit 4 Base

Structure 20

The remains of structure 20 were in an excellent state of preservation. The outline of the four walls was easily traceable as a low rectangular berm on the surface. The structure measured 30 feet north-south by 50 feet east-west. It represented one of the "private" buildings on site maps. Hence, it would not have appeared on the inventories of government buildings. Its size would suggest that it could have been a quarter or a store, or a combination of both.

In 1994, excavations of the interior northeast corner of structure 20 revealed the remains of a log floorboard that ran north-south. A substantial amount of material was excavated from the units associated with this structure. In fact, unit 42 excavated on the southwest exterior corner of structure 20, yielded one of the highest densities of artifacts for the entire site. The amount of ceramic and glass vessels recovered seemed high for an occupation associated solely with a storehouse. Although sampling error or shared middens between structures might figure into this discrepancy. In 1995, further sampling was required to more clearly define the function(s) of this building. Unfortunately, several very large fallen oak trees hindered excavation of the southeastern corner of the structure. Permission to remove the trees could not be obtained due to issues of safety and potential liability. Similarly, a very large amount of chimney fall hindered excavation of the western portion of the structure.

The excavation of the north wall provided a great deal of information on structural techniques. Once again, the stone footings were apparently dry-laid and approximately 2 feet wide. The large floor beams were set into the footings and appear to have been mortared into place. On the interior edge of the beam, an orange-colored clayey mortar

was used to anchor the beams to the footings. This mortar was also pooled in the interior of the structure to help set the beams. This type of mortar was also present in a similar structural context in structure 17 along the floor beams. The application of this type of mortar seems to have been confined to the interior of structures.

The chimney base and hearth were discovered in units 111 and 119. The eastern face of the hearth measured approximately 6 feet while the dry laid base extended down approximately 2 feet. A pool of orange clayey mortar was laid immediately in front of the hearth. The roughly central placement of the fireplace suggests that it was double-sided. The fall pattern indicated the chimney collapsed to the west.

With only a few exceptions, the structure 20 assemblage did not differ significantly relative to the other private structures. While the structure yielded only 2 sherds of whiteware, every vessel form except plates was recovered. Certainly, some of the sherds identifiable only as general flatware sherds could represent plates. The glass assemblage shows a high level of lead glass stem drinking vessels and a total of 43 glass beads. The high density and patterns for faunal remains was similar to Structure 17. A large variety of species was represented, and the proportion of specimens was moderate in almost every category.

The details and quality of the construction and the nature of the assemblage suggest this building was a quarter, while the assemblage of trade goods suggests a fur trade or related occupation. The size and double chimney in this structure, and density of artifacts would indicate multiple occupants. The two privies associated with the structure, which will be discussed below, strengthen the probability for multiple occupancy.

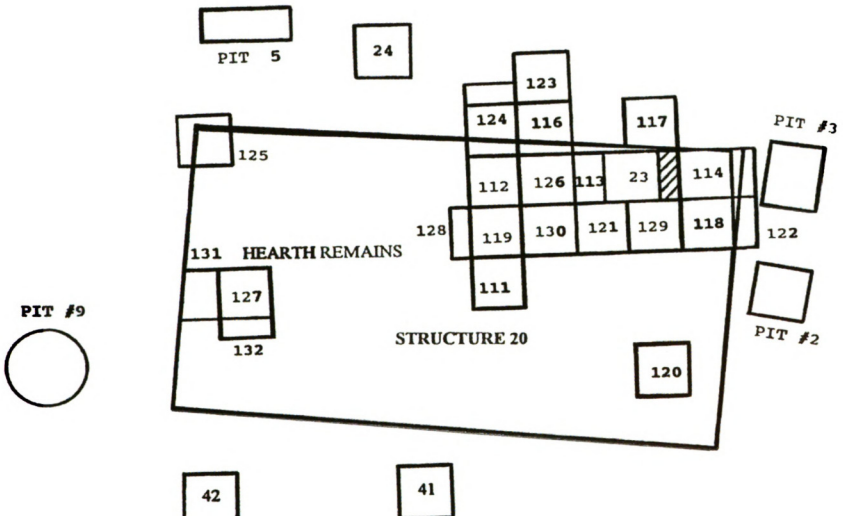


Figure 43: Structure 20 and Pits

Figure 44: Structure 20 Floorboards

Figure 45: Structure 20 North Wall

Figure 46: Structure 20 East Wall

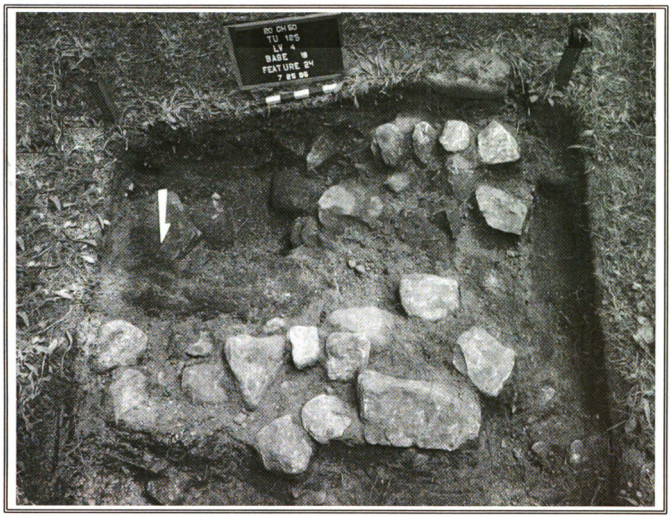


Figure 47: Structure 20 Northwest Corner

Figure 48: Structure 20 Hearth Face

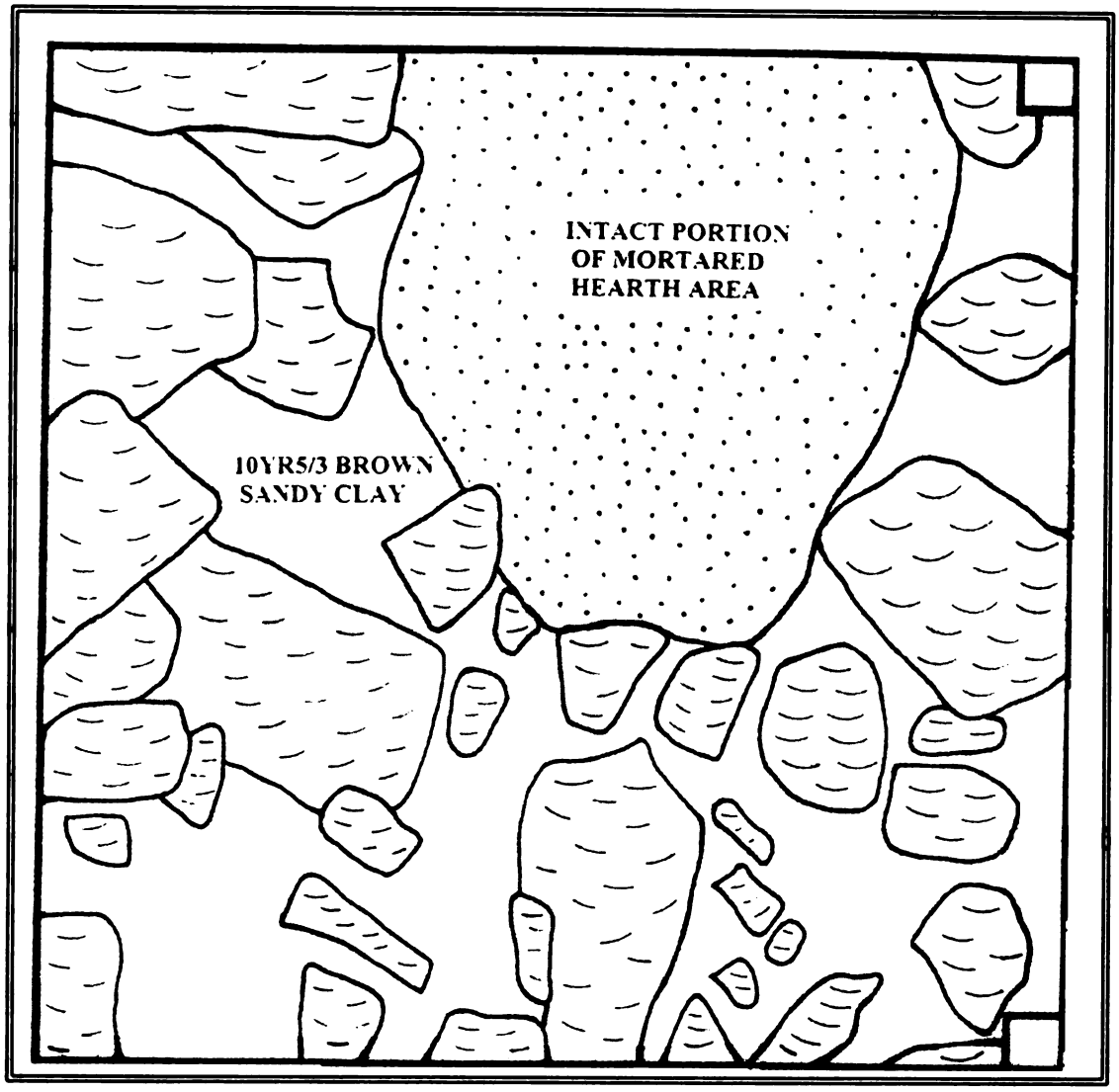


Figure 49: Test Unit 119 Plan (5' X 5')

Pit 2

Pit 2 was located approximately half way along the exterior of the eastern wall of structure 20. The base of the privy shaft measured approximately 4 1/2 square feet and extended down below the water table at approximately 52 inches below the modern surface. Several planks were located at this level, but excavators could not determine conclusively whether the planks were actually in situ. The upper 1-1 1/2 feet of the pit seemed to be the product of erosion and tree fall with a mixture of modern materials. These materials were cleared and a 5 square feet test unit was excavated. The east wall profile showed a stratified deposit with a rich organic layer over layers of lime/mortar, charcoal, and seeds. These lenses would have been applied periodically to control odor and aid in decomposition. The analysis of a float sample from this unit concluded that the pit was indeed a privy based on the density of recovered flora and the large variety of taxa.

Pit 3

Pit 3 was located on the exterior northeast corner of structure 20, and approximately 6 feet north of pit 2. The overburden in the upper 1-1 1/2 feet of the pit seemed to be the product of erosion and tree fall with a mixture of modern materials. Originally, it appeared that the pit measured 6 feet north-south by 5 feet east-west. However, further excavation revealed a dimension of 5 feet north-south by 4 feet east-west. The pit extended down approximately 36 inches below the surface before the water table was encountered. Modern materials recovered from the unit indicated intrusions into the pit. Yet, in the lower levels, lenses of lime/mortar were undisturbed. The analysis of a float sample from this unit demonstrated the pit was used as a privy based on the density of

recovered flora and the large variety of taxa. While the artifact assemblage from this pit was quite small, it yielded a high percentage of lead glass panel bottle fragments. These vessels usually contained some form of medicinal extract often with a high percentage of alcohol. A complete beer bottle was recovered from the base of the unit. In the Canadas, spruce beer was issued to counteract the effects of scurvy brought on by reliance on salt preserved foodstuffs during the winter (Jones and Smith 1985: 86).

The relationship between pit 2 and pit 3 is not well understood. While both functioned as privies, it is not known whether they were used contemporaneously or if one superseded the other.

Pit 5

Pit 5 was an intact surface feature located between structure 19 and structure 20. It was a stone-lined rectangular pit measuring approximately 8 feet east-west by 3 feet north-south. The dry laid stone lining and paucity of artifacts strongly suggest a storage function. It is difficult to attribute this pit to either structure 19 or structure 20, as this pit was roughly equidistant between the two structures. However, given the size and multiple occupancy of structure 20, it is more likely that this exposed pit would serve the larger structure.

Pit 9

Another surface depression, designated as pit 9, was detected on the ground surface approximately 12 feet west of the southwest corner of structure 20. This circular pit measured slightly less than 8 feet in diameter and it was excavated to sterile soil at a depth of 32 inches below ground level. The lack of clear wall definition, absence of rich organic soil, and relatively shallow depth indicated that this pit was not a privy. However, the relatively large and varied artifact assemblage suggests this area was used as a refuse pit.

A large clay pipe concentration recovered from the pit presents some interesting possibilities for further material culture research. This cache was composed of a minimum of 127 clay pipes based on a count of unique pipe bowls. A total of 1,054 stems were also recovered from this cache. The mostly likely explanation would be that a box or boxes of pipes, perhaps a gross or 144 pipes, arrived damaged and were subsequently discarded in the pit. There is an interesting reference in an 1823 Board of Survey report for the Indian stores on Drummond Island, which recorded 1,641 unserviceable pipes (Clarke et al 1823:151). Given the fragility of ball clay pipes, it is not surprising that many specimens arrived damaged.

Figure 50: Pit 2 East Face

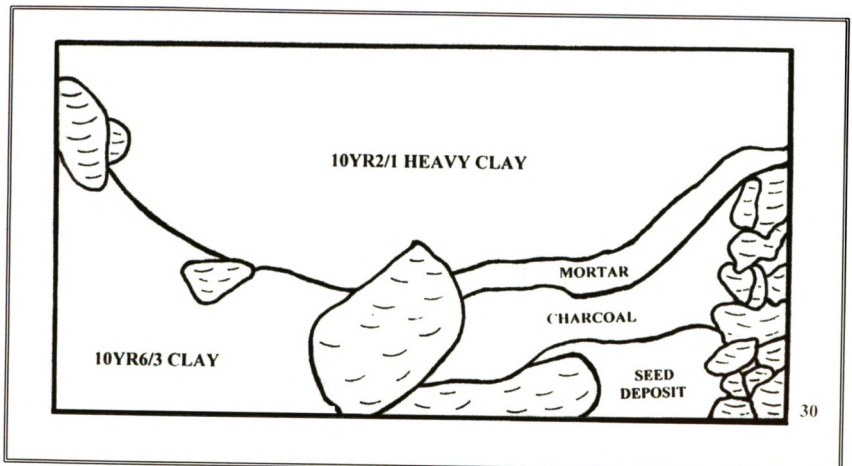


Figure 51: Pit 2 East Wall Profile

Figure 52: Pit 9

Figure 53: Pit 9 Clay Pipe Concentration

Structures 21A and 21B

In 1994, the excavation of structure 21 revealed two separate buildings. The northern structure was designated as 21A while the southern structure was designated as 21B. Both structures measured approximately 38 square feet. The close proximity, similarity in size, and west wall chimneys suggested similar or at least complimentary functions.

These findings raised several questions regarding the functions and orientation of these structures. Based on cartographic evidence, the remains seem to have represented the building(s) located at the southwest corner of the "L-shaped" private building area on the 1819 sketch map. This structure was labeled "quarter formerly occupied as an Engineer Quarter but now used as a Mess-room; the kitchen and house both require considerable repairs (1819 map). The reference to a house and kitchen could refer to either a single structure or perhaps two attached structures. The 1820 Portlock report ascribed a dimension of 30 feet by 20 feet to it, and noted the structure "consists of three rooms adjoining is a kitchen. (Portlock 1820:39-40). Testing was needed to determine whether structures 21A and/or 21B represented the messhouse and kitchen. Unfortunately, the sketch maps showed the quarters as only one structure.

In 1994, A block of six units was situated to obtain contiguous data from the interior of structure 21A, through the approximately 6 to 7 feet gap between buildings, and continuing through the interior of structure 21B. The sub-surface footings for the southern wall of structure 21A were discovered in test unit 30. There was a clear break in the presence of large stone footings at the southern end of test unit 30. The pattern of stone debris in units 30 and 31 suggests that the southern footings of structure 21A were raised to level off the higher northern end. Similarly, architectural compensation for the

lower southern end of the building occurred in structures 12 and 13. Unit 27 was placed on the southwestern exterior corner of structure 21A to confirm the southern limit of wall remains. No in situ structural footings were present in this unit, and a high density of material culture was recovered. Similarly, unit 26 was situated between the structures, but did not did not yield any footings. Test units 25 and 28 were placed in the north central area of structure 21A in the vicinity of the chimney to obtain an interior sample. Test unit 29 was situated on the outside of the northern exterior wall to intersect possible traffic/refuse areas from buildings to the north and west.

Partial footings for the northern wall of structure 21B were encountered on the border of units 26 and 32. Units 36 and 40 were excavated immediately west of units 26 and 32, to confirm the presence of these east-west footings. A similar pattern of large stone footings was noted for the border between units 36 and 40. When compared to the footings of the other structures, it would appear these footings were disturbed. The hearth located in the west wall completed the structural outline in this area. The raised footings for the south wall were still intact. However, while the eastern wall proved more elusive, its position was extrapolated from the position of the other three walls.

Certainly, there is a discrepancy between the size of structures reported in the military records and the archaeological remains. The Portlock Report of 1820 inventoried a 30 feet by 20 feet messhouse consisting of three rooms adjoining a kitchen. It is difficult to imagine a kitchen and messhouse together in the space of 30 feet by 20 feet. In fact, archaeological findings from Fort St. Joseph documented stone foundations of 37.5 feet by 20 feet for a kitchen alone, constructed around 1800 (Vincent 1978:18-19). The Durnford Report of 1823 recorded a 32 feet by 28 feet officers' kitchen for Fort George,

Niagara-on-the-Lake, Ontario (McConnell 1977:77). Hence, the kitchen and messhouse together may have been larger than a total measurement of 30 feet by 20 feet.

The issue of inspection standards and reporting criteria must be addressed here. It is not known whether additions to structures such as sheds, were inventoried by inspectors and included in the dimensions of a structure. Further, it is not known whether all inspectors actually visited sites or if they simply received measurements from post inhabitants, especially for remote posts like Drummond Island. Hence, some reporting practices could lead to ambiguity and mistakes in recording and transposition. Vincent (1978) described several idiosyncrasies between military reports and archaeological remains for Fort St. Joseph. McConnell (1977:74-78) discussed several discrepancies in the reporting of an Officers' quarters and mess room at Fort George (Niagara). Hence, discrepancies and ambiguities in reporting have been encountered on other British military sites of the period.

The 1994 artifact assemblage did not provide conclusive evidence for functional differentiation. Ceramic ware types and decorative styles, for the most part, were evenly distributed. In terms of ceramic vessel forms, general hollowware and flatware forms were evenly distributed between structures. Yet, the number of specific vessel forms from both structures was too small to evaluate vessel type distributions. Initial examination of faunal remains indicated a higher frequency of remains in structure 21B, including sheep/goat and cattle cranial fragments. While these fragments demonstrate early stages of processing rather than consumption, the sample is still not large enough to make any differentiation between a kitchen, mess room, or quarters.

Several factors complicate this differentiation. The former function of the structure as an Engineer Quarter could obscure differences in the archaeological record. In addition, the proximity of the structures could have led to common refuse disposal areas. The subsequent mixing of remains hinders the ability to discern discreet functional differences.

In 1995, additional units were excavated to obtain larger samples from both structures and to determine if one of these buildings had been was partitioned according to the details contained in Portlock Report of 1820. In structure 21A, no interior partitioning was located. Yet, evidence for partitioning was discovered in an excavation block in structure 21B. Units 47, 54, 55, and 61 contained footings running both north-south and east-west. This configuration seems consistent with the Portlock description of a messhouse with three rooms adjoining a kitchen. However, both structures are much larger than the 30 feet by 20 feet messhouse.

If applied to structure 21B, this 30 feet by 20 feet measurement mentioned in Portlock might have reflected only the messhouse itself and not the size of the adjoining rooms in the building. Given the location of the chimney in the west wall, it would seem that the messhouse was located in the western portion of the building. A measurement of 30 feet east from this west wall corresponded almost exactly to the position of the north-south footings. Yet the 20 feet portion of this dimension was more problematic. A measurement of 20 feet north from the south wall lined up approximately 5 feet south of the east-west footings. If this measurement were for the messhouse exclusively, the measurement based on the footings would have been approximately 30 feet by 25 feet. If

structure 21B is indeed the messhouse and kitchen, the structurally similar nature of structure 21A is puzzling.

There were several differences in the assemblages of the respective structures that can aid in functional interpretation. While the ceramic assemblage for structure 21A was just over 20 percent larger than structure 21B, most of this difference was due to the smaller amount of creamware recovered. While structure 21A yielded larger numbers of coarse red earthenware preparation and serving vessels, structure 21B had larger numbers of gray salt-glazed stoneware, mostly in the form of shoe-blacking bottles. In terms of vessel form, structure 21A also dominated in bowls and saucers whereas structure 21B exhibited no examples of these forms. Higher numbers of plate sherds were also recorded for Structure 21A. These higher frequencies for vessel forms suggest the bulk of food consumption took place in structure 21A as opposed to structure 21B. The evidence from clay pipes is more ambiguous. While nearly 40 percent more stem fragments were found in structure 21A, fewer than 10 bowls were found in either structure. Nevertheless, the higher stem frequency suggests smoking centered in and around structure 21A.

There is also a pronounced difference in the frequencies of two glass vessel types. Structure 21A recorded the largest number of lead glass drinking vessel sherds for the entire site. Conversely, structure 21B yielded by far the highest number of dark green glass bottle fragments for the entire site. While certainly not mutually exclusive categories, the drinking vessels could be interpreted as evidence for consumption as opposed to the bottles that are associated more with storage. Hence, the evidence for consumption is strongest in structure 21A whereas the evidence for storage is strongest

for structure 21B. The hand-forged rosehead and T-head nail frequencies also differed between these structures. The frequency of nails between 1 and 4 inches long was much larger in structure 21B. This higher frequency seems to have been generated by partitioning the structure into several different rooms.

The results of the faunal analysis conducted by Dr. Terrence Martin of the Illinois State Museum, also present evidence for this functional dichotomy. While the square footage excavated was identical, the assemblage from 21B was larger. Further, while no burned specimens were recovered from 21A, approximately 18.5% of the 21B assemblage was burned or calcine. While no sheep or goat specimens were recovered from 21A, cranial, isolated teeth, and foot specimens were located in 21A. In terms of beef, 21A specimens included ribs, vertebrae, cranial, and foot portion, but no teeth were discovered. In 21B, vertebrae dominated the assemblage in addition to isolated teeth, cranial, and foot parts. In addition, 21B yielded 2 horse bones including a sawed femur. On the basis of the above patterns, Martin has suggested that the remains of 21A represent consumption, while 21B represents initial stages of processing, and also discard. Hence, it would appear that structure 21A functioned as a place of consumption, such as a quarter or messhouse, whereas structure 21B represented the kitchen.

Pit 1

The excavation of pit 1 can also shed light on the functional differences between the two structures. Pit 1 was located several feet off the northeastern corner of structure 21A. It measured approximately 9 1/2 feet in diameter with walls sloping inward. Excavations were centered on determining whether this surface depression represented a privy, a refuse pit, or a natural occurrence. Unfortunately, the disturbed nature of the pit

precluded a definitive identification. The high density of debris, including sherds from an entire chamberpot, suggest a privy function. At its base, disturbed planks with embedded nails were recovered. This finding was consistent with other pits positively identifies as privies. While the analysis of a float sample taken was inconclusive, the hypothesized functions of the pit were a privy or refuse pit. It seems likely that this pit functioned as a privy at some point, but was it subsequently cleaned and or removed, disturbing the matrix. Its close proximity to structure 21A mirrors the pit 2 and pit 3 privy placement along the side of the structure 20 quarters.

In sum, despite the measurement issues mentioned above, structures 21 A and 21B most likely represent the former engineer quarter consisting of a messroom and kitchen. Vessel forms indicate that serving and consumption vessel types were recovered in greater frequencies from structure 21A. Pipe stems were also found in greater frequency in association with this structure. Conversely, storage vessels seemed to be represented in greater frequency in structure 21B. These frequencies suggest that structure 21A represented the principal house hosting meals and activities such as smoking, while structure 21B represented the kitchen where food was prepared and various items could be stored. The placement of a probable privy near structure 21A also suggests that it functioned as a messroom as opposed to a kitchen. Faunal analysis also indicated that 21A represented an area of consumption, while 21B functioned as a kitchen area for initial processing of fauna and discard of the remains.

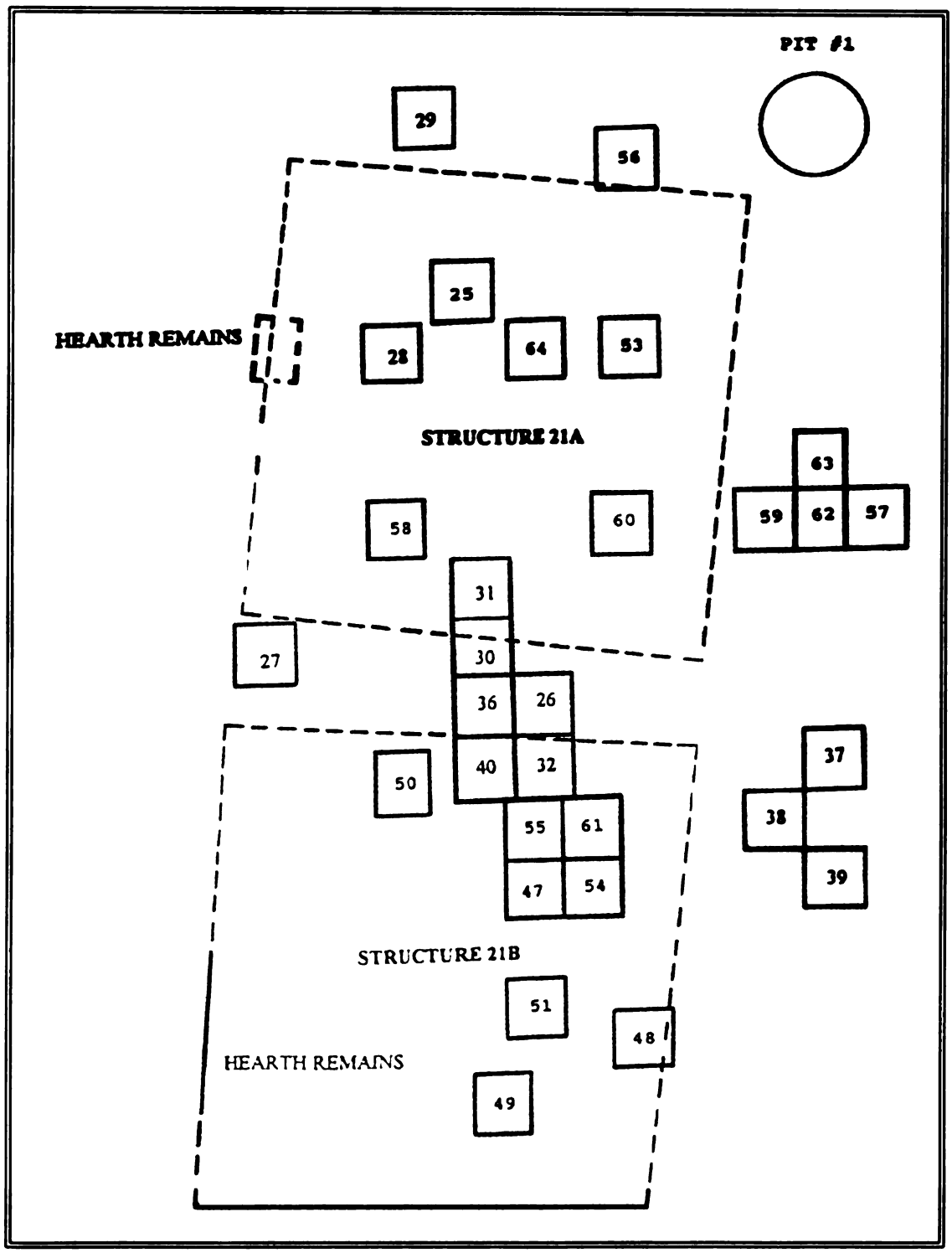


Figure 54: Structure 21A and 21B Test Units and Pits

Figure 55: Bigsby Sketch

Figure 56: Structure 21A South Wall

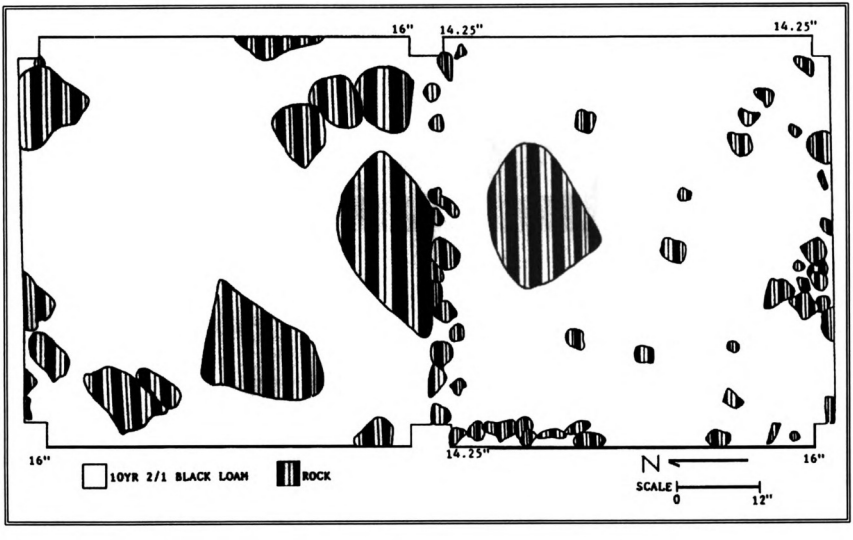


Figure 57: Structure 21B North Wall Plan (Units, 26, 32)

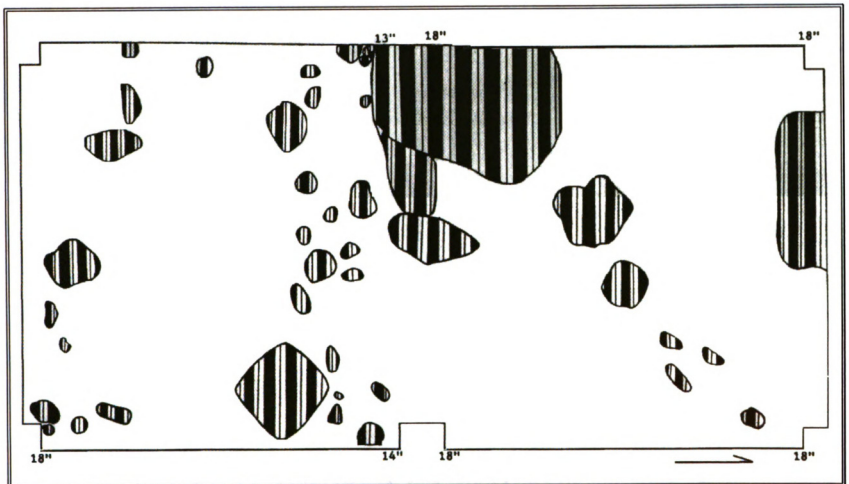


Figure 58: Structure 21B North Wall Plan (Units 36, 40)

Figure 59: Structure 21B North Wall

Figure 60: Structure 21B Interior Partition

Figure 61: Pit 1 Chamberpot In Situ

Structure 72

Structure 72 was the only structure recorded in the area between the village and the shore of Whitney Bay to the south. It was represented by a large rectangular berm measuring 50 feet east-west by 30 feet north-south. Unfortunately, this structure does not appear on any historical maps. Remnants of wooden structural cribbing were still visible in the interior southwestern corner. In his 1816 description of the post McDouall indicated a portion of this area was set aside for gardens (McDouall 1816). Cook (1896: 14-15) encountered this structure and suggested it was a food store for garden produce. Bigsby (1851) also referenced a large empty granary where he slept during his stay. It is quite possible that this structure represented such a store. Unfortunately, limited testing in the northwest and southwest corners did not yield any materials.

Structure 75

At the end of the 1992 field season, a local resident showed project staff a previously unrecorded structural remnant on a foot path between the quarry rim and Humms Road. It was a large circular earthen mound measuring approximately 28 feet wide and 8 feet high. It was dug into a gradual hill slope with the entrance at ground level. Earth and cobbles were banked to form the exterior walls. The interior consisted of a stone-lined circular chamber approximately 10 feet in diameter and laid up with courses of mortared limestone. The hand-hewn timber lintel was still visible. While cleaning out the interior chamber and excavating the initial levels, several collapsed wooden roof supports were uncovered.

A tunnel leading out from the interior measured approximately 12 feet long by just over 3 feet wide. In order to preserve the tunnel, it was not excavated. Rather, structural detail was gleaned by brushing away loose dirt from the top of the tunnel. Vertical circular posts indicated that a form of retaining wall braced the soil and cobble walls of the tunnel. Remnants of collapsed horizontal beams indicated the roof of the tunnel also was braced.

Test unit 33 was placed at the exterior opening of the tunnel. This 3 feet by 4 feet unit was excavated to a depth of 27 inches below surface to bedrock. However, only a single hand-forged nail was recovered from this unit. Test unit 35, located 5 feet east of the previous unit, yielded no historic period artifacts. Test unit 34, located at the interior opening of the tunnel was excavated to a depth of 2 1/2 feet below the surface. Several burned floorboards running north south were recovered at this level. A single rabbit long

bone was recovered from the surface of the floorboards. There was no evidence of modification to the bone.

The surprising lack of material remains from these units is puzzling. Certainly, this situation hinders the interpretation of the structure. Initially, visual inspection suggested that this structure might have been a semi-subterranean trader's hut. Its overall form and dimensions were similar to the traders' huts found on St. Joseph Island (Karklins 1981). However, the detail of the inner chamber was much more elaborate than any hut on St. Joseph Island. The elaboration of the interior chamber coupled with the paucity of material remains suggests a specialized function. It is possible that the structure may have been a used for the storage of provisions or perhaps even furs.

While this specialized storage function is still conjectural, several other specialized functions can be ruled out at this time. One hypothesis put forth suggested the structure was a powder magazine for the fort. Yet, historical records indicated that the British kept using their main powder magazine at Fort St. Joseph while occupying Drummond Island. While no magazine was reported for the post itself, the ammunition may have been kept with the ordnance stores. In addition, several structural features were not consistent with magazine or ammunition depot construction of the period. The circular chamber with loosely mortared courses of stone would not have met the "bomb-proof" standards of military construction. In addition, the long entrance and wooden roof would have made a magazine more vulnerable. Magazines of the period had a metal covering on the roof to protect it from projectiles and airborne sparks. Yet, there was no evidence that the roof was covered by sheet metal. Further, the remote location of this structure would have made it impractical for an ammunition depot.

Another hypothesized function for this structure was a lime kiln. A great deal of lime would have been needed for the construction of chimneys and foundations at the post. Many lime kilns were constructed with circular chambers of similar dimensions to this structure. Yet, we found no accumulation of excess lime or evidence of burning in the interior. Also, kilns would not have been constructed with interior floorboards or a long wooden entrance. Hence, while the exact function of this structure remains uncertain, a semi-subterranean trader's hut seems the most logical function at present. However, kiln and powder magazine functions can be ruled out.

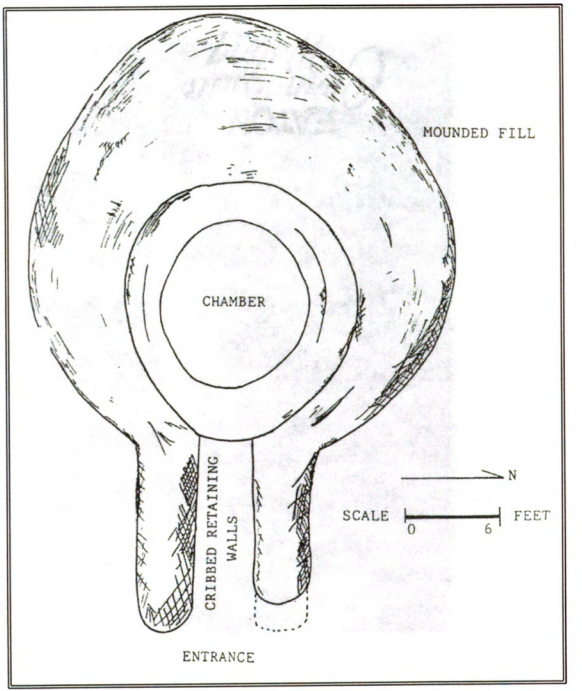


Figure 62: Structure 75 Aerial Plan

Figure 63: Structure 75 Interior

Figure 64: Structure 75 Entrance

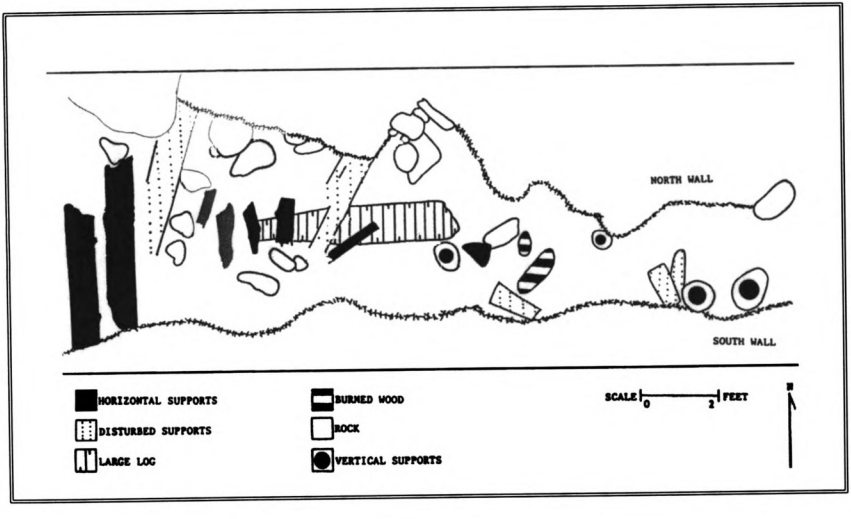


Figure 65: Structure 75 Entrance Plan

Material Analysis and Findings

All materials were cleaned, identified, and recorded by staff and students of Michigan State University. Coding conventions established by the Michigan State University Museum were used to inventory the collection. The Fort Drummond site (20CH50) assemblage was given the unique accession number "7452". The next number in the string was a test unit number assigned during fieldwork, ranging from "001" through "132", while pits were numbered "P1" through "P9". Units or pits extended beyond their original size, were given the designation "ext" such as "99ext". The next number in the sequence was the stratigraphic level determined during fieldwork. Additional numbers in the sequence represented an area designation or feature number. In the case of an area an "A" would precede the area number such as "A2" for area 2. For a feature, an "F" would precede the feature number such as "F18". A subsequent designation such as N, S, N1/2, S1/2, indicated the portion of the feature or area excavated. Hence "F16.N1/2" indicated the northern half of feature 16.

In the case of pit 6, several modifications were made to this format. A two-letter quadrant designation (NW, NE, SW, SE) was used instead of a test unit number. For the southeastern quadrant (SE) of this pit, the abbreviations "EW", "NW", and "SW" after the stratigraphic level designation stand for east, north, or south walls of the quadrant. The abbreviation "SS" used in the southwest quadrant (SW) stood for "soil sample".

Materials were sorted according to material types within the provenance. Material types included: ceramics, clay pipe, brick, mortar, plaster, metal, glass, modified bone, lithics, and plastic. An artifact description and metrics were provided when applicable. Brick, mortar, and plaster were treated as samples generating fragment counts.

Ceramics:

Ceramics were identified on the basis of decoration, ware type, and vessel form. The ceramic terminology used follows Godden (1964) and Noel Hume (1985). Since many sherds were relatively small, it was often impossible to establish realistic minimum number of vessel (MNV) counts within or between test units. Hence while MNV counts are preferable, sherd counts had to be employed on the site. The rocky terrain and lack of soil deposition are two taphonomic factors leading to the reduction in the size of sherds.

The nature of the assemblage was relatively typical for an early nineteenth century site. Pearlware accounted for 65.65% of the ceramics while creamware accounted for 29.49%. Whiteware, as a more vitreous refined white earthenware present in the Great Lakes by the late 1820's, accounted for just over 2% of the assemblage. Higher status wares during this time period such as hard paste porcelain, accounted for only .28%, whereas refined redware represented only .03% of the assemblage. Conversely, utilitarian wares such as coarse red earthenware accounted for 1.43% of the ware total while gray body salt glazed stoneware comprised .93% of the ware total.

Vessel form attribution proved to be a most difficult task due to the size of most sherds. In fact, sherds identifiable only to a general hollowware form amounted to 46.85%, as general flatware accounted for 40.93% of forms. Sherds of unknown form amounted to approximately 29% of the total ceramics recovered. Only 12.2% of identifiable assemblage could be ascribed a vessel form.

Decorative elements proved easier to assess. A total of 55.84% of the total sherds recovered had no visible decoration. Transfer printed designs accounted for nearly 49% of the identifiable total. Blue transfers predominated with 48.86% of the total, while

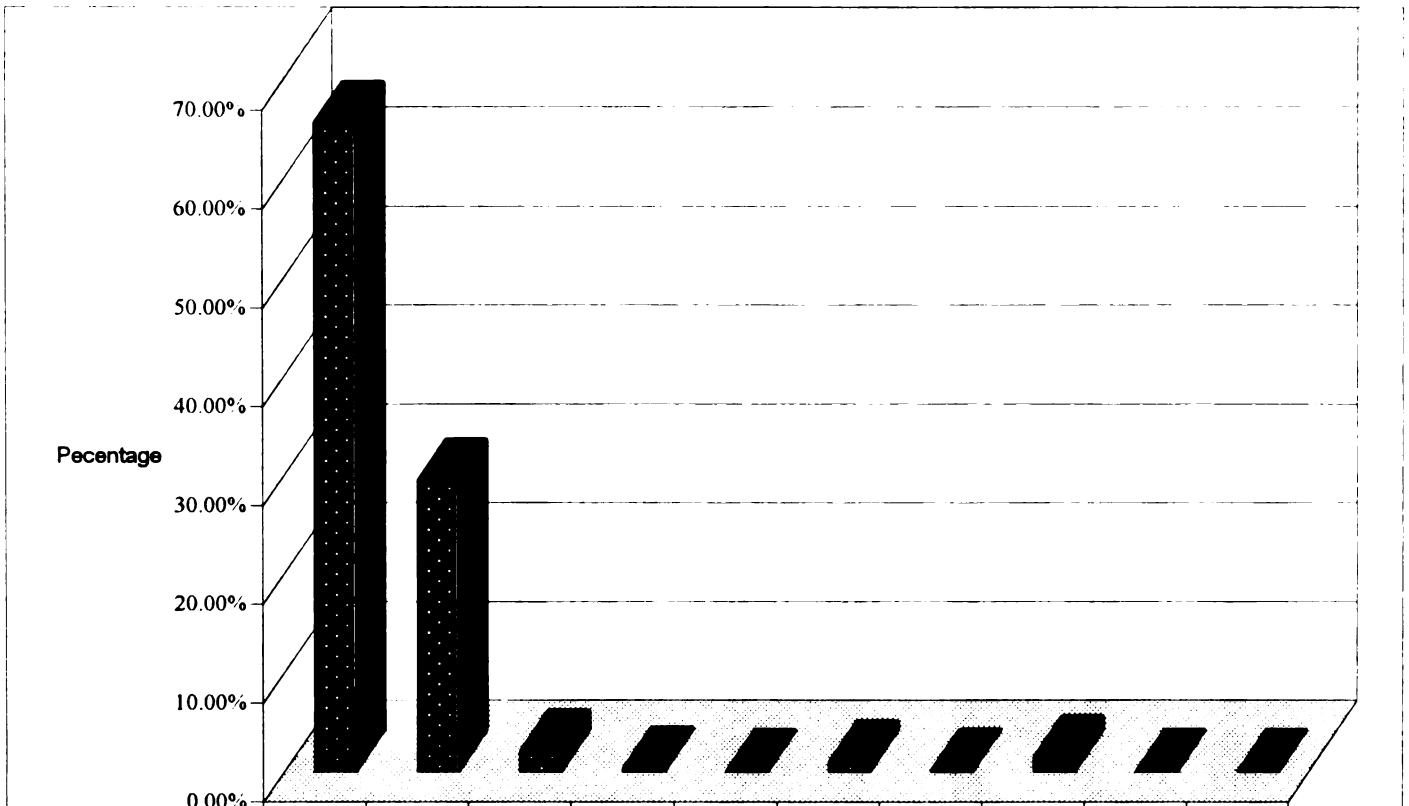
green transfers tallied .22%, and polychrome transfers accounted for .08%. The traditional date for the introduction of green and polychrome transfers is 1828, the same year the fort was abandoned (Jouppien 1980). Hand painted and annular-banded vessels comprised 25.37% and 11.96% of the identifiable total respectively. Only 5 vessels exhibited any overglaze decorative treatment. Dendritic mocha occurred in fairly high frequency in two structures and accounted for just over 2.42% of the decorative assemblage. Edge decorated ceramics included blue (6.13%), green (4.63%), and a single sherd of the rare form of red shell edge.

As a whole, the assemblage is typical of an early nineteenth century military site. While it might be tempting to apply Miller indices (1980, 1991) to obtain information on economic status, several complications arise with this site. It would be difficult to know when these ceramics were purchased as many regimental messes were sent into cantonment before the war of 1812. Since there was a significant index shift reflecting the tariffs of 1816, the indices would be affected greatly. South and Widmer (1977:142) have noted the presence of less expensive wares in military situations. Status assessment could also be hindered by the purchase of ceramics by third parties such as regimental agents, or by indirect purchase mechanisms such as officers' mess dues. The inability to sort out discreet regimental occupations would further complicate this process.

TABLE 8: WARE TYPE TOTALS

WARE TYPE	Pearlware	Creamware	Whiteware	Hard Paste Porcelain	Soft Paste Porcelain	Gray-Body Stoneware	Buff E'ware	Coarse Red E'ware	Refined Redware	Tin Glazed E'ware
STRUCTURE /AREA										
Shovel Test:	50	28	0	2	0	0	0	10	0	0
STR 12	133	79	1	0	0	2	0	1	0	0
PIT 7	29	0	0	0	0	0	0	0	0	0
STR 13	25	68	0	0	0	0	0	0	0	0
PIT 8	0	0	0	0	0	0	0	0	0	0
STR 16	761	432	45	4	0	5	0	14	0	0
STR 17	2148	665	63	20	3	8	4	29	2	1
STR 19	263	260	2	1	0	0	2	6	0	0
PIT 4	51	0	0	0	0	0	0	0	1	0
PIT 6	776	185	94	1	0	0	4	18	0	0
STR 20	718	235	2	0	1	0	1	2	0	0
PIT 2	64	4	3	0	0	0	0	0	0	0
PIT 3	18	13	0	0	0	0	0	0	0	0
PIT 5	33	0	0	0	0	1	0	0	0	0
PIT 9	122	60	4	2	0	4	0	0	0	0
STR 21A	810	625	5	0	0	7	0	62	0	0
PIT 1	332	123	0	0	0	1	1	1	0	0
STR 21B	754	406	0	0	0	73	0	11	0	0
TOTALS	**7087**	**3183**	**219**	**30**	**4**	**101**	**12**	**154**	**3**	**1**
% TOTAL	65.65%	29.49%	2.02%	0.28%	0.03%	0.93%	0.11%	1.43%	0.03%	0.01%

TABLE 9: WARE TYPE PERCENTAGES

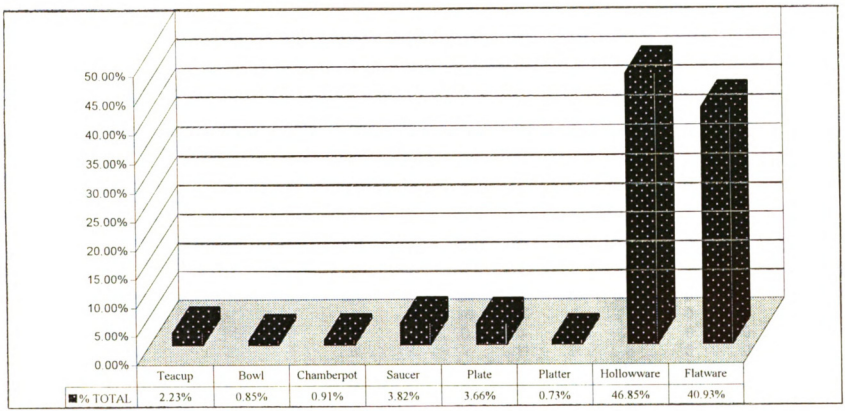


	Pearl ware	Cream ware	White ware	Hard Paste Porcelain	Soft Paste Porcelain	Stone ware	Buff E'ware	Coarse Red E'ware	Refined Redware	Tin Glazed E'ware
% TOTAL	65.65%	29.49%	2.02%	0.28%	0.03%	0.93%	0.11%	1.43%	0.03%	0.01%

TABLE 10: VESSEL FORM TOTALS

VESSEL TYPE / STRUCTURE /AREA	Teacup	Bowl	Chamberpot	Saucer	Plate	Platter	General Hollowware	General Flatware
Shovel Tests	0	0	0	13	0	1	31	34
STR 12	1	1	0	0	11	0	34	43
PIT 7	0	0	0	0	29	0	0	0
STR 13	0	0	0	0	10	0	10	33
PIT 8	0	0	0	0	0	0	0	0
STR 16	5	0	0	20	0	0	473	499
STR 17	71	2	14	110	40	14	1252	694
STR 19	5	0	0	63	1	0	86	108
PIT 4	0	0	0	0	0	0	33	2
PIT 6	0	0	0	0	0	0	615	468
STR 20	37	2	11	18	0	19	343	452
PIT 2	0	0	0	0	0	0	49	21
PIT 3	0	1	0	0	0	0	5	7
PIT 5	1	0	0	26	0	0	6	0
PIT 9	7	11	0	7	0	20	0	116
STR 21A	8	48	0	30	139	2	312	237
PIT 1	1	0	8	5	12	0	148	240
STR 21B	35	0	37	0	38	0	186	176
TOTALS	**171**	**65**	**70**	**292**	**280**	**56**	**3583**	**3130**
% TOTAL	2.23%	0.85%	0.91%	3.82%	3.66%	0.73%	46.85%	40.93%

TABLE 11: VESSEL FORM PERCENTAGES

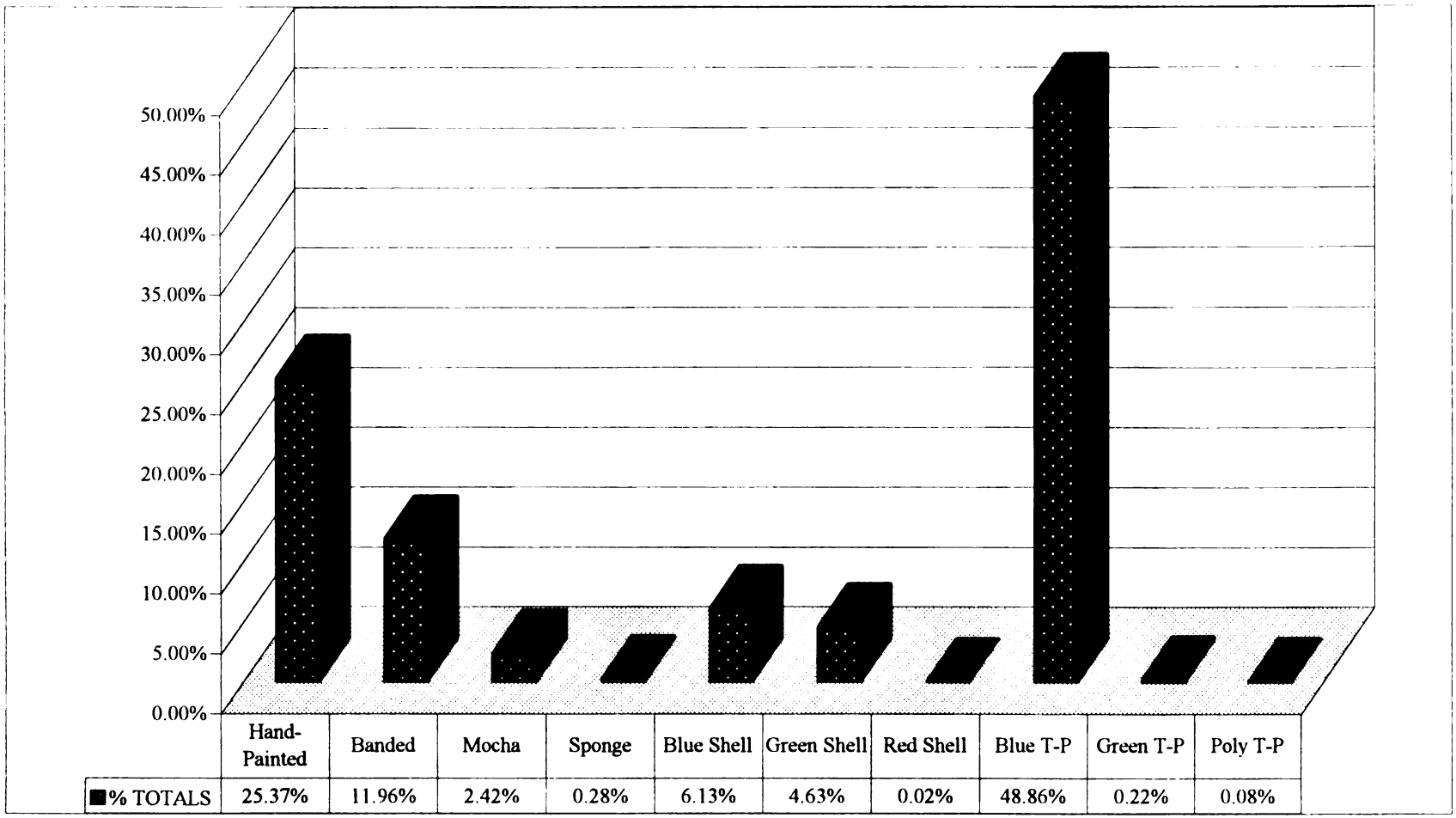


	Teacup	Bowl	Chamberpot	Saucer	Plate	Platter	Hollowware	Flatware
% TOTAL	2.23%	0.85%	0.91%	3.82%	3.66%	0.73%	46.85%	40.93%

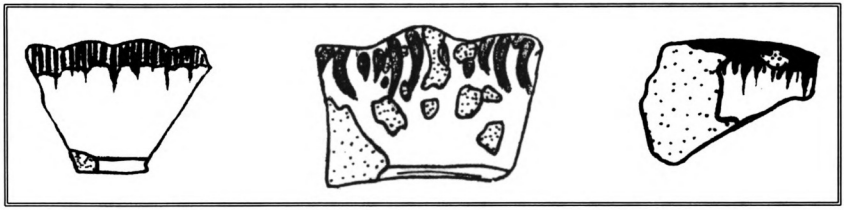
TABLE 12: DECORATIVE TYPE TOTALS

DECORATIVE TYPE STRUCTURE /AREA	Hand Painted	Annular Banded	Dendritic Mocha	Sponge	Blue Shell Edge	Green Shell Edge	Red Shell Edge	Blue Transfer Printed	Green Transfer Printed	Poly Transfer Printed
Shovel Tests	13	14	0	0	1	0	0	14	0	0
STR 12	16	0	0	0	5	7	0	32	0	0
PIT 7	0	0	0	0	0	29	0	0	0	0
STR 13	1	0	0	0	1	1	0	7	0	0
PIT 8	0	0	0	0	0	0	0	0	0	0
STR 16	155	120	36	7	23	31	0	163	3	3
STR 17	472	236	50	2	95	43	1	844	7	1
STR 19	22	14	1	0	4	8	0	123	1	0
PIT 4	19	14	0	0	0	0	0	30	0	0
PIT 6	111	36	21	0	33	22	0	273	0	0
STR 20	81	71	1	0	16	46	0	250	0	0
PIT 2	19	0	0	0	0	0	0	23	0	0
PIT 3	3	1	0	0	1	1	0	6	0	0
PIT 5	6	1	0	0	0	0	0	1	0	0
PIT 9	19	11	0	0	9	2	0	45	0	0
STR 21A	115	18	2	0	44	26	0	163	0	0
PIT 1	14	8	2	5	21	2	0	132	0	0
STR 21B	172	40	5	0	46	8	0	278	0	0
TOTALS	**1238**	**584**	**118**	**14**	**299**	**226**	**1**	**2384**	**11**	**4**
% TOTALS	25.37%	11.96%	2.42%	0.28%	6.13%	4.63%	0.02%	48.86%	0.22%	0.08%

TABLE 13: DECORATIVE TYPE PERCENTAGES



	Hand-Painted	Banded	Mocha	Sponge	Blue Shell	Green Shell	Red Shell	Blue T-P	Green T-P	Poly T-P
% TOTALS	25.37%	11.96%	2.42%	0.28%	6.13%	4.63%	0.02%	48.86%	0.22%	0.08%



BLUE SHELL-EDGE PEARLWARE

BLUE SHELL-EDGE PEARLWARE

EDGE DECORATED WHITEWARE

Figure 66: Edge Decorated Ceramics

Clay Pipes:

Clay pipes were inventoried by the fragment position on the vessel (bowl, stem, shank, spur) and decoration (Table 14). Excluding pit 9, most of the bowls showed no decoration. Impressed "TD" was the most common decorative motif. Other common early nineteenth century decorative bowl motifs included cross-hatch, flutes, and laurel leaf. Stem decorations included molded floral and red hand-painted designs. A single example of a rare red earthenware stem was also recovered.

A large clay pipe concentration recovered from pit 9, associated with structure 20, presented some interesting possibilities for further material culture research. This cache was composed of a minimum of 127 clay pipes based on a count of unique pipe bowls. A total of 1,054 stems were also recovered from this cache. The mostly likely explanation would be that a box or boxes of pipes, perhaps a gross or 144 pipes, arrived damaged and were subsequently discarded in the pit. There is an interesting reference in the 1823 Board of Survey report for the Indian stores on Drummond Island, which recorded 1,641 unserviceable pipes (Clarke et al 1823:151). Given the fragility of ball clay pipes, it is not surprising that many arrived damaged.

Since these fragments seem to be from the same box, variations in form and decoration become significant for gauging variation within the pipe industry during this period. While no systematic diameter tests were applied, decorative attributes were recorded. It would appear that all bowls had an impressed "TD" surmounted by a curlicue. However, some variation did exist in the in the spur area of the pipes. A total of 16 spurs were unmarked, while an additional 16 spurs had a molded "TD" while 98

TABLE 14: CLAY PIPE TOTALS

STR/AREA	Bowls			Stems		Spurs			Bowl / Spur		TOTAL	% TOTAL
	Plain	TD	Other	Plain	Decorated	Unmarked	TD	WG	TD/TD	TD/WG		
ST'S	4	0	0	3	0	0	0	0	0	0	**7**	**0.23%**
STR 12	4	0	0	9	0	0	0	0	0	0	**13**	**0.43%**
STR 13	2	0	0	4	0	0	0	0	0	0	**6**	**0.19%**
STR 16	7	2	0	94	0	0	1	1	4	0	**109**	**3.62%**
STR 17	76	10	1 cross-hatch 1 leaf pattern	290	8 hand-painted 2 moulded floral 1 red earthenware	0	0	3	1	1	**393**	**13.05%**
STR 19	3	1	0	28	1 moulded floral	0	0	0	0	0	**33**	**1.10%**
PIT 4	1	0	0	4	0	0	0	0	0	0	**5**	**0.16%**
PIT 6	8	0	0	83	0	0	0	1	0	0	**92**	**3.06%**
STR 20	70	5	1 fluted 1 laurel leaf	335	1 hand-painted	0	1	13	1	1	**431**	**14.31%**
PIT 2	0	2	0	11	0	0	0	0	0	0	**13**	**0.43%**
PIT 3	1	0	0	3	0	0	0	0	0	0	**4**	**0.13%**
PIT 5	0	0	0	2	0	0	0	0	0	2	**4**	**0.13%**
PIT 9	0	219 (MNV=127)	0	1054	0	16	0	0	16	98	**1403**	**46.60%**
STR 21A	66	1	0	269	0	0	1	6	0	1	**344**	**11.42%**
PIT 1	4	0	0	18	0	0	0	0	0	0	**22**	**0.73%**
STR 21B	23	2	0	103	0	0	0	3	1	0	**132**	**4.38%**
TOTALS	**269**	**242**	**4**	**2312**	**12**	**16**	**3**	**27**	**23**	**103**	**3011**	

had a "WG" on the spur. Hence, it would appear that the use of unmarked, "TD", and "WG" spurs was overlapping if not contemporaneous.

Glass:

Since the glass assemblage suffered from small sherd size, sherd counts were employed instead of MNV counts. General glass terminology used in the analysis was based on Jones and Sullivan (1985) and Jones and Smith (1985). Glass was identified by color, fabric type, and vessel form (Table 15). Typically, fabrics and colors are assessed by chemical composition including impurities and additives. The glass assemblage was typical for a British military site of the early nineteenth century. Lead glass and soda-lime were the predominant fabrics. The most common vessel forms were the stemmed drinking glass, dark green cylindrical bottle, and the panel bottle. The overwhelming majority of stemmed vessels were "wine" glasses with central knop stems and bucket or in-curved bowls (figure 67). Tumblers occurred in relatively low frequency except in pit 4. Lead glass was the predominant fabric for all drinking vessels. Panel bottles and vials of this period most often contained patent and proprietary medicines such as "Essence of Peppermint" and "Balsam of Life". Once again, lead glass was the dominant fabric but soda-lime was also represented in significant numbers. Unfortunately, while a large number of dark green bottle sherds were recovered (n=486), the small size of many of these fragments hampered analysis. Down-tooled and sting rims were documented.

The site also yielded 175 glass trade beads (Tables 16, 17). This study followed the glass bead identification techniques discussed in Stone (1974) and especially Devore (1992). Beads were identified by method of manufacture, structure, shape and surface characteristics, and diaphaneity. Manufacturing techniques included hollow cane (HC),

wire-wound (WW), complex construction (CC), and molded. Beads were measured with digital calipers to obtain sizes. Traditionally, size-functionality studies have classified beads under 2mm as "seed beads" used for embroidery on clothing. Beads over 6mm in size were classified as necklace beads. The intervening size, 2mm-6mm, has presented difficulties for interpretation (Devore 1992: 8-10). Certainly, many sizes could be interspersed on either clothing or necklaces.

Not surprisingly, the most common forms of manufacture were hollow cane and wire-wound. Complex forms such as the multi-layered "coraline d'aleppo" beads were found in a much lower frequency. Only a single molded glass bead was recovered. The 2.1-4 mm size registered the highest percentage at 44.4%, while the 6.1-8mm size accounted for 32.16% of beads. In terms of colors, white beads under 4.1mm accounted for 29% of all beads. Cobalt blue beads, mostly of the 6.1-8mm size, contributed 16.3% of the assemblage. Turquoise and light blue were also present in significant numbers. Only 1 one example of a red colored bead was discovered.

TABLE 15: GLASS VESSEL TOTALS

VESSEL TYPE	Stem Lead	Stem S-L	Tumbler Lead	Cyl Bottle Dk Green	Cyl Bottle S-L	Cyl Bottle Lead	Panel Lead	Panel S-L	Unknown Lead	Unknown S-L	Unknown Dk Green	TOTAL
STR/AREA												
Shovel Tests	4	0	0	3	0	1	0	10	0	0	0	18
STR 12	59	2	0	25	0	0	0	37	11	1	0	135
PIT 7	0	0	0	0	0	0	0	0	0	0	0	0
STR 13	24	0	0	25	0	0	0	5	0	0	0	54
PIT 8	0	0	7	3	0	0	0	0	0	0	0	10
STR 16	20	0	1	20	8	4	13	1	38	1	0	106
STR 17	51	0	6	74	17	24	118	35	50	16	0	391
STR 19	9	0	0	12	4	11	6	33	2	0	0	77
PIT 4	0	0	72	7	0	0	14	0	0	0	0	93
PIT 6	42	0	0	2	0	3	13	0	13	0	0	73
STR 20	81	0	4	33	13	15	99	0	34	1	0	280
PIT 2	1	0	0	10	0	0	0	3	6	0	9	29
PIT 3	0	0	1	0	0	1	53	0	0	0	0	55
PIT 5	0	0	0	1	0	0	0	0	0	0	0	1
PIT 9	21	0	0	0	0	2	0	6	0	0	0	29
STR 21A	110	2	0	63	1	11	5	0	31	1	0	224
PIT 1	24	0	0	0	0	0	25	0	4	1	0	54
STR 21B	31	5	0	208	2	15	4	0	29	53	4	351
TOTALS	**477**	**9**	**91**	**486**	**45**	**87**	**350**	**130**	**218**	**74**	**13**	**1980**

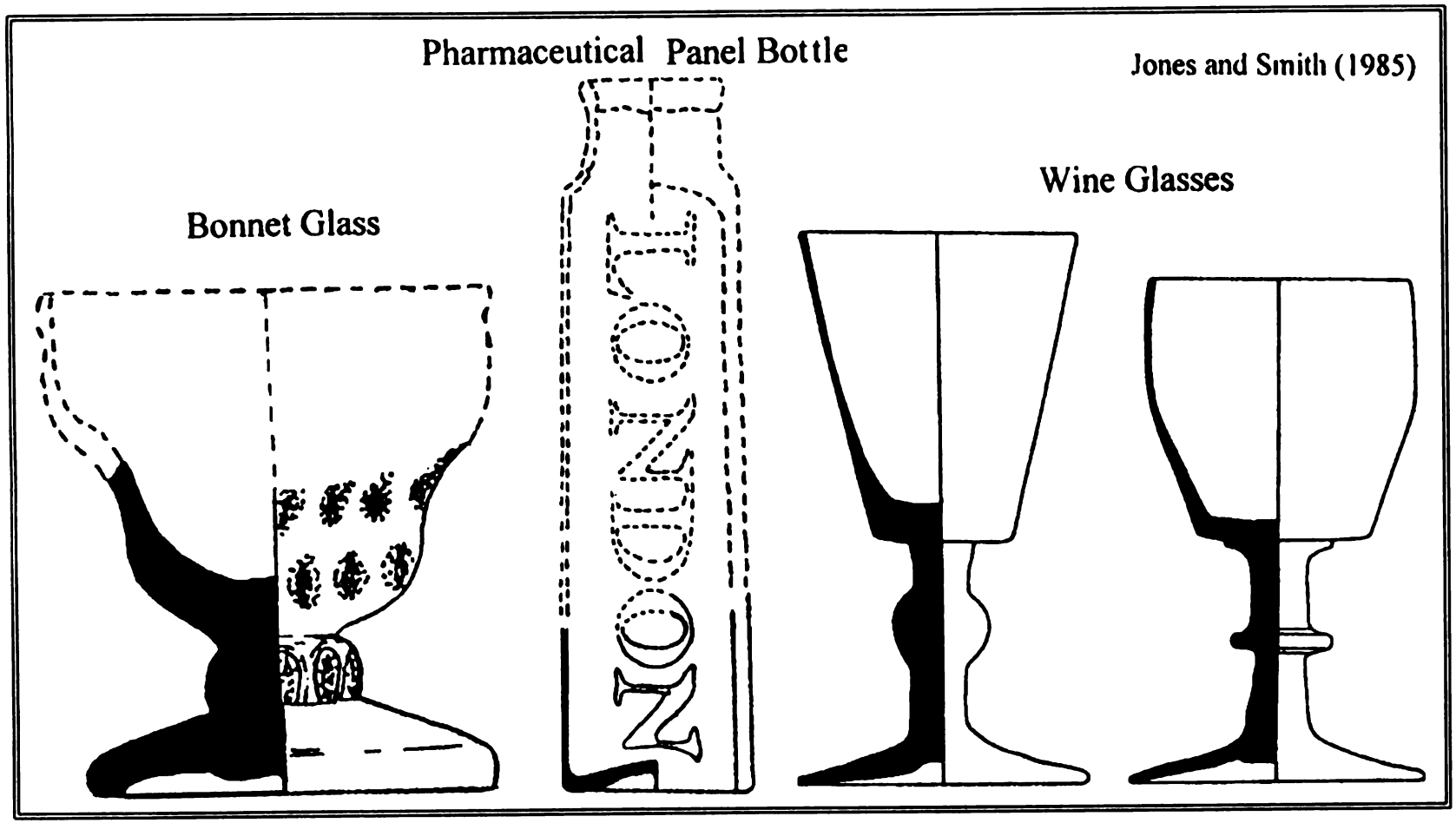


Figure 67: Glass Vessel Forms

TABLE 16: GLASS BEAD INVENTORY

STR	Provenance	Count	Description
0	7452.ST(01.10)	1	HC tubular faceted blue-green translucent l=5.6mm
0	7452.ST(01.11)	1	HC donut faceted aqua blue translucent bead l=4.7mm
12	7452.003.04.A1	1	WW donut dark blue translucent bead d=7.5mm
16	7452.081ext.02	1	HC donut medium blue translucent bead d=3.9mm
16	7452.090.02	8	HC donut light blue translucent beads d=3.5-3.9mm
16	7452.090ext.03	1	HC donut white opaque seed bead d=2.6mm
16	7452.090ext.03	2	HC donut light blue transparent beads d=3.5mm, 4mm
16	7452.093.03	1	CC tubular faceted white core medium blue translucent bead l=6.25mm
16	7452.093.03	1	CC circular faceted white core translucent blue bead l=6.25mm
17	7452.021.03	4	WW round dark amethyst translucent bead d=7.4-8.5mm
17	7452.021.03	2	WW round cobalt blue translucent bead d=7.2 & 8.5mm
17	7452.021.03	1	WW donut light green translucent bead d=8mm
17	7452.021.03	1	WW donut turquoise translucent bead d=7.2mm
17	7452.021.03	9	WW donut white opaque seed bead d=2.3-3.4mm
17	7452.021.03.A1	1	HC donut white opaque bead d=3.7mm
17	7452.021.03.A1	6	WW round amethyst opaque beads d=7.5-8.5mm
17	7452.021.03.A1	2	WW round cobalt blue translucent beads d=8.5mm
17	7452.021.03.A1	1	WW circular cobalt blue translucent beads d=9mm
17	7452.021.03.A1	1	WW circular ivory-white translucent bead d=7.2mm
17	7452.021.03.A1	1	WW donut light green translucent bead d=7.5mm
17	7452.021.03.A1	1	WW round clear-light amethyst transparent bead d=6.3mm
17	7452.021.03.A1	1	WW cobalt blue circular translucent bead d=8mm
17	7452.021.03.A1	1	HC donut light blue opaque seed bead d=2mm
17	7452.021.03.A1	1	WW donut amber abraded surface opaque bead d=8.2 mm

TABLE 16: GLASS BEAD INVENTORY

17	7452.021.03.A1	2	HC donut white opaque seed beads d=2.6mm, 2.8mm
17	7452.021.03.A1	1	HC donut medium blue translucent bead d=3.5mm
17	7452.021.03.A2	1	HC donut white opaque seed bead d=3mm
17	7452.021.03.A2	1	WW round cobalt blue bead d=8mm
17	7452.021.04	1	WW oval cobalt blue translucent bead d=8.5mm
17	7452.021.04	1	WW cylindrical cobalt blue translucent bead l=8.5mm d=5.1mm
17	7452.021.04	1	WW donut white translucent bead d=5mm
17	7452.021.04.A2	4	WW circular cobalt blue translucent beads d=8mm
17	7452.021.04.A2	1	WW circular amethyst translucent bead d=8mm
17	7452.021.04.A2	2	HC donut white opaque seed bead d=2mm
17	7452.044.03.A1	1	WW cylindrical red opaque bead l=7.5mm
17	7452.065.03.A1	1	HC donut faceted blue-green bead l=7.5mm d=9.5mm
17	7452.065.07	1	CC faceted tubular light blue core cobalt blue translucent bead l=11.5mm
17	7452.065.07	1	HC faceted donut light blue opaque bead l=4mm
17	7452.065.07	1	HC tubular faceted barrel light blue opaque bead l=4mm
17	7452.077.02	1	WW donut jade green opaque d=6mm
17	7452.077.04	2	HC donut white opaque seed beads d=2.7mm, 2.8mm
17	7452.077.04	2	WW round black opaque beads d=7.25mm, 8mm
17	7452.077.04	2	WW donut cobalt blue translucent beads d=6.1mm, 6.4mm
17	7452.077.04	1	HC donut turquoise translucent seed bead d=3mm
17	7452.077.04	1	WW round medium blue translucent bead d=8.7mm
17	7452.077.04	1	WW donut pitted surface clear translucent bead d=7.3mm
17	7452.077.04	1	WW flattened donut white opaque bead d=7.1mm
17	7452.077.04	1	WW flattened donut jade green opaque bead d=5.9mm
17	7452.077.04	1	CC faceted donut white core cobalt blue translucent l=6.1mm
17	7452.077.04	1	WW faceted circular clear translucent bead l=6.5mm
17	7452.077.04	1	WW circular faceted amethyst translucent bead l=8.25mm
17	7452.077.05	1	WW circular cobalt blue translucent bead d=5.5mm

TABLE 16: GLASS BEAD INVENTORY

17	7452.077.05	1	WW circular medium green translucent bead d=6mm
17	7452.077.03	1	CC donut translucent green core red, clear layers cornaline d'Aleppo l=10mm w=11mm
17	7452.077.03	1	CC donut faceted translucent white core clear bead d=7.2 mm l=4mm
17	7452.077.06	1	WW flattened donut jade green opaque bead d=6.2mm
17	7452.078.02	1	moulded round w/ longitudinal ribbed white translucent bead d=13.6mm
17	7452.078.02	1	WW donut blue-green translucent bead d=6.75mm
17	7452.078.02	1	CC circular faceted white core medium blue translucent bead l=5mm
17	7452.078.02	1	HC donut white opaque seed bead d=3mm
17	7452.078.02	1	HC donut turquoise opaque seed bead d=1.14mm
17	7452.078.02	1	HC donut light green translucent seed bead d=1.04mm
17	7452.078.03.A1	1	HC circular faceted dark blue transparent bead l=6.1mm
17	7452.078.03.A1	1	HC circular faceted light blue translucent bead l=4.6mm
17	7452.078.03.A1	2	HC donut white opaque seed bead d=2.5mm, 3.2mm
17	7452.078.04.A2	1	HC donut white opaque seed bead d=3.2mm
17	7452.079.06.A2	1	HC donut white opaque bead d=3.5mm
17	7452.082.02	1	WW round cobalt blue translucent bead fragment
17	7452.083.03	1	WW round abraded surface turquoise translucent bead d=6.5mm
17	7452.085.04.A1	1	CC tubular faceted white core medium blue transparent bead l=6mm d=4.2mm
17	7452.100.03.A1	1	CC tubular faceted white core med blue transparent abraded bead l=7mm
17	7452.102.03	1	WW round cobalt blue opaque bead d=3.3mm
17	7452.102.04.A2	1	HC tubular white opaque bead l=4.5mm
17	7452.105.03	1	HC donut faceted amethyst translucent seed bead w=2.9mm l=2.6mm
17	7452.105.02	1	HC donut white opaque seed bead d=2.5mm
17	7452.106.04	1	WW donut cobalt blue translucent bead malformed bore d=6.9mm
17	7452.107.02	1	WW circular cobalt blue translucent abraded surface bead d=7.1mm
17	7452.109.02	3	HC donut white opaque seed beads d=2.5-2.9mm
17	7452.109.04	1	WW round cobalt blue translucent bead d=6.1mm
17	7452.109.04.A3	1	HC donut white opaque seed bead d=3.75mm

TABLE 16: GLASS BEAD INVENTORY

17	7452.110.03	1	HC donut white opaque seed bead d=2.4mm
17	7452.115.03.A2	4	HC donut white opaque seed beads d=2.4mm-3.5mm
17	7452.115.03.A2	1	WW donut cobalt blue opaque bead d=3.4mm
17	7452.115.04.A2	1	WW circular dark blue opaque bead d=3.8mm
19	7452.067.03	1	HC donut white opaque seed bead d=2.5mm
19	7452.P4.02	1	CC tubular faceted white core medium blue translucent bead l=6.5mm
19	7452.P4.02	1	CC tubular faceted white core medium blue translucent bead l=5.5mm
19	7452.P4.03	1	HC donut white opaque seed bead d=3mm
19	7452.P4.03	1	WW flattened donut turquoise bead d=6mm
19	7452.P6.SW.SS	1	WW oval cobalt blue translucent bead d=7.5mm
20	7452.023.04	1	HC donut white opaque seed bead d=3mm
20	7452.023.06	1	HC donut white opaque seed bead d=2.7mm
20	7452.024.02	1	HC faceted tubular medium green translucent bead l=5.7mm
20	7452.042.02	1	HC tubular faceted medium blue translucent bead l=5.6mm
20	7452.042.03	1	WW donut cobalt blue translucent bead d=8mm
20	7452.042.04	1	WW circular medium blue translucent bead d=5mm
20	7452.042.04	3	HC donut turquoise translucent seed beads d=3.1mm
20	7452.111.03	7	HC donut turquoise opaque seed beads d=3.2mm-3.6mm
20	7452.111.03	3	WW donut cobalt blue transparent bead d=6.1mm-6.75mm
20	7452.112.06	1	HC donut white opaque seed beads d=2.4mm
20	7452.112.wall	1	CC tubular white core light blue translucent bead l=5.5mm
20	7452.119.04	1	HC round turquoise translucent bead (2 halves)
20	7452.119.06.A2	1	WW donut dark amethyst opaque bead d=7.4mm
20	7452.119.06.A2	1	WW donut medium green translucent bead d=7mm
20	7452.119.06.A2	1	HC donut turquoise opaque bead d=3.4mm
20	7452.119.06.A2	1	CC donut green translucent w/ red, clear layers Cornaline d'Aleppo d=4.1 l=3mm
20	7452.119.06.A2	3	WW tubular white opaque beads d=2.7mm-2.9mm l=4.6mm-4.9mm
20	7452.119.06.A2	6	HC donut white opaque beads d=2.8mm-3.7mm

TABLE 16: GLASS BEAD INVENTORY

20	7452.P3.04.A1	1	HC donut turquoise opaque seed bead d=2.7mm
20	7452.P9.02	1	WW donut light green transparent bead d=6.2mm
21	7452.027.02	1	HC donut white opaque seed bead d=2.5mm
21	7452.057.05	3	HC donut white opaque seed beads d=3mm
21	7452.P1.04	1	WW round black opaque bead d=7.5mm
22	7452.038.02	1	WW circular light blue opaque bead d=6mm
22	7452.047.03	1	HC donut white opaque seed bead d= 2.5mm

TABLE 17: BEAD SIZES AND COLOURS

BEAD SIZES AND FORMS

METHOD OF MANUFACTURE	HOLLOW CANE	WIRE-WOUND	COMPLEX	MOLDED	TOTAL
BEAD SIZE					
0-2mm	5	0	0	0	5
2.1-4mm	64	12	0	0	76
4.1-6mm	8	8	1	0	17
6.1-8mm	7	45	3	0	55
>8mm	0	15	2	1	18
TOTAL	84	80	6	1	171

BEAD SIZES AND COLOURS

BEAD SIZE	0-2mm	2.1-4mm	4.1-6mm	6.1-8mm	>8mm	TOTAL
BEAD COLOR						
LIGHT BLUE	0	12	2	1	0	15
MEDIUM BLUE	0	2	3	1	1	7
DARK BLUE	0	1	0	2	0	3
COBALT BLUE	0	2	1	18	7	28
BLUE-GREEN	0	0	0	2	1	3
TURQUOISE	1	13	0	3	0	17
LIGHT GREEN	1	0	0	2	0	3
MEDIUM GREEN	0	0	4	2	0	6
LIGHT AMETHYST	0	0	0	1	0	1
MEDIUM AMETHYS	0	1	0	4	3	8
MEDIUM RED	0	0	0	1	0	1
DARK AMETHYST	0	0	0	3	3	6
BLACK	0	0	0	3	0	3
CLEAR	0	0	0	2	0	2
WHITE	2	50	3	2	1	58
AMBER	0	0	0	0	1	1
MULTI-COLORED	0	0	4	4	1	9
TOTAL	4	81	17	51	18	171

Metal:

Metal was identified by material and artifact type with verbal descriptions and metrics when applicable. Several frequently occurring artifact types such as nails and buttons were described in a more systematic fashion.

Nail terminology was derived from Nelson (1968). Nails were divided first by hand wrought and machine cut, then complete nails versus fragments, and by head type within each group. Within each head type, the complete nails were measured to the nearest 1/4", and malformation was noted. A list of stores at Drummond Island in 1823 documented a variety of nails by "pennyweight", abbreviated as "d" or "dy". They inventoried: 30d (4 1/2"): 47,300; 20d (4"): 20,160; 12d (3 3/4"): 74,275; 10d (3"): 9,500; 8d (2 1/2"): 4,500; 6d (shingle nails): 611,825; and a "various" category totaling 8,860 (Clarke et al 1823:191). This survey also showed the British Indian Department also kept an inventory of 8d and 10d nails in their stores on the island.

The documented head types within the wrought nail category included: rosehead, T-head, L-head, flathead, and manufactured headless (Tables 19-23). By far the most common head type was the rosehead. There was a concentration of roseheads in the 1 to 2-inch sizes representing generalized finishing, flooring and shingle nails. Smaller peaks also occurred for the 3 and 4-inch sizes that are associated with activities such as framing. Specialty heads such as the T-head, L-head, and headless were used to provide a flush surface for trim and framing. T-heads (n=143) were concentrated in the 1 1/4 to 2-inch range, and in the 3 1/4 to 3 1/2-inch range. L-heads (n=166) clustered around 3/4-inch trim nails, and 1 1/2 to 2 1/2-inch flooring nails. A smaller cluster was recorded for the 3 to 4-inch framing size. Manufactured headless nails occurred in a much lower frequency

(n=21). Most of these nails are concentrated in the 2 to 3-inch range. Flathead nails also occurred in much lower frequencies (n=24). Most examples measured 3 inches or less.

Machine-cut nails were also present on the site (Table 23). While this nail technology was first developed in the late eighteenth century, these nails have not been recovered in pre-1820's Great Lakes contexts. Many of these nails exhibited the early cut-nail characteristic of a rounded shank, while 6 specimens had hand finished-heads. These attributes were dated from 1815 to the late 1830's (Nelson 1968).

TABLE 18: HAND-FORGED ROSEHEAD NAIL TOTALS

SIZE IN INCHES	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5	Total	Frags
STR/ AREA																				
ST's	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	0	0	**4**	2
STR 12	1	4	19	106	24	32	14	12	7	14	9	18	3	8	1	8	1	1	**282**	94
PIT 7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0
STR 13	0	0	1	0	0	4	0	2	1	2	1	3	3	0	0	0	0	0	**17**	36
STR 16	0	2	2	4	1	8	3	0	2	6	3	3	1	6	0	1	0	0	**42**	68
STR 17	3	6	6	72	29	13	8	7	7	18	7	7	5	14	5	8	0	2	**217**	143
STR 19	1	3	2	2	2	4	3	2	0	7	1	4	1	1	0	1	1	0	**35**	14
PIT 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	9
PIT 6	0	0	0	2	1	1	0	1	0	0	0	0	1	0	0	1	0	1	**8**	25
STR 20	0	2	31	77	29	28	1	6	1	20	6	6	4	15	3	26	4	11	**270**	150
PIT 2	0	0	0	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**7**	33
PIT 3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**	2
PIT 5	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	0	**4**	0
PIT 9	0	4	2	1	0	0	1	4	0	2	0	3	0	0	1	0	0	0	**18**	9
STR 21A	2	2	2	7	10	6	1	2	1	1	2	6	3	6	1	3	0	1	**56**	26
PIT 1	0	0	0	4	0	0	0	0	0	1	1	2	0	3	0	0	0	1	**12**	20
STR 21B	0	4	12	21	10	44	2	3	1	15	3	6	1	25	9	7	3	2	**168**	29
TOTALS	**7**	**27**	**77**	**303**	**106**	**142**	**33**	**42**	**21**	**86**	**33**	**59**	**22**	**79**	**22**	**55**	**9**	**19**	**1142**	**660**

TABLE 19: HAND-FORGED T-HEAD NAIL TOTALS

SIZE IN INCHES	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5	Total	Frag
STR/ AREA																				
ST's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STR 12	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
STR 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STR 16	0	0	0	1	0	3	1	1	0	0	0	0	0	1	0	0	1	0	8	1
STR 17	0	0	0	2	0	1	0	2	0	0	1	1	1	1	0	1	0	0	10	3
STR 19	0	0	3	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	7	3
PIT 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STR 20	0	0	1	7	0	3	0	1	0	1	0	0	0	1	0	0	0	0	14	10
PIT 5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
STR 21A	0	0	3	1	6	3	1	3	0	2	1	3	0	1	0	0	0	0	24	4
PIT 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
STR 21B	0	3	1	5	20	29	0	1	2	0	9	6	0	1	0	1	0	0	78	5
TOTALS	**0**	**3**	**8**	**17**	**27**	**41**	**3**	**8**	**2**	**3**	**11**	**10**	**1**	**5**	**0**	**3**	**1**	**0**	**143**	**27**

TABLE 20: HAND-FORGED L-HEAD NAIL TOTALS

SIZE IN INCHES	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5	Totals	Frags
STR/AREA																				
ST's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
STR 12	0	3	0	3	1	1	4	3	1	2	2	2	2	0	1	1		0	**26**	10
STR 13	0	0	1	0	0	2	0	0	0	1	0	1	1	0	0	0	0	0	**6**	0
STR 16	0	1	1	2	2	3	0	2	0	1	1	2	1	0	0	0	0	0	**16**	10
STR 17	44	1	1	3	5	4	3	3	0	2	1	1	2	1	0	2	0	0	**73**	14
STR 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
PIT 6	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	**2**	1
STR 20	0	0	1	4	4	0	2	2	0	0	0	3	0	2	0	1	0	1	**20**	37
STR 21A	0	2	0	4	1	3	3	2	1	0	2	0	0	0	0	0	0	0	**18**	5
STR 21B	0	0	0	1	1	2	0	0	0	1	0	0	0	0	0	0	0	0	**5**	4
TOTALS	**44**	**7**	**4**	**17**	**14**	**16**	**12**	**12**	**2**	**7**	**6**	**9**	**7**	**3**	**1**	**4**	**0**	**1**	**166**	**81**

TABLE 21: HAND-FORGED FLATHEAD NAIL TOTALS

SIZE IN INCHES	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5	Totals	Frags
STR/AREA																				
ST's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
STR 12	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	0
STR 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	1
STR 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
STR 17	2	0	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	1	**8**	9
STR 19	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0
PIT 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
STR 20	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	**4**	3
PIT 9	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0
STR 21A	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	**3**	2
STR 21B	0	0	0	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	**6**	4
TOTALS	**3**	**1**	**0**	**3**	**4**	**3**	**1**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**24**	**19**

TABLE 22: HAND-FORGED MANUFACTURED HEADLESS NAIL TOTALS

SIZE IN INCHES	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5	Totals	Frags
STR/AREA																				
ST's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
STR 12	0	0	0	3	0	1	1	2	2	2	0	0	0	0	0	0	0	0	**11**	3
STR 13	0	0	0	0	0	0	1	4	0	0	0	0	0	1	0	0	0	0	**6**	0
STR 16	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**	0
STR 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
STR 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
PIT 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
STR 20	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**	0
STR 21A	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	**2**	0
STR 21B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
TOTALS	**0**	**0**	**0**	**3**	**0**	**2**	**2**	**6**	**2**	**4**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**21**	**3**

TABLE 23: MACHINE-CUT NAIL TOTALS

Head Type	Flathead	Blockhead	Hand-Finished	T-head	Total	Unknown Fragments
STR/AREA						
Shovel Tests	0	0	0	0	**0**	0
STR 12	0	0	0	0	**0**	0
STR 13	0	0	0	0	**0**	0
STR 16	0	0	0	0	**0**	0
STR 17	1- 1 1/4"	0	1 - 1 1/2" 1 frag	0	**3**	2
STR 19	0	1 - 2 1/4" 2 frags	1 - 21/2'	1- 1 1/4" 1 frag	**6**	1
STR 20	1 - 2"	1 - 1 1/2"	0	0	**2**	1
PIT 9	1 - 1 1/4"				**1**	0
STR 21A	2 - 1 1/4" 2 frags	0	1 - 2" 1 frag	1 - 2" 1 - 1 1/4"	**8**	1
STR 21B		3 -1 1/4" 1 - 3/4"	1 frag	1 - 1 3/4"	**6**	5
TOTALS	**7**	**8**	**6**	**5**	**26**	**10**

Military Artifacts

Military Artifacts were identified with the aid of a variety of sources including Calver and Bolton (1950); Stone (1974); and Hanson and Hsu (1975). The most informative form of military artifact came in the form of buttons bearing various insignia. Button analysis methods followed Wyckoff (1984). Buttons were identified by material and surface treatment, form, decoration, and marker's marks if present. Excavations revealed buttons from both Canadian militia and British regulars, as well as U.S. military units. The Royal Canadian Volunteers button represents a militia regiment that served on nearby St. Joseph Island before being disbanded in 1802; 13 years before Fort Drummond was established. The British Army "Belgique" shako plate and buttons of the Commissiariat Department and Royal Regiment of Artillery further attest to a British Army presence. Yet, the U.S. Artillery and U.S. Infantry buttons present some interesting possibilities.

There do not seem to be any references in the documentary record for U.S. forces occupying the installation after the British evacuation. Indeed, only one U.S. officer was sent to accept the public buildings upon the evacuation, and a local resident was to be appointed as the caretaker (McCabe 1828). However, there are sporadic references to the island in the 1830's, and at least one council held on the island on September 21, 1831 (Schoolcraft 1831). The best documentation of the U.S. presence on the island is in connection with the staff of the Boundary Commission. The accounts of commissioners Major Joseph Delafield and Thomas L. McKenney mention U.S. military staff visiting Drummond Island as part of the commission's duties. While it is impossible to determine

the exact origin of these U.S. military buttons, these documented Boundary Commission visits are a likely source.

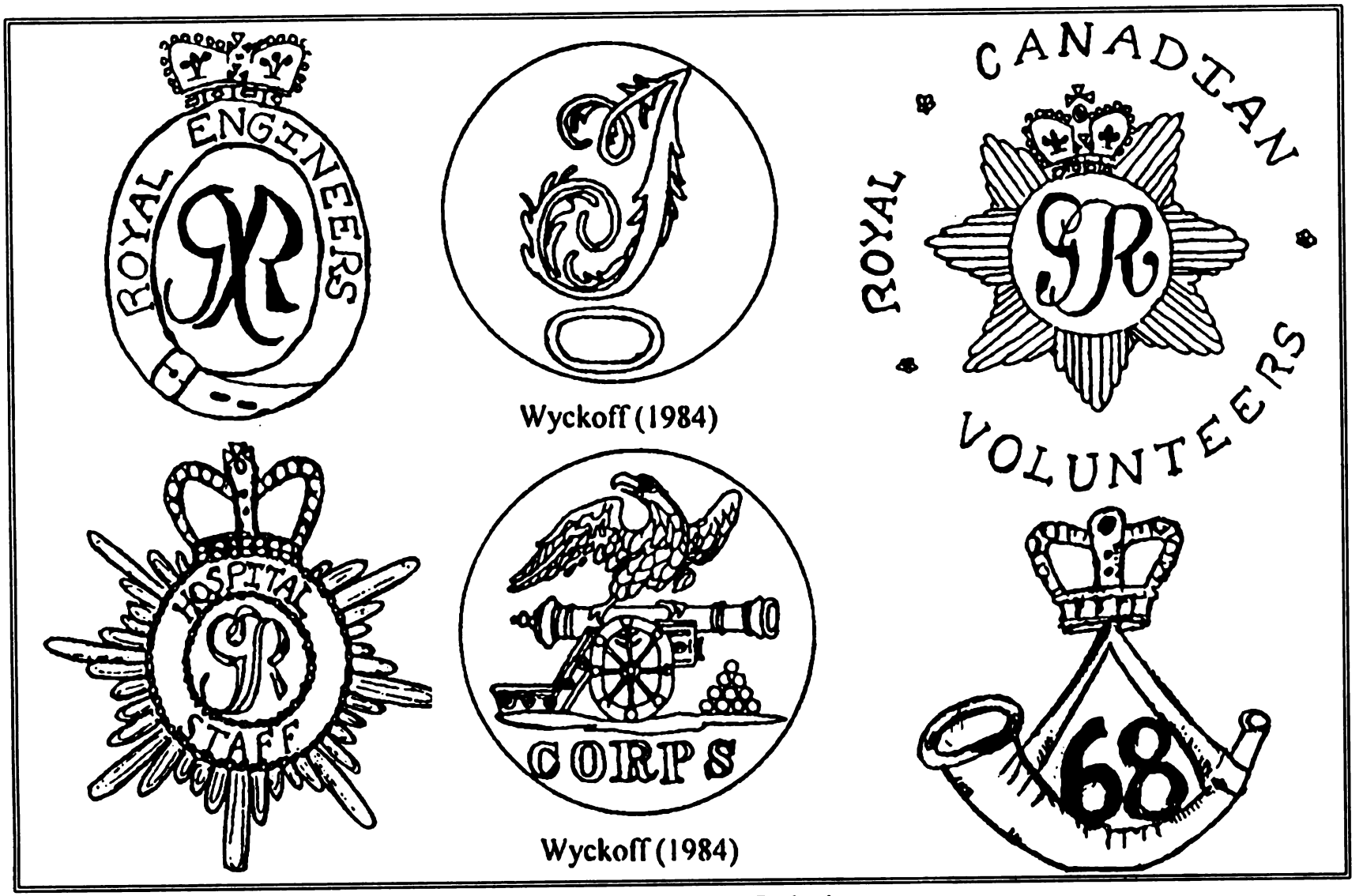


Figure 68: Military Insignia

Trade Silver

Trade silver terminology was derived from Hamilton (1995). The British Indian Department, established in 1755, spent vast sums of money on presents in order to court Native American allegiance. Fur trading companies also used items such as trade silver in their transactions. Yet, silver and copper alloy items of personal adornment were only a small portion of the array of gifts and trade items including, cloth, tools, and guns and ammunition. An 1823 list of the Indian Department stores detailed a myriad of items. Trade silver pieces included: 15 pairs of armbands, 48 gorgets, 2080 pairs of earbobs, 4000 broaches, 20 breast plates, and 3 sizes of medals (Clarke 1823: 151-152).

The archaeologically derived trade silver inventory from this post is relatively small in size and composed of smaller scale items (Table 24). There are several possible reasons for this pattern. The smaller items such as earbobs, earrings, and tinklers could have been lost or broken off more easily, while larger items such as gorgets and broaches were more carefully curated. Unfortunately, decades of relic-hunting and especially metal-detecting activities no doubt have removed many such items from the site illegally.

TABLE 24: TRADE-SILVER INVENTORY

Bldg	Provenance	Count	Description
16	7452.089ext.03	1	trade-silver clasp
17	7452.078.03.A1	1	trade-silver ear bob fragment
17	7452.021.03.A1	2	trade-silver chain links: circumference=1 3/4"
17	7452.045.01.04	1	trade-silver tinkler (flat triangle w/ one hole at each end)
17	7452.045.03	2	trade-silver fastener fragments
17	7452.077.02	1	trade-silver ribbon broach with central brass pin
17	7452.077.04	2	trade-silver ear bobs
17	7452.079.08.F21	1	trade-silver ear bob
20	7452.119.06.A2	1	trade-silver (copper alloy silver wash) earring hoop diameter=1/2"
20	7452.119.06.A2	1	trade-silver concave backing w/ central hole
20	7452.041.02	1	trade-silver loop earring
20	7452.111.03	1	trade-silver (copper alloy) earring hoop fragment
21	7452.057.05	1	trade-silver ear bob w/ hoop
21	7452.058.02	1	trade-silver ear bob w/ hoop

Summary and Conclusions

The 1992, 1994, and 1995 Fort Drummond site excavations centered on the remains of eight structures located in the extant northwest corner of the site. Historic maps of the site identified several "private" buildings, an officer quarter compound, and a kitchen and messhouse. In addition, a large store for foodstuffs and a probable semi-subterranean trader's hut were also investigated in this general area. The goals of the excavations were to gather data to assess the function and placement of the structures, and to examine the role of this site during a critical period for the maintenance of the Canada-U.S. border in the early nineteenth century.

Excavations provided a deal of insight on functions and the nature of occupation for these structures. Structure 12 represented a 50 foot by 40 foot officers' quarter with a probable second story. The double-flue, double-sided chimney, was placed centrally in the southern portion of the building with hearths oriented north and south. The structure could have been partitioned into northern and southern sections. There is also evidence of an external storage cellar running off the northern wall. Its location in relation to historic maps argues that it could have been the commanding officer's quarters.

Despite the partial destruction of structure 13 by quarry enlargements, its north-south dimension was approximately 80 feet long. Unfortunately, the small sample size precluded conclusive statements regarding functionality. However, this dimension fits well with dimensions recorded for several barracks and storehouses at this site and for the post on St. Joseph's Island. The large chimney does suggest a quarter function among others. Hence, it is most likely this structure served as a storehouse and quarter.

Structure 16 was a 30 feet by 50 feet quarter, with the capacity for stores. The chimney remains were located on the eastern wall of the structure, suggesting the western side could have served as a cool-temperature storage facility. The ceramic and glass assemblages reflected relatively high status wares, the faunal remains suggested a reliance on barrel bulk items, distributed and consumed by the military. These lines of information point to a military occupation. Unfortunately, the presence of a small amount of trade goods is at best ambiguous, and does not allow speculation regarding the identity of occupants, such as fur traders or Indian Department officials. While discrete occupational components could not be identified, it is likely that this structure had several different occupational periods.

Structure 17 was a 20 feet by 50 feet quarter and store. The centrally placed chimney was most likely double sided with hearths facing east and west. This structure yielded the highest density and greatest variety of remains for the site. The large, diverse assemblage points to both residential and storehouse functions. The relatively large quantity of trade goods and military items does suggest fur trade and/or Indian Department and military occupations at some point. This structure also recorded the highest levels of wild species and also the lowest level of domesticated species such as cattle, swine, and sheep and goat. This pattern indicates occupants frequently hunted or obtained wild species in kind, rather than relying on military barrel bulk rations as did the occupants of Structure 16.

Structure 19 was perhaps the most enigmatic structure in terms of interpretation. It measured 30 feet north-south by 25 feet east-west, and there was no evidence of a chimney. Given differences in sample sizes, its assemblage did not differ significantly

relative to the other structures. This fact would suggest some kind of residential and perhaps combined with a storage function. Its central location and proximity to the well argue for a very early or very late placement in the occupational sequence of the site. Given its small size and lack of a chimney, it may have been occupied only on a seasonal basis.

The remains of structure 20 were the best preserved on the site. The remnant structural outline was still visible on the surface. The structure measured 30 feet by 50 feet with the chimney centrally placed in the northern portion of the building. The hearths were oriented east-west. The nature of the assemblage resembled that of structure 17, including the faunal remains, and to a lesser extent, trade goods. Yet, the quality of construction and the placement of two privies on its eastern side, confirmed through floral analysis, strongly indicate a multiple occupancy quarter.

The artifact and faunal assemblages clearly indicated that structures 21A and 21B represented a quarter/messhouse and kitchen area respectively. However, discrepancies within in the documentary record, and between the documentary and archaeological records did not allow for the positive identification of these structures as either the commanding officers quarters and kitchen, or the former engineer quarters and kitchen. Yet given the evidence for structure 12, it is more likely that these structures represented the engineer quarter.

While structure 75 bore an overall resemblance to trader's huts excavated on St. Joseph Island, the elaboration of the interior chamber clearly sets this structure apart. The structural detail and paucity of artifacts suggest a specialized function such as

storage. However, the hypothesized functions of a lime kiln and powder magazine have been ruled out.

Common building techniques included both post-and beam and frames for structures. Extant surface stones were often incorporated into the footings of structures. Subsurface footings were either dry-laid or laid with very little mortar, as was the case with chimneys. Evidence from structures 16, 17, and 20 indicate that several building did have wooden floors with joists and sleepers as supports. Often, the flooring supports and hearthstones were anchored in place by being set into large pools of mortar.

Ceramics

The nature of the artifact assemblages was typical for an early nineteenth century military site. Pearlware accounted for approximately two-thirds of the ceramics while creamware accounted for just under one-third. Whiteware accounted for just over 2% of the assemblage. Higher status wares during this time period such as hard paste porcelain, accounted for only .28%, whereas refined redware represented only .03% of the assemblage. Utilitarian wares such as coarse red earthenware accounted for 1.43% of the ware total while gray body salt glazed stoneware comprised .93% of the ware total. Unfortunately, vessel form identification proved to be difficult due to the size of most sherds.

Decorative styles proved much easier to assess. Transfer printed designs accounted for nearly half of the identifiable total. In turn, blue transfers accounted for nearly half of this total. The terminal site occupation date of 1828 coincides with the date of introduction for green and polychrome transfers. These colours were present in very low frequencies. Dendritic mocha occurred in fairly high frequency in structures 16 and 17.

Edge-decorated ceramics included blue at just over 6% of the decorative total followed by green at over 4.5%. A single sherd of the rare red shell-edge was also discovered.

Clay Pipes

For clay pipes, most bowls showed no decoration. Impressed "TD" was the most common decorative motif. Other common early nineteenth century decorative bowl motifs included cross-hatch, flutes, and laurel leaf. Stem decorations included molded floral and red hand-painted designs. A single example of a rare red earthenware stem was also recovered. A large clay pipe concentration recovered from pit 9, associated with structure 20. This cache was composed of a minimum of 127 clay pipes based on a count of unique pipe bowls. It would appear that all bowls had an impressed "TD" surmounted by a curlicue. However, some variation did exist in the in the spur area of the pipes. A total of 16 spurs were unmarked, while an additional 16 spurs had a molded "TD" while 98 had a "WG" on the spur. It would appear that the use of unmarked, "TD", and "WG" spurs was overlapping if not contemporaneous.

Glass

The glass assemblage was typical for a British military site of the early nineteenth century. Lead glass and soda-lime were the predominant fabrics. The most common vessel forms were the stemmed drinking glass, dark green cylindrical bottle, and the panel bottle. The overwhelming majority of stemmed vessels were "wine" glasses with central knop stems and bucket or in-curved bowls. Unfortunately, while a large number of dark green bottle sherds were recovered (n=486), the small size of many of these fragments hampered analysis. Down-tooled and sting rims were documented.

The site also yielded 175 glass trade beads. Not surprisingly, the most common forms of manufacture were hollow cane and wire-wound. Complex forms such as the multi-layered "coraline d'aleppo" beads were found in a much lower frequency. Only a single molded glass bead was recovered. The 2.1-4 mm size registered the highest percentage at 44.4%, while the 6.1-8mm size accounted for 32.16% of beads. In terms of colors, white beads under 4.1mm accounted for 29% of all beads. Cobalt blue beads, mostly of the 6.1-8mm size, contributed 16.3% of the assemblage. Turquoise and light blue were also present in significant numbers. Only 1 one example of a red colored bead was recorded. However, the archaeologically derived trade silver inventory from this post is relatively small in size and composed of smaller scale items such as earbobs, earrings, and tinklers.

Metal

In terms of metal artifacts, nails were the most common type. Head types within the wrought nail category included: rosehead, T-head, L-head, flathead, and manufactured headless. By far the most common head type was the rosehead. There was a concentration of roseheads in the 1 to 2-inch sizes representing generalized finishing, flooring, and shingle nails. Smaller peaks also occurred for the 3 and 4-inch sizes that are associated with activities such as framing. Machine-cut nails were also present on the site. These nails have not been recovered in pre-1820's Great Lakes contexts. Many of these nails exhibited the early cut-nail characteristic of a rounded shank, while several specimens had hand finished-heads. These attributes were dated from 1815 to the late 1830's.

Buttons representing the Canadian militia and British regulars, as well as U.S. military units were present on the site. The British Army "Belgique" shako plate and

buttons of the Commissariat Department, Hospital Staff and Royal Regiment of Artillery attest to the British military presence. Yet, the U.S. Artillery and U.S. Infantry buttons present some interesting possibilities for addressing cross-border contact. The best documentation of the U.S. presence on the island is in connection with visits by the staff and surveyors of the Boundary Commission who visited the island several occasions.

The British post of Fort Drummond and its material assemblages represent a narrowly defined time period that witnessed transitions in industrial technology and consumer tastes. Hence, these assemblages are a gauge for material and stylistic innovations and their subsequent adoption in historic lifeways, and form an excellent comparative collection. Further, the botanical and faunal studies illuminate patterns of diet and subsistence in this period highlighting various sources of foodstuffs and medicines.

Certainly, Fort Drummond must be viewed within the context of the formation and maintenance of the international border. Each group on the frontier viewed the post in a different manner. Posts such as Fort Drummond formed an integral part of the economic network within the region, and the U.S. government saw the post as a threat to political and economic sovereignty. The post became a distribution center for fur trade items, food, liquor, and domestic supplies as well as military accouterments. The British Government utilized it as a temporary outpost, while local post officials had a vested military and fur trade interest and sought to secretly strengthen the post. In part, Native Americans visited the post to continue economic alliances and to play off the U.S. and Britain against each other. Large fur-trading companies on both sides of the border sought to either tighten or loosen cross-border trade restrictions in order to consolidate

territory and maximize profits. Several fur-trade companies even placed representatives on Drummond Island.

Given the political and economic importance of this post and others in the Western Great Lakes, a high degree of spatial integration between military and civilian groups should be evident on these sites. The nature and location of the "private" structures indicate that certain civilians such as fur traders interacted more closely with the military. The various statuses of site inhabitants form a polythetic set or a pool for possible interaction. It is the spatial arrangement of these structures and the identification of their occupants' statuses that reflect the nature of interaction between diverse groups. It would seem that the degree of spatial integration between groups such as the military, and civilians, and Native Americans on frontier sites was be greater than in non-frontier settings. Hence, the frontier situation can transform closed social systems such as that of the military, into more open and flexible social systems incorporating diverse groups. As an example, the formation of the British-Indian Department, combining military status and civilian contractors, represents a form of this transformational process.

Indeed, the post of Drummond Island was not only an important link in the British occupation of the region, but it represented the final stage of British occupation of U.S. territory in the region. Its peaceful evacuation represented the transformation of the borderlands from a simply series of contested sites, to a state of peaceful coexistence along international border.

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Abbreviations

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NAC	National Archives of Canada
NAM	National Archive Microcopy (U.S.)
NMC	National Map Collection (Canada)
RG	Record Group
MG	Manuscript Group

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APPENDIX B:

FLORAL ANALYSIS: FORT DRUMMOND (20CH50), AN EARLY NINETEENTH CENTURY BRITISH FORT, DRUMMOND ISLAND MICHIGAN

BY KATHRYN C. EGAN-BRUHY

FLORAL ANALYSIS: FORT DRUMMOND (20CH50), AN EARLY NINETEENTH CENTURY BRITISH FORT, DRUMMOND ISLAND, MICHIGAN

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INTRODUCTION

Analysis of floral remains from four pit features at the Fort Drummond site (20CH50), Drummond Island, Michigan was directed toward refining our understanding of the occupational history and subsistence activities at the site. The results of the analysis are compared with analyses of floral assemblages from the Marina site, Marquette Mission site, Fort Gratiot, Fort Brady, and Fort Michilimackinac to further understanding of variations in the subsistence regimes of Early to Middle Historic Native American, French, British, and American sites.

ANALYTICAL METHODS

The archaeobotanical assemblage from the Fort Drummond site includes wood and bark charcoal, domesticates (i.e., squash), local and exotic fruit seeds, and a variety of other seeds and floral remains. These remains were derived from four flotation samples (approximately 80 liters) from four pit features (pits 1, 2, 3, and 4). Since the research objective was directed toward interpretation of the subsistence, only the subsistence remains are considered in this analysis.

For purposes of quantitative comparison, only the flot collected samples are considered. Variations in the distribution and density of these remains may reflect differences in the occupational histories of the site, subsistence activities, and seasonality. These data also provide information regarding the historic environment.

Due to the high volume of seeds contained in the flotation samples, each sample was subdivided using a riffle sampler, and a subsample (1/8 - 1/32) was extracted for analysis. Quantities of seeds per 10 liter sample were then standardized based on the quantities recovered in the subsamples. Materials recovered from the flot samples were sorted under low power binocular magnification (10x). Subsistence remains > 2 mm in size were recovered from the samples. The < 2 mm residue was then scanned and all categories of floral remains, that were not represented in the > 2 mm component, were separated.

Seeds were identified to genus and species whenever possible, although some specimens could only be identified to family. Identifications were made with the aid of modern

comparative collections and with identification keys (Martin and Barkley 1961; Montgomery 1977).

Both carbonized and uncarbonized floral remains are considered in this study. Given the relatively recent age of the site, unburned seeds could be preserved. While many of the unburned seeds are considered to be archaeological, modern seeds introduced through bioturbation (Stein 1983) and during collection of samples (Minnis 1981), also appear to be present.

RESULTS

Four samples (80 liters) from pits 1, 2, 3, and 4 at the Fort Drummond site (20CH50) are included in the analysis. The samples include: wood and bark charcoal, domesticates, and seeds (including native and exotic fruits, weeds, and woodland taxa) (Table 1). As noted above, the analysis focused on the seeds, many of which are associated with subsistence activities.

Domesticates

Squash (*Cucurbita pepo*) seeds were identified in two of the four flotation samples (see Table 1). Pit 2 contained a moderate density of squash seeds (44 ct/10 liters), and Pit 3 contained a high density of seeds (340 ct/10 liters). Overall, squash represents 0.25 percent of the seed assemblage.

Fruit

Fruit seeds (n=137,224) comprise the largest single component of the floral assemblage, representing 83.5 percent of the seed assemblage. Identified taxa include strawberry (*Frageria* sp.), cherry (*Prunus* spp.), gooseberry (*Ribes* sp.), blackberry/raspberry (*Rubus* spp.), elderberry (*Sambucus* sp.), blueberry (*Vaccinium* sp.), and fig (*Ficus* sp) (Table 1). All of the seeds are unburned. Features 2 and 3 produced high densities of fruit seeds (66,760 and 64,030 respectively), while features 1 and 3 produced low (680 ct/10 liters) to moderate (5751 ct/10 liters) densities, respectively. The relative abundance of fruit seeds in all of these features suggests use. The exceptionally large number of seeds in Features 2 and 3 suggest that they represent privies, while features 1 and 4 may have been used as privies or as refuse pits.

Blackberry/raspberry is the most abundant representing 80.3 percent of the total seed assemblage. The other fruit taxa are represented in significantly lower percentages, strawberry (2.6%) and the others each at less than 0.5 percent.

All of the fruits except fig would have been locally available, many growing wild on the island and adjacent mainland. While figs are not indigenous to the area, they were grown in the eastern United States as early as the colonial era (Jamestown, 1629). By the

eighteenth century, they appear to have been commonly grown in the southern and southeastern states (Condit 1947).

Medicinal Plants

Several of the taxa represented in the assemblage were used by Euro-Americans for medicinal purposes. Seeds of potential medicinal plants include: aster family (Asteraceae), trailing arbutus (*Epigea repens*), naked mitterwort (*Mitchella nuda*), buttercup (*Ranunculus* sp.), rose family (Rosaceae), dock (*Rumex* sp.), mountain ash (*Sorbus americana*), nettle family (Urticaceae), and violet (*Viola* sp.) (Table 1). The fruits of these taxa were used to treat intestinal and urinary ailments (Erichsen-Brown 1979), and thus would have involved ingestion of the seeds.

Mountain ash may also have been used to make an alcoholic beverage. The berries of this shrub are not edible until they become overripe and at that point, other species of this genus, have been used to make an alcoholic cider (Rafinesque 1828, in Erichsen-Brown 1979:88).

All of the taxa would have grown on the island or on the adjacent mainland. The relatively low densities of many of these taxa (< 25 ct/10 liters) suggest that some may have been introduced by natural dispersal mechanisms (air-borne or animals). However, their association with "night soils" and other ingested fruits raises the possibility that they also were consumed.

Other Seeds

Other seeds represented in the assemblage include clover (*Trifolium* sp.), marsh pea (*Lathyris palustris*), cf. pinweed (*Lechea intermedia*), nightshade family (Solanaceae), and parsley family (Umbelliferae) (Table 1). Most of the taxa represent a relatively small percentage of the assemblage (<0.25%) and occur in relatively low densities (< 100 ct/10 liters). The nightshade seeds, however, represent a moderately large percentage (15.8%) of the seed assemblage and occur in high densities (> 3000 ct/10 liters) in features 2 and 3, suggesting that they were consumed. There are no references to the medicinal use of nightshade in the nineteenth century; however, tomato (a member of the nightshade family) was becoming a popular fruit in Michigan in the early nineteenth century. Colonel Hamtramack introduced the tomato into Detroit before the close of the eighteenth century and by the 1830s it was being made into ketchup and sold in Detroit stores. At this time the "healthful virtues" of the fruit were extolled in the *Detroit Spectator,* and by the early 1840s the *Michigan Farmer* had published articles on its cultivation and recipes for its use (Smith 1994). Therefore, it would seem that the high frequency of nightshade seeds may represent tomato seeds.

SITE SUMMARY

Squash is the only domesticate in the assemblage that may have been locally grown. It is unlikely that tomato was grown at the fort, as the short growing season in this area would have limited the potential for mature fruits. It is more likely that tomatoes were brought to the fort as a condiment or canned preserve.

While the overall frequency of squash is low (0.25% of the seed assemblage), its relative paucity is not necessarily representative of its dietary value. Given their soft seed coats, squash seeds tend to decay relatively quickly. Further, it was generally the flesh of the squash that was consumed rather than the seeds, thus diminishing the representation of the seeds.

Fruits were clearly an important food resource at the fort. While some of the fruits may have been eaten fresh, many were probably consumed as jams and preserves or perhaps dried. These goods would have been acquired through trade, gift giving, or perhaps limited market exchange with Native American peoples who came to the fort. Specialty items, like the figs, were probably introduced through market exchange or as a gift introduced through non-local, Euro-American sources.

It is unclear if the seeds from medicinal plants or the other plants were exploited by the occupants of the site. The distribution and densities of these seeds do not present a clear pattern of exploitation. Rather, these seeds may have been introduced by natural factors (e.g., bioturbation or seed rain). Certainly, however, some of these plants were exploited for medicinal uses as is reflected in ethnographic sources from the time.

INTRA- AND INTER-SITE COMPARISON

The Marquette Mission site (20MK6), St. Ignace, Michigan represents a Contact-Period Native American occupation in the region. Preliminary analysis of archaeobotanical remains from this site includes the identification of corn and squash, a variety of fruits including cherries, raspberry/blackberry, blueberry, elderberry, and strawberry (many of which would only be recovered through flotation), and numerous "medicinal" and other plants (Parrish 1987).

Previous analyses of floral collections from Fort Michilimackinac have identified a similar range of floral remains (Blake 1981; Blake and Cutler 1969, 1977, 1978; Egan-Bruhy 1998). While a limited range of fruits were identified in the water-screened samples analyzed by Egan-Bruhy (1998), Scott's (1991) analysis of flotation-recovered materials identified a similar diversity of small-seeded wild fruits (e.g., blueberry and elderberry). Scott also identified wheat, which is one of the few examples of a military ration or market food item in the British component.

The Marina site (47AS24), Madeline Island, Wisconsin, is generally contemporaneous with the French occupation of Fort Michilimackinac. This assemblage also includes a variety of small-seeded fruits (blueberry, elderberry, and strawberry), as well as corn, squash, fruits (e.g., pin and choke cherries and blackberry/raspberry), and nuts (hazelnut and hickory) (Arzigian n.d.).

Forts Brady (20CH51), Sault Ste Marie, Michigan and Gratiot (20SC41), Port Huron, Michigan, provide insight into the 19th century American military diet in the region. Analyses of flora from Fort Gratiot indicate heavy reliance on nuts and fruits (blackberry, blueberry, grape, and cherry) that may have been consumed fresh, or in preserves purchased from local merchants. In addition, there are locally grown crops, including corn, squash and peas, as well as market/military goods such as rice (Egan 1986, 1989, 1991).

The assemblage from Fort Brady contains a smaller range of wild and domesticated resources (Egan 1989). Squash is the only crop plant identified. High densities of blackberry clearly indicate exploitation of this fruit, either fresh or in preserves. Other fruits include grape, choke cherry, and blueberry. The limited representation of domesticated crops in this assemblage was assumed to be a reflection of sampling error.

CONCLUSIONS

In comparison to other 17th to 19th century assemblages in the region (e.g., Marina site, Fort Michilimacinac, Fort Gratiot, Fort Brady and Fort Drummond), it appears that Native American populations, as represented at the Marquette Mission site (Parrish 1987), relied on extensively on wild as well as domesticated resources. Similarly, the French exploited a range of wild resources, as well as raising crops. The British and Americans seem to have relied more on market goods, available from local vendors, and military rations (e.g., wheat and rice). Higher percentages of wild plant resources in the French assemblages may be related to the close association, and in fact marriages, between the French and Native peoples.

The floral assemblage from the Fort Drummond site is somewhat different than the assemblages from the British assemblage at Fort Michilimackinac, and appears in some respects to be more similar to the French pattern. Analysis of the Michilimackinac assemblage, which provides a perspective on both French and British subsistence practices, suggests some differences in subsistence regimes of the two nationalities. The French component at the Fort Michilimackinac contains a higher proportion of wild plant foods and some resources that appear to have been traded into the area (i.e., hickory nut). The British component reflects a heavier reliance on domesticated crops that were probably grown at the fort. Similarly, analyses of faunal remains from Fort Michilimackinac indicate a greater dependence on domesticated animals during the British occupation of the fort (Cleland 1970; Scott 1985).

Notably, the assemblage from Fort Drummond includes a small percentage of locally grown crop plants, and a large percentage and considerable variety of locally available fruits, as well as exotic fruit (fig) and other, somewhat exotic foodstuffs (i.e., cf. tomato). The low percentage of locally grown crops and the high percentage of trade/gift/market items may in part be related to sampling error. It may also be a reflection of status, as other archaeological indicators suggest that the pits included in the analysis were used by the officers and traders (Demers 2000, personal communication).

The absence of corn and limited representation of other crop plants would suggest that cultivation was not a particularly successful endeavor on the island, particularly given the harsh climate and shallow soils. An archival reference (Clarke et al. 1823:148), however, indicates that 25 bushels of "Indian Corn" were present in the fort stores, 16 were noted as "bad." The absence of corn, may therefore, be related to preservation and context, with the majority of the samples coming from privies. The majority of the other food-related seeds are hard shelled and would not decompose in the digestive tract or for many years following their deposition in "night soils." In contrast, corn is more likely to be digested and to decompose within a short time after its deposition. Therefore, the British reliance on corn at the Fort Drummond site, as well as other historic archaeological sites, may be higher than the sample values suggest.

The distinctions noted between the two British forts, Fort Drummond and Fort Michilimackinac floral assemblages may be due to several factors. In part, the differences may be related to functional differences in the contexts being sampled, privies versus other feature types (e.g., house floors, refuse pits etc.). Further, the variation may be related to the socio-economic differences represented in the disposal areas. Finally the differences may be related to temporal, functional differences between the sites.

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Table 25: Identified Flora for Fort Drummond (20CH50)

Context			Crops Plants	Fruit Seeds									Other Seeds													
Pit/Feature	Flot Set	Level	*Cucurbita pepo* /Squash seeds	*Ficus* sp./Fig	*Frageria* sp./Strawberry	*Prunus* spp./Cherry	cf. *Ribes* sp./Gooseberry	*Rubus* sp./ Blackberry	*Sambucus* sp./Elderberry	*Sorbus americana* /Mountain ash	*Vaccinium* sp./Blueberry	*Vitis* sp./Grape	Asteraceae/Aster family	*Epigea repens* /Trailing arbutus	*Lathyris palustris* /Marsh pea	cf. *Lechea intermedia* /Pinweed	*Mitella nuda* /Naked miterwort	*Ranunculus* sp./Buttercup	Rosaceae	*Rumex* spp./Dock	Solanaceae/Nightshade family	*Trifolium* sp./Clover	Umbelliferae/Parsley family	cf. Urticaceae/Nettle family	*Viola* sp./Violet	Unidentifiable
1	3					32		608	32		8			8			8			16	32	80			8	
2			44		2,304	36	8	64,412					8							136	3,096	24			16	12
3	2	4	370	750	1,950	70		61,260				5							50		22,765	50	35	50		50
4	5				4	52	4	5,685	4	36					4	12	4	4			88	112			16	32

***Values standardized to estimated 10 litre flot volume**

APPENDIX C:

ANIMAL REMAINS FROM THE FORT DRUMMOND SITE (20CH50), ON DRUMMOND ISLAND, MICHIGAN

BY TERRENCE J. MARTIN

ANIMAL REMAINS FROM THE FORT DRUMMOND SITE (20CH50) ON DRUMMOND ISLAND, MICHIGAN

Terrance J. Martin
Illinois State Museum

INTRODUCTION

The junction of Great Lakes Superior, Michigan, and Huron was the scene of a three and a half century-long struggle between Native Americans, French, British, and the United States of America. Following the end of the War of 1812, the British withdrew their forces from Mackinac Island 45 miles northeast to Drummond Island. Drummond Island is in a strategic location in that it guarded the entrance to the Straits of Mackinac from the north as well as the entrance to the St. Mary's River from both the south and the east. The British inhabited Drummond Island from 1815 until 1828 when the United States took possession of the island. This was the last British fortification on United States soil. Despite the strategic importance of Drummond Island, it was never the site of a military installation after this time (Demers 1992).

Following surface surveys of the Fort Drummond site in 1990 by the Michigan State University Museum, a total of 74 historic structural features were identified. Eight structures were further tested by a series of excavations that occurred through 1995. More than 3,600 animal remains were encountered during the excavation of these eight structures, and these are the subject of the following report. A particularly interesting aspect of the faunal analysis is to examine the animal exploitation strategies and foodways of an early nineteenth century British military post, and to compare these to patterns at other forts in the region. Because many of these northern outposts were occupied for prolonged periods of time, and were inhabited by individuals or families that may or may not have had ties to the military, we are also interested in seeing how collections of animal remains resemble civilian settlements in having a stronger or weaker domestic appearance. Among the specific topics of interest are: (1) the relative importance of wild versus domesticated animals; (2) butchering patterns and indications that animals were killed and processed locally or elsewhere; and (3) examining intra-site differences in species composition and physical condition of the animal remains that might offer insights into special activity areas. Explored herein for Fort Drummond are patterns that may be the result of numbers of people inhabiting each of the eight structures investigated, as well as the economic and/or social status of the inhabitants of the various structures, seasonality and duration of the occupations, the nature of refuse disposal behavior at each of the structures, and the extent of modern disturbance to each structure.

METHODS

Animal remains from the site of Fort Drummond were examined at the Illinois State Museum's Research and Collections Center in Springfield, where an extensive collection of modern vertebrate skeletons and freshwater mussel shells are available for reference. Information for each identified specimen and each lot of unidentified specimens was entered on tags that were printed on acid-free, archive-quality paper. Specimens and accompanying tags were placed within 2 mil or 4 mil polyethylene zipper bags. Included on the specimen tags is information on archaeological provenience, animal taxon represented, anatomical element, side, portion of element, condition of epiphyseal closure (if present), completeness, weight of the specimen in grams, natural modifications (e.g., carnivore- and/or rodent-gnawing), and cultural modifications (e.g., burning and cut marks). Standard lengths of fish were estimated for each identified bone by referring to bones from modern fish of known size in the comparative collection. Single specimen counts were tallied in the case of refitted broken specimens as well as rejoined epiphyses and shafts. All information was then entered into computer files in order to facilitate the analysis.

Summary calculations are presented in tables and include the number of identified specimens (NISP), minimum number of individuals (MNI) per taxon, total weight of specimens per taxon in grams, and biomass (in kg) for each taxon. Scientific and common names for animals follow Wilson and Reeder (1993) for mammals, American Ornithologists' Union (1983) and supplements for birds, Frank and Ramus (1995) for reptiles and amphibians, Robbins et al. (1991) for fish, and Turgeon et al. (1998) for freshwater mussels. Estimates of MNI were calculated from each structures (including features and pits that were assigned to each structure) based on element, symmetry, element portion, and biological age or body size. Biomass estimates were derived from allometric scaling. As described by Reitz and Scarry (1985:18), "the weight of the archaeological bone is used in an allometric formula [see Reitz and Scarry 1985:67] to predict the quantity of biomass for the skeletal mass recovered rather than the total original weight of the individual animal represented by the recovered bone." This approach avoids the problem of basing meat estimates on MNI and determining whether the meat from entire animals was consumed at the site from which the archaeological sample was acquired. Another problem is variation among different faunal analysts' average meat weights for various taxa (cf. Cleland 1970; Theler 1987; White 1953). Despite the problems inherent in the various techniques used to estimate biomass and usable or edible meat, the interpretive value of such measures are the *relative* importance of the various taxa rather than the *absolute* quantities.

SPECIES ACCOUNTS

More than 3,600 animal remains were recovered from various areas of the site of Fort Drummond (see Table 1). Although the greatest *number* of specimens was recovered from Structure 17 (48.1% of the total number of specimens from the site by count), Structure 20 was equivalent to Structure 17 in terms of the total *weight* of the specimens

acquired (both contributed 21% of the total faunal assemblage by weight). Overall, 35.1% of the specimens by count and 80.0% by specimen weight were identified more precisely than class. This varied considerably by structure in that identified specimens ranged from 14.5% by count in Structure 21A to over 45% in both Structures 17 and 13. By weight the range was from 66.9% in Structure 21A to 94.4% in Structure 13. Consistent with the largest sample size among the structures, more species were identified from Structure 17 than from any other structure at the site (cf. Grayson 1984:166).

Mammals

The species compositions of each of the structures are presented in Tables 2 through 9. Domesticated mammal species are the prevalent remains from the site as a whole in that bones and teeth from horse, swine, cattle, and sheep/goat contribute 34.7% of all identified specimens from the site. By structure, specimens from these species range from 17.4% of all identified specimens in Structure 17 to 73.6% in Structure 21A. Cattle remains (a total of 220; 17.2% of all NISP) are slightly more numerous than swine (171 total specimens; 13.4% of all NISP). Whereas cattle remains were present in all of the structures, swine was absent only from Structure 13. A total of 49 sheep and/or goat specimens (3.8% of the total NISP) are represent in all structures except Structure 21A. A perspective on the skeletal portion profiles of the domesticated mammals identified from each structure is presented in Table 10. The remains of horse are noteworthy in that a distal femur shaft from Structure 21B was sawed on both proximal and distal margins in a manner similar to beef. The other horse bones consist of a fragment of ischium and acetabulum from Structure 21 B and an astragalus from Structure 19.

Ubiquitous at the site are remains of hare and/or rabbit (family Leporidae). Although the historic range of eastern cottontail (*Sylvilagus floridanus*) extended into Michigan's western Upper Peninsula, the only native species of rabbit and hare on Drummond Island is the snowshoe hare (*Lepus americanus*) (Baker 1983:141, 149). Consistent with this information, the only diagnostic leporid bones recovered (e.g., mandibles, crania, long femura and tibiae) are those from snowshoe hare. A total of 260 specimens were identified, representing a minimum of 23 individuals. Many of the unidentified vertebrate remains may be small shaft fragments from hares that could not be differentiated from birds.

Albeit present on the island, white-tailed deer apparently was not abundant. Only 14 deer specimens were encountered at the site. Structure 12 was the only structure devoid of deer, and the four bones recovered from Structure 20 are the most from any structure. A fragment of a shed right antler from a caribou was identified from Unit 65 (level 6) within Structure 17. Although the natural distribution of caribou includes Drummond Island (Baker 1983:614), the species must have been rare when the fort was occupied, since the antler is the only caribou specimen at the site.

Black bear remains were found among three of the structures. These consist of three first phalanges from Structure 17, an entire left ulna from Structure 19, and a left fourth metatarsal from Structure 20. Additional wild mammal species that were identified

at the site include beaver in Structure 17 and 21A, muskrat and river otter in Structure 17, and mink in Structure 19. Canid remains comparable in size to domestic dogs were found at three structures. Structure 17 canid bones consist of a left astragalus, a left second metatarsal, and a left third metatarsal; Structure 19 canid remains include four cranial fragments, an atlas and axis vertebra, and a left distal femur epiphysis; and Structure 21B a right distal femur and a right proximal tibia. Two bones from domestic cats were unearthed, a left proximal femur shaft with an open epiphysis from Structure 20, and a right innominate bone fragment from Structure 21A..

Birds

Bones from passenger pigeon are most numerous of any single species at the site and were recovered from four structures (12, 16, 17, and 19). Altogether there are 45 bones from at least nine individuals. Flocks of millions of these migratory birds occurred in the Michigan hardwood forests during the nineteenth century. These colonies were largest in the northern part of the state with the largest colony reported to be one near Petoskey in Emmet County (to the west of the Mackinac Straits) in 1878 (McPeek 1994:138).

Domestic chicken is represented by 40 bones from a minimum of 14 individuals. The only structures barren of chicken remains are Structures 21A and 21B. Other gallinaceous birds include turkey and grouse. Two turkey bones were encountered: a carpometacarpal from Structure 17 and a subadult tibiotarsus shaft from Structure 21A. These occurrences are interesting in that the known historic range of the wild turkey was restricted to the southern half of the Lower Peninsula until European settlement and stocking programs increased its range to the north (Brewer et al. 1991:188). However, wild turkey was also identified from Late Woodland contexts at the Juntunen site on Bois Blanc Island (Cleland 1966:169). Fourteen bones from ruffed grouse (MNI = 4) were found among the materials from Structures 17, 20, and 21B. Similar to the turkey, the ruffed grouse has increased in numbers in the north due to European settlement and stocking programs (Brewer et al. 1991:184). One spruce grouse bone (a distal humerus from Structure 17), known to be a rather common resident of coniferous forests in the eastern Upper Peninsula (Brewer et al. 1991:182), was tentatively identified. Based on these findings, at least a small population of ruffed grouse resided on Drummond Island since at least the early historic occupations on the island.

As a group, the most common avian taxa represented at Fort Drummond are ducks, most of which visit the area only during spring and fall migrations. At least 24 to 28 individuals are represented by 194 duck bones. The fragments could be sorted into large, medium, and small-sized ducks, and several species were identified. Other than the teals, mallard/black duck, ring-necked duck, and hooded merganser, most of the identified ducks are commonly sighted on open water along the northern Lake Huron and eastern Lake Superior coastlines. Somewhat surprisingly, bones of the oldsquaw from Structure 17 are most abundant of any of the identified ducks. Oldsquaws are winter residents that sometimes occur in flocks of hundreds of birds, and which forage far into the open water (McPeek 1994:46). Common mergansers are also abundant winter residents. Along with the red-breasted merganser, bufflehead, and surf scoter, the

common merganser seems to favor the open water around the Great Lakes' islands, such as Drummond Island. The canvasback, a diving duck that is at home in open water, was tentatively identified from Structure 20 (see species descriptions by Brewer et al. 1991; McPeek 1994).

Although one of the most common water birds in the region, only three bones of the common loon were found, and these came from Structures 17 and 21B. Three species of grebe were encountered in Structure 17. The pied-billed grebe is a common migrant and summer resident, and the red-necked grebe was recently discovered to be an abundant fall migrant in the eastern Lake Superior area (McPeek 1994:2, 4). Other waterbirds include the greater yellowlegs (Structure 17) and lesser yellowlegs (Structure 12), common migrant shorebirds that frequent coastal sites as well as inland marshy areas (McPeek 1994:102, 103). The common snipe (found in Structure 12) is a common migrant and a summer resident in the Upper Peninsula (McPeek 1994:114).

Perhaps most surprising is the presence of a premaxillary/maxillary of a pileated woodpecker from Structure 17. The large woodpecker is a year-round resident in mature forests having large trees. The species is known to breed on Drummond Island (Brewer et al. 1991:274-275). Another smaller unidentified species of woodpecker is also represented from Structure 20 by an ulna shaft fragment. Also unexpected is the recovery of a carpometacarpal (from Structure 12) and a distal ulna (from Structure 20) from the American crow, since according to historical information (Brewer et al. 1991:316) this species did not expand its range into the Upper Peninsula until the middle of the nineteenth century. Reminiscent of the wild turkey, however, Cleland (1966:169) identified crow bones from the most recent prehistoric deposits at the Juntunen site.

Reptiles

The only reptile remains from the site are from aquatic turtles. Three ilium fragments recovered from Structures 17 and 19 are those of two individual snapping turtles. The only other identified turtle is a painted turtle from Structure 16 that is represented by carapace specimens (proneural and sixth peripheral). A single carapace fragment from Structure 16 and five plastron fragments from Structure 17 could only be identified as an unidentified species of semiaquatic turtle (family Emydidae).

Fish

There is a grand total of 185 identified fish bones from a minimum of 61 individuals. Considering the location of Fort Drummond on a large island in the Upper Great Lakes, the identified fish reflect a diverse assemblage of deep water species (e.g., lake whitefish, lake trout, and burbot), shallow water lake species (lake sturgeon, redhorse, yellow perch, freshwater drum), and shallow stream taxa (e.g., white sucker, black bass, sunfish). There is also considerable intra-site variation among the structures in the families and species present. For example, whereas walleye and whitefish are present among the samples from all of the structures, the only specimens from burbot are six bones from a single individual in Structure 13. White sucker, redhorse, northern pike, lake trout, yellow perch, black bass, and drum are each present among the remains from two to three structures.

Bivalves

Although a total of 15 freshwater mussel shell fragments were recovered from Structures 12 and 17, only one valve was complete enough to permit identification. The fatmucket from Structure 17 is a species common in lakes and other streams where it can survive in substrates consisting of mud, sand, or gravel (Cummings and Mayer 1992:150).

MODIFIED ANIMAL REMAINS

During the course of identifying animal remains, several specimens were noted as having been modified into artifacts.

Two bone buttons were recovered from Structure 17. The specimen from Unit 77, level 2, is 6.3 mm in diameter, 1.5 mm thick, and has one 2.4 mm diameter perforation in the center. A broken specimen from Unit 65, level 7, appears comparable in size except that it measures 1.3 mm in thickness.

Several calcined large mammal bone fragments from level 4 of Unit 118 within Structure 20 are pieces of broken cutlery handles. These were refitted into a minimum of three artifacts. Each has a series of round perforations (circa 2 mm in diameter) spaced exactly one inch apart, is flattened on one surface, and has red staining resulting from contact with iron. Two handle fragments are each 4 mm thick, and one is 5.4 mm thick.

Other signs of modification include dismemberment marks such as sawed margins, chop marks, and knife cuts. A total of 26 specimens were sawed, and these consisted of cattle and unidentified large mammal bones with the exception of a swine thoracic vertebra from Structure 12 a swine rib from Structure 17, and the horse femur from Structure 21B. The only context with no sawed bones is Structure 19; the other structures ranged from one sawed bone in Structure 13 to six in Structure 12. Since sawed bones are unusual at historical sites in Michigan prior to circa 1830, the presence of sawed specimens at Fort Drummond may be an indication of disturbance or mixture of some of the feature deposits by later inhabitants. Alternately, salted meats packed in barrels may have contained sawed bones that originated with the professional meat packer. Another 40 bones were chopped, and these range from none in Structure 21B to 16 in Structure 17. Knife cuts were seen on bones from each structure with a total of 44 being recorded for all contexts.

Whereas 8.2% of the animal remains from the site as a whole were either burned black or calcined white, only 5.4% from Structure 16 were burned (Table 1). In contrast, 30.5% of all specimens from Structure 13 had been exposed to fire. Instead of indicating cooking, burned animal remains may reflect the site inhabitants' attempts to incinerate refuse.

Damage to bones by carnivores and rodents was noted on 100 specimens. Only six bones were gnawed by rodents, and these came from Structures 12 (2), 17 (2), 20, and 21A. The rest were chewed by carnivores, and these were found at each of the structures.

The greatest numbers of carnivore-chewed bones came from Structure 17 (n = 29; 2.2%), Structure 20 (n = 22; 4.3%), Structure 21A (n = 14; 3.8%), Structure 16 (n = 12; 4.7%), and Structure 21B (n = 12; 2.1%). Overall, the 94 carnivore-damaged bones constitute only 2.6% of the total number of specimens, excluding mussel shells. Carnivore-gnawed bones at Fort Drummond are probably attributable to dogs that were scavenging refuse around the various buildings. Although less than 100 examples were noted, a study more focused on documenting agents of bone damage would probably add many more. However, Lyman (1994:277) warns that "Carnivore tooth marks . . . may not always be present on bones even if carnivores had unhindered access to them."

INTRA-SITE COMPARISONS

Attention to Tables 2 through 9 reveals that considerable variation exists among the samples of animal remains that were recovered from inside and around the various structures that were investigated at Fort Drummond. In this section, these variations are explored to see if patterns exist that have some correspondence with other historical and/or archaeological information on the Fort Drummond structures.

When suspicions arose that Structure 21 was actually two separate structures (21A and 21 B), we wanted to see if the samples of animal remains from the two areas are similar or different. Comparison of Tables 8 and 9 reveals that Structure 21A differs from 21B in several respects. First of all, even though biomass from beef is greater than biomass from pork in both structures, there are more swine specimens than cattle in 21A. The cattle specimens that are present in 21A are dominated by ribs and vertebrae with few cranial bones, foot bones, and no isolated teeth (Table 10). Structure 21A also has a greater proportion of hare specimens than we find in the refuse from Structure 21B. Another contrast is the complete absence of burned specimens in Structure 21A. Structure 21B has the larger of the two faunal collections, and 18.5% of the specimens are burned or calcined. The only sheep/goat specimens were encountered in Structure 21B, and these include cranial parts, isolated teeth, and a foot bone. The cattle specimens in 21B consist of cranial fragments, isolated teeth, and some foot bones, but most of the cattle specimens are vertebrae. Finally, Structure 21B contained two horse bones, one of which was a sawed femur shaft. These trends are consistent with the hypothesis that Structure 21A was primarily a place of meat consumption, whereas Structure 21B was a location where considerable refuse was disposed. Unfortunately, there are also indications that multiple occupations over time resulted in some differences in activities as well as some mixture of the refuse.

Structures 12 and 13 are enigmatic buildings that both have small samples of animal remains. Swine specimens occur in small numbers at Structure 12 and are absent altogether from Structure 13. Cattle remains are moderate in number in Structure 12 and high in Structure 13, but both collections are dominated by beef vertebrae and ribs. Sheep/goat specimens are present in small numbers at both locations, and a high proportion of specimens from both structures are from hare and fish. White-tailed deer remains are proportionally more abundant in Structure 13 than at any other structure at Fort Drummond, but this is based on only two specimens and reflects the small sample

size of these two areas. In contrast, ducks are numerous at Structure 12 and absent altogether at Structure 13. Structure 12 is thought to be an officers quarter, whereas Structure 13 may have functioned as living space for the quarter master.

Structure 16 has high proportions of swine and cattle specimens, as well as hare. Skeletal portions of swine are well balanced and include isolated teeth and foot bones. Although cattle are well represented by ribs, there are also many foot bones and cranial fragments. It is also unique in having the smallest proportions of fish and duck remains.

Structure 19 has the highest proportion of sheep/goat specimens at Fort Drummond, is high in cattle bones, and low in the occurrence of swine specimens. Miscellaneous species of mammal such as black bear and horse make up the highest proportion of specimens in Structure 19 than any other structure. There are moderate proportions for fish and ducks, but virtually no hare. Although low, the proportion of chicken bones is greatest of any structure.

In terms of weight of animal remains, Structures 20 and 17 are equivalent, and both dominate all other structures. In terms of the various animal taxa, Structure 20 is moderate in virtually all categories.

Structure 17 is distinctive in having the greatest number of specimens by count and the greatest species diversity of any structure. It also has the greatest proportions of specimens from hare, ducks, and passenger pigeon, coupled with the lowest proportions of swine, cattle, and sheep/goat. The refuse is moderate in the proportion of fish remains, however. This pattern may signify a civilian occupation or officers who hunted for much of their meat.

CONCLUSIONS

Archaeological investigation of eight structures at the Fort Drummond site yielded evidence for considerable diversity among the collections of animal remains that were obtained. Although remains of domesticated mammals are most numerous overall, snowshoe hare, ducks, and a variety of fish represented considerable variety in the diets of the fort's inhabitants. Passenger pigeons were also hunted and consumed on a frequent basis judging from common occurrence of their bones among the refuse of four of the structures. Unfortunately, the reoccupation of many (if not all) of the buildings by military personnel and civilians has probably resulted in considerable mixing of the habitation refuse in and around these structures. Although distinctive patterns are present, interpretations of the behavior that created these distinctions are challenging.

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Table 26: Sample Size of the Fort Drummond Faunal Assemblage by Structure and Feature

Structure/feature	Total NSP[1]	Total Weight (g) of NSP	Burned NSP	Total NISP[2]	Total Weight (g) of NISP
Structure 12					
Feature 1	1	1.3	0	0	–
Feature 6	16	11.1	13	5	4.6
Feature 8	1	1.5	0	0	–
Pit 7	3	35.8	0	2	32.1
Miscellaneous non-feature contexts	344	587.1	27	103	420.2
Structure 12 totals	365	636.8	40	110	456.9
Structure 13					
Feature 3	7	1.7	7	1	.1
Pit 8	3	28.4	0	3	28.4
Miscellaneous non-feature contexts	49	228.7	11	23	215.8
Structure 13 totals	59	258.8	18	27	244.3
Structure 16 totals	257	1,855.9	14	115	1,644.9
Structure 17					
Feature 16	8	11.4	1	5	8.2
Feature 17	13	65.3	0	9	61.3
Feature 18	10	10.3	0	6	4.5
Feature 21	1	.7	0	1	.7
Miscellaneous non-feature contexts	1,315	2,635.4	117	593	2,055.2
Structure 17 totals	1,347	2,723.1	118	614	2,129.9
Structure 19					
Pit 4	4	48.9	0	2	45.3
Pit 6	73	634.0	31	36	569.8
Miscellaneous non-feature contexts	78	512.6	1	23	470.3
Structure 19 totals	155	1,195.5	32	61	1,085.4

Table 26 (cont'd): Sample Size of the Fort Drummond Faunal Assemblage by Structure and Feature

Structure 20					
Pit 1	99	705.3	2	38	627.5
Pit 2	13	188.7	0	8	171.8
Pit 3	12	114.4	0	9	110.0
Pit 5	12	327.6	0	6	323.3
Pit 9	10	72.1	0	1	48.0
Miscellaneous non-feature contexts	365	1,168.0	51	128	860.8
Structure 20 totals	511	2,576.1	53	190	2,141.4
Structure 21A totals	366	1,421.4	0	53	950.3
Structure 21B					
Feature 13	9	87.7	0	6	86.6
Miscellaneous non-feature contexts	568	1,931.2	23	101	1,405.8
Structure 21B totals	577	2,018.9	23	107	1,492.4
Grand Totals	3,637	12,686.5	298	1,277	10,145.5

[1]Total number of specimens.
[2]Total number of identified specimens (i.e., specimens identified more precisely than class).

Table 27: Species Composition of Animal Remains from Structure 12

	NISP[1]	MNI[2]	NISP Wt (g)	Biomass (kg)[3]
MAMMALS				
Snowshoe hare/cottontail, Leporidae	22	3	10.7	.222
Unidentified small rodent	1	1	.1	–
Swine, *Sus scrofa*	5	2	46.3	.830
Cattle, *Bos taurus*	16	1	323.5	4.774
Sheep, *Ovis aeries*	1	1	31.1	.580
Sheep/Goat, *Ovis/Capra*	4	–	20.8	.404
Unidentified large mammal	105	–	145.2	2.322
Unidentified medium/large mammal	44	–	22.9	.440
Unidentified medium mammal	8	–	1.6	.040
Unidentified small mammal	14	–	1.3	.033
BIRDS				
Large duck spp., Anatinae	5	1	3.7	.067
Medium duck spp., Anatinae	8	2	2.7	.050
Small duck spp., Anatinae	5	1	1.5	.030
Ruffed/spruce grouse, *Bonasa/Dendragapus*	1	1	.5	.011
Domestic chicken, *Gallus gallus*	5	2	3.8	.069
cf. Lesser yellowlegs, *Tringa flavipes*	1	1	.1	.003
Common snipe, *Gallinago gallinago*	1	1	.2	.005
Passenger pigeon, *Ectopistes migratorius*	2	1	.4	.009
American crow, *Corvus brachyrhynchos*	1	1	.5	.011
Unidentified bird	24	–	1.4	.028
FISH				
Lake sturgeon, *Acipenser fulvescens*	1	1	.3	.012
Sucker spp., Catostomidae	8	2	.9	.027
Northern pike, *Esox lucius*	1	1	1.0	.030
Whitefish spp., *Coregonus/Prosopium*	4	2	.5	.017
Lake trout, *Salvelinus namaycush*	2	2	1.2	.034
Walleye, *Stizostedion vitreum*	14	2	5.8	.118
Freshwater drum, *Aplodinotus grunniens*	1	1	.7	.030
Unidentified fish	34	–	2.8	.068
UNIDENTIFIED VERTEBRATA	23	–	4.1	–

Table 27 (cont'd): Species Composition of Animal Remains from Structure 12

BIVALVES				
Unidentified mussel	3	1	.6	–
Grand Totals	365	31	636.8	10.264
Totals, Identified below class	110	30	456.9	7.333
Percentage identified below class	30.1		71.7	71.4

[1]Number of identified specimens.

[2]Minimum number of individuals estimated from the structure as a whole, ignoring spatial designations (i.e., Features 1, 6, and 8, and Pit 7); this estimate represents the minimum number of individual animals from the area of Structure 12.

[3]Biomass in kg was calculated from NISP weights using allometric formulae presented by Reitz and Scarry (1985:67). No estimates are presented for taxa that are not considered as human food items.

Table 28: Species Composition of Animal Remains from Structure 13

	NISP[1]	MNI[2]	NISP Wt (g)	Biomass (kg)[3]
MAMMALS				
Snowshoe hare/cottontail, Leporidae	8	1	2.2	.053
White-tailed deer, *Odocoileus virginianus*	2	1	12.2	.250
Cattle, *Bos taurus*	7	1	219.3	3.365
Sheep/Goat, *Ovis/Capra*	1	1	5.0	.112
Unidentified large mammal	13	–	9.1	.192
Unidentified medium/large mammal	15	–	4.9	.110
Unidentified small mammal	1	–	.1	.003
BIRDS				
Domestic chicken, *Gallus gallus*	1	1	1.4	.028
FISH				
Whitefish spp., *Coregonus/Prosopium*	1	1	.1	.005
Burbot, *Lota lota*	6	1	2.9	.055
Walleye, *Stizostedion vitreum*	1	1	1.2	.032
Unidentified fish	3	–	.4	.014
Grand Totals	59	8	258.8	4.219
Totals, Identified below class	27	8	244.3	3.900
Percentage identified below class	45.8		94.4	92.4

[1]Number of identified specimens.

[2]Minimum number of individuals estimated from the structure as a whole, ignoring spatial designations (i.e., Feature 2 and Pit 8); this estimate represents the minimum number of individual animals from the area of Structure 13.

[3]Biomass in kg was calculated from NISP weights using allometric formulae presented by Reitz and Scarry (1985:67). No estimates are presented for taxa that are not considered as human food items.

Table 29: Species Composition of Animal Remains from Structure 16

	NISP[1]	MNI[2]	NISP Wt (g)	Biomass (kg)[3]
MAMMALS				
Snowshoe hare/cottontail, Leporidae	27	2	20.3	.395
Swine, *Sus scrofa*	30	2	278.3	4.169
White-tailed deer, *Odocoileus virginianus*	1	1	1.6	.040
Cattle, *Bos taurus*	30	3	1,252.8	16.147
Sheep, *Ovis aeries*	5	2	73.1	1.252
Sheep/Goat, *Ovis/Capra*	2	–	8.3	.177
Unidentified large mammal	33	–	78.3	1.332
Unidentified medium/large mammal	92	–	130.3	2.106
Unidentified small mammal	13	–	1.3	.033
BIRDS				
Large duck spp., Anatinae	3	1	2.3	.044
Medium duck spp., Anatinae	2	1	.8	.017
Domestic chicken, *Gallus gallus*	2	1	1.0	.020
Passenger pigeon, *Ectopistes migratorius*	2	1	.5	.011
Unidentified bird	3	–	1.0	.011
REPTILES				
Painted turtle, *Chrysemys picta*	2	1	2.5	.058
Semiaquatic pond turtle, Emydidae	1	–	.2	.011
FISH				
Lake sturgeon, *Acipenser fulvescens*	1	1	.1	.005
Lake whitefish, *Coregonus clupeaformis*	1	1	.3	.012
Black bass, *Micropterus* sp.	1	1	.2	.005
Sunfish sp., *Lepomis* sp.	1	1	.1	.004
Walleye, *Stizostedion vitreum*	1	1	.2	.005
Unidentified fish	1	–	.1	.005
Grand Totals	257	20	1,855.9	25.859
Totals, Identified below class	115	20	1,644.9	22.372
Percentage identified below class	44.7		88.6	86.5

[1]Number of identified specimens.

[2]Minimum number of individuals estimated from the structure as a whole, ignoring spatial designations; this estimate represents the minimum number of individual animals from the area of Structure 16.

[3]Biomass in kg was calculated from NISP weights using allometric formulae presented by Reitz and Scarry (1985:67). No estimates are presented for taxa that are not considered as human food items.

Table 30: Species Composition of Animal Remains from Structure 17

	NISP[1]	MNI[2]	NISP Wt (g)	Biomass (kg)[3]
MAMMALS				
Snowshoe hare/cottontail, Leporidae	168	11	123.1	2.001
Beaver, *Castor canadensis*	4	1	13.0	.265
Muskrat, *Ondatra zibethicus*	1	1	.8	.022
Dog/coyote/wolf, *Canis* sp.	3	1	6.5	.142
Black bear, *Ursus americanus*	2	1	4.9	.110
River otter, *Lutra canadensis*	1	1	.5	.014
Swine, *Sus scrofa*	57	3	385.5	5.590
cf. Wapiti, *Cervus elaphus*	1	1	262.4	–
White-tailed deer, *Odocoileus virginianus*	2	1	10.0	.209
Cattle, *Bos taurus*	45	2	1,101.2	14.377
Sheep, *Ovis aeries*	2	1	43.2	.780
Sheep/Goat, *Ovis/Capra*	3	–	14.4	.290
Unidentified large mammal	103	–	246.2	3.734
Unidentified medium/large mammal	235	–	287.0	4.286
Unidentified small mammal	63	–	13.3	.270
BIRDS				
Common loon, *Gavia immer*	2	1	14.6	.234
Pied-billed grebe, *Podilymbus podiceps*	2	1	1.2	.024
Red-necked grebe, *Podiceps grisegena*	1	1	1.1	.022
cf. Least grebe, *Tachybaptus dominicus*	1	1	.2	.005
Mallard/black duck, *Anas platyrhynchos/rubripes*	1	1	.3	.007
Surface-feeding duck (large), Anatini	1	–	.7	.015
cf. Ring-necked duck, *Aythya* cf. *collaris*	2	1	.7	.015
Oldsquaw, *Clangula hyemalis*	13	2	11.9	.194
cf. Surf scoter, *Melanitta* cf. *perspicillata*	1	1	.5	.011
cf. Bufflehead, *Bucephala albeola*	3	2	1.8	.035
Hooded merganser, *Lophodytes cucullatus*	2	1	.5	.011
Common merganser, *Mergus merganser*	2	1	1.5	.030
Red-breasted merganser, *Mergus serrator*	1	1	.9	.019
Unidentified large duck spp., Anatinae	14	[2]	11.4	.187
Unidentified medium duck spp., Anatinae	50	[5]	23.9	.367
Unidentified small duck spp., Anatinae	50	[6]	16.3	.259
cf. Greater yellowlegs, *Tringa melanoleuca*	1	1	.5	.011
Domestic chicken, *Gallus gallus*	25	6	18.7	.293
cf. Spruce grouse, *Dendragapus canadensis*	1	1	.9	.019
Ruffed grouse, *Bonasa umbellus*	5	1	1.4	.028
Unidentified gallinaceous bird, Galliformes	2	–	.4	.009
Turkey, *Meleagris gallopavo*	1	1	7.1	.122

Table 30 (cont'd): Species Composition of Animal Remains from Structure 17

Passenger pigeon, *Ectopistes migratorius*	40	6	8.8	.148
Pileated woodpecker, *Dryocopus pileatus*	1	1	.6	.013
Woodpecker sp., Picidae	1	1	.1	.003
Unidentified medium/large bird	3	–	.9	.019
Unidentified medium bird	39	–	8.7	.146
Unidentified small bird	4	–	.9	.019
REPTILES				
Snapping turtle, *Chelydra serpentina*	1	1	3.2	.069
Semiaquatic pond turtle, Emydidae	5	1	4.3	.084
FISH				
Lake sturgeon, *Acipenser fulvescens*	28	2	14.9	.255
White sucker, *Catostomus commersoni*	3	2	.6	.020
Shorthead redhorse, *Moxostoma macrolepidotum*	1	1	.3	.012
Sucker sp., Catostomidae	1	–	.2	.009
Northern pike, *Esox lucius*	9	4	2.5	.062
Lake whitefish, *Coregonus clupeaformis*	5	2	1.0	.030
Whitefish spp., *Coregonus/Prosopium*	18	–	1.8	.048
Lake trout, *Salvelinus namaycush*	2	1	.7	.023
Black bass, *Micropterus* sp.	3	1	.6	.018
Sunfish family, Centrarchidae	1	1	.1	.004
Yellow perch, *Perca flavescens*	5	3	.8	.023
Walleye, *Stizostedion vitreum*	17	3	6.5	.130
Freshwater drum, *Aplodinotus grunniens*	1	1	.5	.023
Unidentified fish	147	–	7.6	.153
UNIDENTIFIED VERTEBRATA	128	–	22.5	–
BIVALVES				
Fatmucket, *Lampsilis siliquoidea*	1	1	.4	–
Unidentified freshwater mussel	11	–	6.1	–
Grand Totals	1,347	80	2,723.1	35.318
Totals, Identified below class	614	80	2,129.9	26.856
Percentage identified below class	45.6		78.2	76.0

[1]Number of identified specimens.

[2]Minimum number of individuals estimated from the structure as a whole, ignoring spatial designations (i.e., hearth floor, Features 16, 17, 18, and 21); this estimate represents the minimum number of individual animals from the area of Structure 17.

[3]Biomass in kg was calculated from NISP weights using allometric formulae presented by Reitz and Scarry (1985:67). No estimates are presented for taxa that are not considered as human food items.

Table 31: Species Composition of Animal Remains from Structure 19

MAMMALS	NISP[1]	MNI[2]	NISP Wt (g)	Biomass (kg)[3]
Snowshoe hare/cottontail, Leporidae	1	1	.1	.003
Dog/coyote, *Canis* sp.	7	1	16.7	.331
Black bear, *Ursus americanus*	1	1	134.7	2.170
Mink, *Mustela vison*	2	2	1.3	.033
Horse/mule, *Equus* sp.	1	1	20.3	.395
Swine, *Sus scrofa*	5	2	36.1	.663
cf. White-tailed deer, *Odocoileus virginianus*	1	1	5.8	.128
Cattle, *Bos taurus*	16	1	776.8	10.502
Sheep, *Ovis aeries*	4	2	74.0	1.266
Goat, *Capra hircus*	1	1	6.8	.148
Sheep/Goat, *Ovis/Capra*	2	–	2.1	.051
Unidentified large mammal	26	–	57.9	1.015
Unidentified medium/large mammal	58	–	48.7	.869
Unidentified medium mammal	4	–	.4	.012
BIRDS				
Blue-winged/Green-winged teal, *Anas discors/crecca*	1	1	.2	.005
Large duck spp., Anatinae	1	1	.4	.009
Medium duck spp., Anatinae	3	2	1.2	.024
Small duck spp., Anatinae	1	–	1.5	.017
Domestic chicken, *Gallus gallus*	3	2	1.0	.020
Passenger pigeon, *Ectopistes migratorius*	1	1	.2	.005
Unidentified bird	5	–	2.2	.042
REPTILES				
Snapping turtle, *Chelydra serpentina*	2	1	3.9	.079
FISH				
Lake sturgeon, *Acipenser fulvescens*	1	1	.1	.005
cf. Redhorse sp., *Moxostoma* sp.	1	1	.5	.018
Lake whitefish, *Coregonus clupeaformis*	1	1	.2	.009
Whitefish spp., *Coregonus/Prosopium*	1	–	.1	.005
Walleye, *Stizostedion vitreum*	2	1	1.2	.032
Freshwater drum, *Aplodinotus grunniens*	2	1	.9	.036
UNIDENTIFIED VERTEBRATA	1	–	.9	–
Grand Totals	155	25	1,195.5	17.813
Totals, Identified below class	61	25	1,085.4	15.875
Percentage identified below class	39.4		90.8	89.1

[1]Number of identified specimens.

[2]Minimum number of individuals estimated from the structure as a whole, ignoring spatial designations (i.e., Pits 4 and 6); this estimate represents the minimum number of individual animals from the area of Structure 19.

[3]Biomass in kg was calculated from NISP weights using allometric formulae presented by Reitz and Scarry (1985:67). No estimates are presented for taxa that are not human food items.

Table 32: Species Composition of Animal Remains from Structure 20

	NISP	MNI	NISP Wt (g)	Biomass (kg)
MAMMALS				
Snowshoe hare/cottontail, Leporidae	28	3	12.6	.257
Black bear, *Ursus americanus*	1	1	5.3	.118
Domestic cat, *Felis catus*	1	1	1.6	–
Swine, *Sus scrofa*	36	4	433.8	6.217
White-tailed deer, *Odocoileus virginianus*	4	2	113.2	1.856
Cattle, *Bos taurus*	45	1	1,397.3	17.814
Sheep, *Ovis aeries*	2	2	17.8	.351
Sheep/Goat, *Ovis/Capra*	14	–	123.7	2.010
Unidentified large mammal	157	–	331.0	4.874
Unidentified medium/large mammal	89	–	92.1	1.541
Unidentified medium mammal	3	–	2.6	.062
Unidentified small mammal	4	–	.8	.022
BIRDS				
Surface-feeding duck (large), Anatini	1	1	1.6	.031
cf. Canvasback, *Aythya valisineria*	1	1	1.8	.035
cf. Red-breasted merganser, *Mergus serrator*	2	1	1.1	.022
Unidentified large duck spp., Anatinae	10	[2]	7.5	.128
Unidentified medium duck spp., Anatinae	8	[2]	6.7	.015
Unidentified small duck spp., Anatinae	2	1	.4	.009
Domestic chicken, *Gallus gallus*	4	2	4.2	.075
Ruffed grouse, *Bonasa umbellus*	8	2	2.5	.047
American crow, *Corvus brachyrhynchos*	1	1	.4	.009
Unidentified bird	22	–	3.5	.064
FISH				
Lake sturgeon, *Acipenser fulvescens*	3	1	2.2	.056
White sucker, *Catostomus commersoni*	3	1	.9	.028
Whitefish spp., *Coregonus/Prosopium*	4	1	.3	.012
Lake trout, *Salvelinus namaycush*	2	2	1.0	.030
Northern pike, *Esox lucius*	1	1	.3	.012
Black bass, *Micropterus* sp.	2	2	1.9	.047
Yellow perch, *Perca flavescens*	1	1	.1	.004
Walleye, *Stizostedion vitreum*	5	2	3.2	.072
Unidentified fish	35	–	3.1	.074
UNIDENTIFIED VERTEBRATA	11	–	1.6	–
Grand Totals	511	34	2,576.1	35.892
Totals, Identified below class	190	34	2,141.4	29.255
Percentage identified below class	37.2		83.1	81.5

Table 33: Species Composition of Animal Remains from Structure 21A

	NISP[1]	MNI[2]	NISP Wt (g)	Biomass (kg)[3]
MAMMALS				
Snowshoe hare/cottontail, Leporidae	4	1	1.3	.033
Beaver, *Castor canadensis*	1	1	.6	.017
Domestic cat, *Felis catus*	1	1	1.5	–
Swine, *Sus scrofa*	22	2	257.6	3.889
White-tailed deer, *Odocoileus virginianus*	1	1	40.8	.741
Cattle, *Bos taurus*	17	3	646.1	8.898
Unidentified large mammal	155	–	350.2	5.127
Unidentified medium/large mammal	153	–	118.9	1.939
BIRDS				
Unidentified duck spp., Anatinae	1	1	.1	.003
Turkey, *Meleagris gallopavo*	1	1	1.4	.028
Unidentified medium bird	4	–	1.9	.037
FISH				
Lake sturgeon, *Acipenser fulvescens*	1	1	.5	.018
Whitefish spp., *Coregonus/Prosopium*	3	1	.2	.009
Unidentified fish	1	–	.1	.005
Grand Totals	366	13	1,421.4	25.859
Totals, Identified below class	53	13	950.3	18.751
Percentage identified below class	14.5		66.9	72.5

[1]Number of identified specimens.

[2]Minimum number of individuals estimated from the structure as a whole, ignoring spatial designations (i.e. Feature 1); this estimate represents the minimum number of individual animals from the area of Structure 21A.

[3]Biomass in kg was calculated from NISP weights using allometric formulae presented by Reitz and Scarry (1985:67). No estimates are presented for taxa that are not considered as human food items.

Table 34: Species Composition of Animal Remains from Structure 21B

	NISP[1]	MNI[2]	NISP Wt (g)	Biomass (kg)[3]
MAMMALS				
Snowshoe hare/cottontail, Leporidae	2	1	.4	.012
Dog/coyote/wolf, *Canis* sp.	2	1	3.9	.090
Horse/mule, *Equus* sp.	2	1	110.5	1.816
Swine, *Sus scrofa*	16	2	160.9	2.546
White-tailed deer, *Odocoileus virginianus*	3	1	10.0	.209
Cattle, *Bos taurus*	44	2	1,094.5	14.299
Sheep, *Ovis aeries*	4	1	74.4	1.272
Sheep/goat, *Ovis/Capra*	4	–	23.5	.451
Cattle/sheep/goat, *Bos/Ovis/Capra*	14	–	11.7	–
Unidentified large mammal	422	–	495.7	7.010
Unidentified medium/large mammal	38	–	27.3	.516
Unidentified medium mammal	3	–	1.9	.047
Unidentified small mammal	2	–	1.1	.027
BIRDS				
Common loon, *Gavia immer*	1	1	.5	.011
Ruffed grouse, *Bonasa umbellus*	1	1	.5	.011
Unidentified gallinaceous bird, Galliformes	1	–	.2	.005
Unidentified bird	1	–	.1	.003
FISH				
Sucker sp., Catostomidae	1	1	.1	.005
Whitefish spp., *Coregonus/Prosopium*	11	1	.9	.028
Walleye, *Stizostedion vitreum*	1	1	.4	.013
Unidentified fish	3	–	.3	.011
UNIDENTIFIED VERTEBRATA	1	–	.1	–
Grand Totals	577	14	2,018.9	28.382
Totals, Identified below class	107	14	1,492.4	20.768
Percentage identified below class	18.5		73.9	73.2

[1]Number of identified specimens.

[2]Minimum number of individuals estimated from the structure as a whole, ignoring spatial designations (i.e., Feature 13); this estimate represents the minimum number of individual animals from the area of Structure 21B.

[3]Biomass in kg was calculated from NISP weights using allometric formulae presented by Reitz and Scarry (1985:67). No estimates are presented for taxa that are not considered as human food items.

Table 35: Skeletal Portions by Structure for the Fort Drummond Site

STRUCTURE	Str. 12	Str. 13	Str. 16		Str. 17		Str. 19
	NISP	NISP	NISP	%	NISP	%	NISP
SWINE	**5**	**0**	**30**	**99.9**	**57**	**100.1**	**5**
Cranial fragments	0	0	0	–	1	1.8	0
Isolated teeth	0	0	4	13.3	7	12.3	1
Vertebrae	1	0	6	20.0	11	19.3	3
Ribs	0	0	4	13.3	13	22.8	0
Proximal forequarter	1	0	4	13.3	7	12.3	0
Innominate bone	0	0	4	13.3	2	3.5	1
Proximal hindquarter	3	0	6	20.0	13	22.8	0
Distal appendages/foot	0	0	2	6.7	3	5.3	0
CATTLE	**16**	**7**	**30**	**99.9**	**45**	**99.9**	**16**
Cranial fragments	1	0	1	3.3	5	11.1	0
Isolated teeth	0	0	0	–	5	11.1	0
Vertebrae	5	3	4	13.3	10	22.2	3
Ribs	4	3	11	36.7	8	17.8	6
Proximal forequarter	3	0	0	–	2	4.4	1
Innominate bone	1	0	4	13.3	2	4.4	1
Proximal hindquarter	0	0	3	10.0	10	22.2	2
Distal appendages/foot	2	1	7	23.3	3	6.7	3
SHEEP/GOAT	**5**	**1**	**7**	**100.1**	**5**	**100.0**	**7**
Cranial fragments	3	0	0	–	2	40.0	0
Isolated teeth	1	0	2	28.6	0	–	2
Vertebrae	0	1	0	–	0	–	0
Ribs	0	0	0	–	1	20.0	0
Proximal forequarter	1	0	3	42.9	1	20.0	2
Innominate bone	0	0	0	–	0	–	0
Proximal hindquarter	0	0	0	–	1	20.0	0
Distal appendages/foot	0	0	2	28.6	0	–	3

Table 35 (cont'd): Skeletal Portions by Structure for the Fort Drummond Site

	Structure 20		Structure 21A		Structure 21B		Grand Totals	
	NISP	%	NISP	%	NISP	%	**NISP**	**%**
SWINE	**36**	**100.0**	**22**	**99.9**	**16**	**100.0**	**171**	**100.0**
Cranial fragments	5	13.9	5	22.7	2	12.5	13	7.6
Isolated teeth	2	5.6	5	22.7	2	12.5	21	12.3
Vertebrae	5	13.9	0	–	3	18.8	29	17.0
Ribs	3	8.3	1	4.5	1	6.2	22	12.9
Proximal forequarter	10	27.8	7	31.8	3	18.8	32	18.7
Innominate bone	0	–	2	9.1	1	6.2	10	5.8
Proximal hindquarter	8	22.2	0	–	3	18.8	33	19.3
Distal appendages/foot	3	8.3	2	9.1	1	6.2	11	6.4
CATTLE	**45**	**99.8**	**17**	**100.0**	**44**	**99.9**	**220**	**100.1**
Cranial fragments	0	–	1	5.9	8	18.2	16	7.3
Isolated teeth	1	2.2	0	–	10	22.7	16	7.3
Vertebrae	11	24.4	4	23.5	13	29.5	53	24.1
Ribs	12	26.7	5	29.4	4	9.1	53	24.1
Proximal forequarter	6	13.3	1	5.9	3	6.8	16	7.3
Innominate bone	2	4.4	2	11.8	0	–	12	5.5
Proximal hindquarter	2	4.4	3	17.6	2	4.5	22	10.0
Distal appendages/foot	11	24.4	1	5.9	4	9.1	32	14.5
SHEEP/GOAT	**16**	**99.8**	**0**	**–**	**8**	**100.0**	**49**	**99.9**
Cranial fragments	4	25.0	–		2	25.0	11	22.4
Isolated teeth	4	25.0	–		2	25.0	11	22.4
Vertebrae	1	6.2	–		0	–	2	4.1
Ribs	1	6.2	–		0	–	2	4.1
Proximal forequarter	4	25.0	–		2	25.0	13	2.0
Innominate bone	0	–	–		1	12.5	1	2.0
Proximal hindquarter	1	6.2	–		0	–	2	4.1
Distal appendages/foot	1	6.2	–		1	12.5	7	14.3